

# **PHASE II LIMITED SUBSURFACE INVESTIGATION**



**Suffolk Downs Racecourse  
525 William F. McClellan Highway  
Boston, Massachusetts**

**Prepared For:**

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**Vertex Project No: 43068**

**March 2, 2017**

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Locke Lord LLP  
2200 Ross Avenue, Suite 2800  
Dallas, Texas 75201  
Attn: Ms. Elizabeth E. Mack, Esq.

**RE: Phase II Limited Subsurface Investigation**  
Suffolk Downs Racecourse  
525 William F. McClellan Highway  
Boston, Massachusetts 02128  
**VERTEX Project No. 43068**

Dear Ms. Mack:

The Vertex Companies, Inc. (VERTEX) is pleased to submit this Phase II Limited Subsurface Investigation (LSI) report for the above referenced property (the Site). The purpose of this Phase II LSI was to assess the Site for potential impacts from environmental conditions identified in VERTEX's preliminary review of environmental information pertaining to the Site and identified in VERTEX's Phase I Environmental Site Assessment (ESA) dated March 2, 2017, to provide data in areas that had not been previously investigated, and to provide preliminary information regarding soil and groundwater quality for use in estimating potential soil and groundwater management costs during redevelopment.

The following report details the procedures of the Phase II LSI and summarizes the sampling results. The investigation was performed in general accordance with VERTEX proposal P.2585.17, dated January 11, 2017 and executed by Ms. Elizabeth E. Mack on January 13, 2017.



Please do not hesitate to contact us at your convenience should you have any questions or comments regarding this report or our recommendations. It has been a pleasure working with you on this project.

Sincerely,

**The Vertex Companies, Inc.**



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Assistant Project Manager



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**PHASE II LIMITED SUBSURFACE INVESTIGATION**  
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**Boston, Massachusetts 02128**  
**VERTEX Project No. 43068**

## 1.0 INTRODUCTION

### 1.1 General Site Information

The Site consists of two adjoining parcels of land occupying a total of approximately 160 acres in Massachusetts. One parcel of land is in the City of Revere, and the other is in the City of Boston. Both parcels are currently owned by Sterling Suffolk Racetrack, LLC. The Site is improved with a horse racing track and associated buildings including a clubhouse/grandstand building, maintenance building, 33 horse barns, and various other miscellaneous buildings used for operating and maintaining the race track. The general Site location is shown on Figure 1, and a general layout of the Site is shown on Figure 2.

### 1.2 Purpose

The purpose of this Phase II LSI was to assess the Site for potential subsurface impacts associated with the environmental concerns identified in a preliminary review of environmental information pertaining to the Site and in a Phase I Environmental Site Assessment (ESA) conducted at the Site by VERTEX in February 2017, to provide data in areas that had not been previously investigated, and to provide preliminary information regarding soil and groundwater quality for use in estimating potential soil and groundwater management costs during redevelopment. The following suspect environmental concerns identified during a preliminary review of environmental information pertaining to the Site and in the Phase I ESA were assessed as part of this Phase II LSI:

- The reported presence of widespread anthropogenic historical fill at the Site containing metals, PAHs, and petroleum (previously investigated but with geographic coverage gaps);
- The spreading of material excavated from an on-Site dredge spoil “landfill” located within the infield of the track;

- Potential migration of impacts from the off-site bulk petroleum storage and distribution facility located west of the Site, based on the long-term operations, the number of previous release incidents (including a spill of approximately 1.6 million gallons of petroleum in 1978), and its proximity to the Site;
- Sales Creek that flows through the Site and receives runoff from surrounding urban areas that could potentially impact sediment and bank soils;
- An approximately 1,000 cubic yard soil pile that could potentially contain regulated concentrations of oil and hazardous materials (OHM); and
- Staining of the concrete floor within the transformer building.

The Phase II LSI scope of work included the following:

- Installation, sampling, and analysis of groundwater from 18 permanent well points to evaluate for the presence of groundwater impacts;
- Collection and analysis of groundwater samples from targeted areas for National Pollution Discharge Elimination System (NPDES) permitting parameters to assess the potential need to treat groundwater in the event groundwater is to be discharged to surface water during redevelopment activities;
- Collection and analysis of 62 soil samples from targeted areas to assess for the potential presence of Massachusetts Contingency Plan (MCP)-regulated concentrations of OHM and to provide preliminary information regarding the characterization of soil/fill for potential future off-site disposal/recycling.
  - Sampling and analysis of soil from areas where the former dredge spoil landfill was reportedly spread;
  - Sampling and analysis of soil samples from selected areas that have not been evaluated during previous environmental investigations;
  - Sampling and analysis of historical fill and the on-Site soil stockpile; and

- Sampling and analysis of native soils at ten locations for disposal/recycling characterization and to provide information regarding the vertical extent of OHM-impacted soil.
- Sampling and analysis of sediment from two locations within on-Site Sales Creek for off-site disposal/recycling characterization and to assess for potential impacts from OHM releases; and,
- Sampling and analysis of five surface soil samples and five concrete samples to evaluate for potential polychlorinated biphenyl (PCB) impacts.

## **2.0 FIELD ACTIVITIES**

### **2.1 Utility Locate/Geophysical Survey**

Prior to drilling at the Site, Massachusetts DigSafe was contacted for public utility location services at the Site. In addition, National Ground Penetrating Radar Service, Inc. (National GPR) of Bloomington, Minnesota was contracted to provide private utility location services for the Site.

On January 13 and January 17, 2017, VERTEX oversaw a ground-penetrating radar (GPR) survey conducted by National GPR, which utilized GPR and electromagnetic (EM) equipment to identify and delineate subsurface utilities at the Site and to clear proposed boring locations of underground utilities.

The purpose of the geophysical investigation was also to identify potential subsurface anomalies at the Site at the boring locations, such as underground storage tanks (USTs), associated piping, and/or former UST graves. The geophysical investigation did not identify subsurface anomalies indicative of USTs or associated piping or any other subsurface anomalies during the geophysical survey.

### **2.2 Advancement of Soil Borings and Installation of Groundwater Monitoring Wells**

Between February 6 and February 17, 2017, VERTEX oversaw the advancement of 37 soil borings by GeoLogic Earth Explorations, Inc. (GeoLogic) of Norfolk, Massachusetts. Out of the 37 soil borings, 16 borings were advanced by direct-push drilling techniques (i.e. Geoprobe) to 16 to 24 feet below ground surface (bgs). Another 18 borings were completed by hollow-stem auger (HSA) techniques to 12 to 20 feet bgs. The remaining three borings were completed for geotechnical assessment by drive-and-wash (DW) drilling techniques until refusal, which occurred between 55 and 94 feet bgs. The 18 borings advanced by HSA techniques were completed as permanent groundwater monitoring wells. The wells were constructed of bottom-plugged 10-foot lengths of 2-inch diameter machine-slotted polyvinyl chloride (PVC) screen followed by PVC riser to grade. Each well was finished with a clean, uniform-grade silica sand pack, bentonite seal, and native backfill. Monitoring wells were either finished at the ground surface with a flush-mounted 6-inch diameter road box or with a 3-foot tall steel standpipe, all with cement surface seals at grade. The

table below summarizes each boring location, depth, and monitoring well construction details for each boring. Soil boring logs and monitoring well completion reports are included in Appendix A.

SOIL BORING DETAIL SUMMARY				
BORING ID	DRILLING TECHNIQUE	DEPTH BGS (FT)	MONITORING WELL FINISH*	LOCATION
VES-101	HSA	12	Standpipe	Barn area
VES-102	HSA	12	Standpipe	Barn area
VES-103	HSA	15	Standpipe	Barn area
VES-104	HSA	15	Standpipe	Barn area
VES-105	GeoProbe	16	N/A	Barn area
VES-106	HSA	15	Standpipe	Northwest parking area
VES-106-Geo	DW	73.5	N/A	Northwest parking area
VES-107	GeoProbe	16	N/A	Northwest corner of race track
VES-108	HSA	20	Standpipe	Infield
VES-109	HSA	15	Roadbox	Infield
VES-110	HSA	15	Standpipe	Infield
VES-111	HSA	15	Standpipe	Infield
VES-112	DW	55	N/A	East service road
VES-113	GeoProbe	16	N/A	South of maintenance building
VES-114	GeoProbe	16	N/A	Infield
VES-115	GeoProbe	16	N/A	Infield
VES-116	GeoProbe	20	N/A	East service road
VES-117	GeoProbe	20	N/A	North of grandstand
VES-118	GeoProbe	24	N/A	Infield
VES-119	HSA	15	Roadbox	Infield
VES-120	HSA	12	Roadbox	Southwest parking area
VES-121	HSA	15	Roadbox	Southwest parking area
VES-122	GeoProbe	16	N/A	East of grandstand
VES-123	HSA	12	Roadbox	Infield
VES-124	GeoProbe	20	N/A	East service road
VES-125	HSA	15	Roadbox	East of administration building
VES-126	GeoProbe	24	N/A	East of grandstand
VES-127	GeoProbe	20	N/A	Infield
VES-128	DW	93.5	N/A	East service road
VES-129	HSA	12	Standpipe	Southwest parking area
VES-130	GeoProbe	20	N/A	Southwest corner of race track
VES-131	GeoProbe	20	N/A	South of race track
VES-132	HSA	15	Roadbox	Grass area abutting Route 1A
VES-133	HSA	12	Standpipe	Southwest parking area
VES-134	GeoProbe	24	N/A	Southwest parking area
VES-135	HSA	12	Roadbox	Grass area abutting Route 1A
VES-136	GeoProbe	16	N/A	Grass area abutting Route 1A

Note: N/A = not applicable, boring was not completed with a monitoring well.

Following monitoring well installation, the monitoring wells were developed using dedicated submersible Proactive Waterspout I pumps capable of pumping at a high discharge rate to remove silt and sediment from the well and sand pack. The wells were developed until the purge water appeared clear. No sheens were noted on the groundwater during well development.

### **2.3 Site Geology and Hydrogeology**

Based on visual classification of soils collected during this subsurface investigation, subsurface soil at the Site generally consisted of an urban fill, underlain by silty organic native soils. The observed thickness of the urban fill layer ranged from 2 to 16 feet. The fill generally consisted of fine to coarse sand with varying amounts of silt, gravel, and debris including brick, ceramic, glass, coal, ash, wood, and concrete. The table below provides a summary of fill thicknesses encountered at each boring location.

SUMMARY OF FILL THICKNESSES		
BORING ID	FILL INTERVAL (FT)	FILL THICKNESS (FT)
VES-101	0-6	6
VES-102	0-6	6
VES-103	1-10	9
VES-104	0-10	10
VES-105	0-12	12
VES-106	0-10	10
VES-107	0-5.5	5.5
VES-108	2-4	2
VES-109	5-15	10
VES-110	0.5-2	1.5
VES-111	1-5	4
VES-112	0-5	5
VES-113	0.5-12	11.5
VES-114	0-4	4
VES-115	0-4	4
VES-116	0-16	16
VES-117	0-8	8
VES-118	0-16+*	16-20
VES-119	1-12	11
VES-120	0.5-12	11.5
VES-121	0.5-10	9.5
VES-122	0.5-12	11.5

SUMMARY OF FILL THICKNESSES		
BORING ID	FILL INTERVAL (FT)	FILL THICKNESS (FT)
VES-123	0-5	5
VES-124	0.5-16	15.5
VES-125	0.5-12	11.5
VES-126	0.5-8	7.5
VES-127	0.5-16	15.5
VES-128	0-10	10
VES-129	0.5-11	10.5
VES-130	0.5-10	9.5
VES-131	0-16	16
VES-132	0-4	4
VES-133	0-5	5
VES-134	0-8	8
VES-135	0-11	11
VES-136	0-8	8

\*Note: Exact fill interval could not be determined for this boring due to an obstruction in the sampling tube preventing a recoverable sample.

Native soil underlying the fill generally consisted of organic silt with varying amounts of fine sand and shells. The environmental drilling program did not fully penetrate the native organic silt. In geotechnical borings VES-106-Geo, VES-112, and VES-128, fine sand with varying amounts of gravel were observed underlying the silty organic soil. Refusal of the drilling equipment was encountered in soil borings VES-106-Geo, VES-112, and VES-128 at 73.5 feet bgs, 55 feet bgs, and 93.5 feet bgs, respectively.

During this investigation, groundwater at the Site was encountered at depths between 2 and 10 feet bgs. Depth to groundwater information for each monitoring well location is provided on the boring logs in Appendix A. Sales Creek acts as a groundwater divide at the Site based on a groundwater elevation map created by GEI Consultants, Inc. (GEI) during a previous subsurface investigation in 2007. South of Sales Creek, groundwater appears to flow northeast toward the creek, and north of Sales Creek, groundwater appears to flow southwest toward the creek. A groundwater elevation map included in a Massachusetts Department of Environmental Protection (MassDEP) file for the southwest abutting off-site property located at 275 Lee Burbank Highway in Revere, indicated that groundwater flow at that location was northward toward Chelsea Creek. Actual local groundwater

flow direction can be influenced by factors such as underground structures, seasonal fluctuations, soil and bedrock geology, and production wells, none of which were considered during this study. A groundwater elevation survey to calculate groundwater flow direction was not performed as part of this investigation.

## **2.4 Soil Screening and Sampling**

In soil borings advanced by the direct-push drilling technique, soil samples were collected in continuous four-foot intervals beginning at grade from the soil borings using a tube-sampler fitted with disposable acetate sleeves. In soil borings advanced by the HSA and DW drilling technique, soil samples were collected using a 2-foot long split-spoon sampler every five feet beginning at grade. Soil samples were screened in the field for the presence of total ionizable volatile organic compounds (TVOCs) utilizing a photoionization detector (PID) equipped with a 10.6 electron volt (eV) lamp. The PID was calibrated with a 100 part per million by volume (ppmv) isobutylene gas standard to provide readings of TVOCs as isobutylene equivalents. PID readings are not considered actual TVOC concentrations in the soil samples but are useful indicators of relative TVOC concentrations between locations. Soil samples were selected for laboratory analysis based on the proposed scope of work, field observations, and field screening results. The physical characteristics of the soil samples and the PID field screening results are reported on the boring logs included in Appendix A.

The maximum TVOC concentration detected in fill material by the PID field screening was 6.7 ppmv detected in the soil sample collected from 0 to 2 feet bgs in soil boring VES-129. The maximum TVOC concentration detected in native materials underlying the fill was 609 ppmv in the soil sample collected from 10 to 12 feet bgs in soil boring VES-103. A sulfur or organic decay odor was identified in most samples collected from the underlying native material. Other evidence of OHM impacts was not identified in the soil borings.

In each boring VERTEX collected one soil sample from the fill material from the interval exhibiting the highest TVOC concentrations or, if all PID readings were equal, from an interval selected by VERTEX based on visual characteristics and/or from a representative interval above the water table. VERTEX also collected an additional sample of fill material at boring VES-130 to characterize some darker-colored fill material encountered at approximately 8 ft bgs which

appeared to exhibit a sheen. In addition, VERTEX collected samples of the native soils underlying the fill material in ten of the borings. Soil samples were collected in laboratory-supplied pre-cleaned containers, stored on ice, and transferred under chain-of custody to Alpha Analytical Laboratory, Inc. (Alpha) of Westborough, Massachusetts for the following laboratory analyses:

- Extractable petroleum hydrocarbons (EPH) and target polycyclic aromatic hydrocarbons (PAHs) by the MassDEP Method;
- Volatile petroleum hydrocarbons (VPH), carbon ranges only, by the MassDEP Method;
- Volatile organic compounds (VOC) gasoline constituents via United States Environmental Protection Agency (USEPA) Method 8260;
- Polychlorinated biphenyls (PCBs) by USEPA Method 8082 with Soxhlet extraction;
- Semi-VOCs (SVOCs) by USEPA Method 8270;
- pH by USEPA Method 9040 or 9045;
- Specific conductance by USEPA Method 9250;
- Ignitability by USEPA Method 1010 or 1030;
- Cyanide and sulfide reactivity by USEPA Method 7.3; and,
- Resource Conservation and Recovery Act Eight metals (RCRA 8 Metals) by USEPA Methods 6010 and 7471.

Additionally, VERTEX collected twelve near surface samples from twelve of the soil borings for the analysis of organochlorine pesticides by USEPA Method 8081A.

## **2.5 Groundwater Sampling**

Following development, the monitoring wells were allowed to equilibrate to surrounding aquifer conditions for at least three days prior to sampling. Between February 15 and February 17, 2017, the depth to groundwater within the eighteen monitoring wells was gauged using an oil/water interface probe, which is also capable of detecting non-aqueous phase liquid (NAPL) if present at a minimum thickness of 0.01-feet (approximately  $\frac{1}{8}$ th of an inch). NAPL was not detected in the monitoring wells during gauging.

Following gauging, groundwater samples were collected from the monitoring wells in general accordance with United States Environmental Protection Agency (USEPA) low-flow sampling techniques. Wells were purged using dedicated polyethylene tubing and a peristaltic pump. Drawdown of the groundwater in the well and water quality parameters, including temperature, pH, conductivity, dissolved oxygen (D.O.), oxygen reduction potential (ORP), and turbidity, were recorded every 3 to 5 minutes until readings were stable within allowable levels over three consecutive readings. Following stabilization, groundwater samples were collected in laboratory-supplied pre-cleaned containers, stored on ice, and transferred under chain-of-custody to Alpha for the following laboratory analyses:

- VOCs by USEPA Method 8260B;
- EPH carbon ranges and target PAHs by the MassDEP Method;
- VPH carbon ranges by the MassDEP Method; and,
- Dissolved RCRA 8 metals by Method 6010 and 7471.

Groundwater samples from monitoring wells VES-101(MW), VES-102(MW), VES-103(MW), VES-110(MW), VES-119(MW), VES-123(MW), VES-125(MW), and VES-135(MW) were also analyzed for the following National Pollutant Discharge Elimination System (NPDES) parameters:

- 1,4-dioxane by USEPA 8260C-SIM;
- PCBs by USEPA 608;
- SVOCs by 8270D PAH and SIM;
- Ethylene dibromide by USEPA 504.1;
- Total metals by USEPA Method series 6000 and 7000;
- Total cyanide by USEPA Method 9010C;
- Hexavalent chromium by USEPA Method 7196A;
- Total petroleum hydrocarbons (TPH) by USEPA Method 1664;
- Total phenol by USEPA Method 9065;
- Total residual chlorine by standard method 4500;
- Total suspended solids by standard method 2540D; and,
- Chloride by USEPA Method 9251.

## **2.6 Sediment Sampling**

To evaluate sediment in Sales Creek, VERTEX collected two composite sediment samples from the creek on February 6, 2017. One sediment sample was collected from an upstream location, approximately where Sales Creek enters the Site. The second was collected downstream near where Sales Creek exits the Site. Each sediment sample was comprised of individual grab samples collected with a hand auger from depths of 0.3 feet to 0.8 feet below the surface of the sediment within an approximately 2.5 foot by 2.5 foot area, then combined in a stainless steel bowl prior (with the exception of samples to be analyzed for VOCs, which were sampled directly from the hand auger) to being placed in laboratory-supplied pre-cleaned containers, stored on ice, and transferred under chain-of-custody to Alpha for the following laboratory analyses:

- EPH and target PAHs by the MassDEP Method;
- VPH, carbon ranges only, by the MassDEP Method;
- VOC gasoline constituents via USEPA Method 8260;
- PCBs by USEPA Method 8082 with Soxhlet extraction;
- SVOCs by USEPA Method 8270;
- pH by USEPA Method 9040 or 9045;
- Specific conductance by USEPA Method 9250;
- Ignitability by USEPA Method 1010 or 1030;
- Cyanide and sulfide reactivity by USEPA Method 7.3; and,
- RCRA 8 Metals by USEPA Methods 6010 and 7471.

## **2.7 Concrete and Surface Soil Sampling**

On February 6, 2017, to evaluate for the potential presence of PCBs, VERTEX collected five concrete samples in areas of apparent floor staining in the interior of the electrical transformer building and maintenance building. Three concrete samples were collected in the transformer building and two concrete samples were collected in the maintenance building. Samples of the concrete from depths of 0 to 0.5 inches were collected with a hammer drill in accordance with the

May 2011 USEPA Standard Operation Procedure (SOP) for sampling porous surfaces for PCBs. The hammer drill bit was decontaminated with hexane between sample locations.

On February 8, 2017, to evaluate the potential for PCBs in shallow soil adjacent to the electrical transformer building, VERTEX collected soil samples from depths of 0 to 6 inches below the bottom of the asphalt using a hammer drill. The hammer drill bit was decontaminated with hexane between sample locations.

The concrete and surface soil samples were collected and placed in laboratory-supplied containers and submitted to Alpha for PCB analysis by USEPA Method 8082 with Soxhlet extractions.

## **2.8 Stockpile Sampling**

During Site reconnaissance, VERTEX observed a soil stockpile located west of the maintenance building. According to representatives of the Site owner, the stockpile was generated from landscaping activities at the Site and consisted of turf, soil, and racetrack sand from the Site surface, and landscaping debris (such as brush, cuttings, clippings). On February 6, 2017, to evaluate the stockpiled soil for waste disposal characterization purposes, VERTEX collected a three discrete grab soil samples from the stockpile. The samples were collected from depths approximately 6 to 12 inches below the surface of the stockpile using a hand auger. The hand auger was decontaminated with Liqui-Nox® cleaner and distilled water between each sample. Collected samples were placed in laboratory-supplied containers and submitted to Alpha for the following laboratory analyses:

- EPH and target PAHs by the MassDEP Method;
- VPH, carbon ranges only, by the MassDEP Method;
- VOC gasoline constituents via USEPA Method 8260;
- PCBs by USEPA Method 8082 with Soxhlet extraction;
- SVOCs by USEPA Method 8270;
- pH by USEPA Method 9040 or 9045;
- Specific conductance by USEPA Method 9250;

- Ignitability by USEPA Method 1010 or 1030;
- Cyanide and sulfide reactivity by USEPA Method 7.3;
- RCRA 8 Metals by USEPA Methods 6010 and 7471;
- Toxicity Characteristic Leaching Procedure (TCLP) lead by USEPA Method 1311 and 6010; and
- Organochlorine pesticides by USEPA Method 8081A.

## **3.0 LABORATORY ANALYTICAL RESULTS**

### **3.1 Applicable Regulatory Standards**

Soil analytical results were compared to the MassDEP MCP RCS-1 reportable concentrations because portions of the Site are located within 500 feet of a residential dwellings and future Site development may include residences. Groundwater analytical results were compared to MassDEP MCP RCGW-2 reportable concentrations because the Site is not located within a current or potential drinking water resource area. VERTEX also compared results to concentrations previously detected at the Site as addressed in the 1998 RAO, as well as samples collected during the GEI evaluation in 2007, to determine if current results are consistent with background concentrations.

Groundwater analytical results for samples analyzed for NPDES permitting criteria were compared to the Technology-Based Effluent Limitations (TBELs) contained in the NPDES DRAFT Remediation General Permit (RGP) for Remediation Activity Discharges in Massachusetts (MAG910000), dated August 18, 2016. VERTEX assumed that comparison to Water-Quality Based Effluent Limitations (WQBELs) will not be needed to obtain a NPDES RGP.

Massachusetts does not have reportable concentrations for OHM in sediment. Sediment sample results were compared to July 2005 MassDEP Stage I Freshwater Screening Criteria. The Stage I Criteria are provided for comparison purposes only and as useful indicator of potential OHM impacts. The Stage I Criteria only apply to sediments in a regulatory context when sediments are impacted with OHM from MCP-regulated releases and when a pathway for the release to have impacted the sediment has been identified.

### **3.2 Soil Analytical Results**

Soil sample analytical results are summarized on Table 1. Laboratory data sheets and chain of custody documentation is provided in Appendix B.

#### Urban Fill Analytical Results

Based on the laboratory analytical results of the 37 soil samples collected from the layer of fill at the Site, PAHs were identified in nine soil samples at concentrations exceeding MCP RCS-1

reportable concentrations. The PAH concentrations are consistent with the PAH concentrations previously detected in the fill material at the Site. A 1998 Class B-1 Response Action Outcome Statement (RAO) submitted for MassDEP Release Tracking Number (RTN) 3-14857, for the Site as a whole, concluded the PAHs in fill material were a background condition attributable to the urban fill deposited at the Site prior to 1935. The data collected by VERTEX supports the conclusion that the PAHs are attributable to the urban fill and are a background condition. Therefore, the detection of the PAHs in soil is not considered a new reportable condition in accordance with the exemption from MassDEP notification requirements at 310 CMR 40.0317(17).

Total arsenic, chromium, and lead were each detected exceeding applicable MCP RCS-1 reportable concentrations in soil samples collected from fill materials at the Site. Total arsenic was detected exceeding the MCP RCS-1 reportable concentration of 20 mg/kg in six soil samples, with a maximum detected concentration of 83 mg/kg in sample VES-107 (2-4). Of the six samples exceeding MCP RCS-1 reportable concentrations, the arsenic result from VES-107 (2-4) is significantly higher than the maximum concentration of 37 mg/kg arsenic previously detected in all prior investigations (based on 67 soil samples collected at the Site), and is significantly higher than the 15 mg/kg maximum concentration considered in the 1998 RAO. As discussed further in the Conclusions and Recommendations sections herein, VERTEX recommends additional assessment to determine if the result is associated with coal ash, and if arsenic is not associated with coal ash, it will need to be reported to MassDEP.

Total chromium was detected exceeding the MCP RCS-1 reportable concentration of 100 mg/kg in two soil samples with a maximum detected concentration of 140 mg/kg in sample VES-101 (5-6). The maximum detected concentration of total chromium is higher than the previously detected maximum concentrations, which did not exceed MCP RCS-1 standards. Total chromium is considered the sum of all chromium valence states; however, the RCS-1 reportable concentration for total chromium is based on the reportable concentration for hexavalent chromium, a relatively mobile and toxic form of chromium. Most chromium in the environment is in the form of trivalent chromium, which is considerably less mobile and less toxic. A RCS-1 reportable concentration of 1,000 mg/kg applies if the detected chromium can be shown to not be hexavalent chromium. As

further discussed in the Conclusions and Recommendations sections, VERTEX recommends further analysis of soil in the area VES-101 (5-6) for hexavalent chromium.

Total lead was detected exceeding MCP RCS-1 reportable concentration of 200 mg/kg in 20 out of the 36 soil samples collected from fill materials throughout the Site. Total lead concentrations ranged from 2.53 to 3,700 mg/kg. The sample results did not exceed the MCP upper concentration limit. The distribution of lead concentrations in the urban fill was heterogeneous and large contiguous areas of lower concentrations were not identified. The detected total lead concentrations were consistent with previously detected lead concentrations and the maximum detected concentration did not exceed the highest previously detected concentration. As a result, further assessment and reporting is not recommended, as discussed further below.

Total PCBs were detected in soil sample VES-128 (1-2) at a concentration of 23.1 mg/kg (Aroclor 1254 at 12.3 mg/kg and Aroclor 1260 at 10.8 mg/kg), exceeding the MCP RCS-1 reportable concentration of 1 mg/kg. VERTEX's conclusions and recommendations for this result is discussed below.

Other constituents of concern were not detected in soil samples exceeding applicable MCP reportable concentrations.

OHM concentrations in the second fill sample collected from boring VES-130(8-10) to assess the presence of darker-colored material and an apparent sheen did not exceed MCP RCS-1 reportable concentrations.

#### Native Soil Analytical Results

Based on the analytical results of nine of the ten soil samples collected from native materials underlying the urban fill at the Site, constituents of concern were not detected at concentrations exceeding applicable reportable concentrations. Soil sample VES-118 (22-24) was collected from the depth of native materials; however, at that location at least 16 feet of overlying fill materials was encountered. A piece of wood in the sample tube prevented recovery of a sample from the 16 to 20-foot interval and the sample collected for analysis from the 22-24 foot interval appears to have entrained some of the overlying fill which was pushed into the underlying native soil by the obstructed sampling tube. Therefore, detected concentrations of PAHs (benzo(a)pyrene and

dibenzo(a,h)anthracene), total arsenic, and total lead exceeding MCP RCS-1 reportable concentrations in the VES-118 (22-24) sample are not considered representative of the native soil at that location.

### **3.3 Stockpile Analytical Results**

Stockpile soil sample analytical results are summarized on Table 1. Laboratory data sheets and chain of custody documentation is provided in Appendix B.

Based on laboratory analytical results, the PAH benzo(a)pyrene was identified in stockpile sample VES-EAST-1 at a concentration of 2.4 mg/kg, exceeding the MCP RCS-1 reportable concentration of 2.0 mg/kg. The concentrations of other analytical parameters did not exceed MCP RCS-1 reportable concentrations. The detected concentration of benzo(a)pyrene is consistent with the 1998 RAO determination that PAHs in soil were a background condition and is therefore not considered a new condition for which notification is required to be provided to the MassDEP.

### **3.4 Concrete and Surface Soil Analytical Results**

Concrete and surface soil sample analytical results are summarized on Table 2. Laboratory data sheets and chain of custody documentation is provided in Appendix B.

Based on the laboratory analytical results, PCB concentrations were not detected exceeding the MCP RCS-1 reportable concentration of 1 mg/kg in surface soil samples collected at the Site and were not detected exceeding 1 mg/kg in the concrete surface samples collected from the transformer building and maintenance building.

### **3.5 Sediment Analytical Results**

Sediment sample analytical results are summarized on Table 3. Laboratory data sheets and chain of custody documentation is provided in Appendix B.

Based on the laboratory analytical results, PAHs and total lead were detected in the upstream sediment sample VES-S1 (collected from where Sales Creek enters the Site) at concentrations exceeding MassDEP Stage I Freshwater Sediment Screening Criteria. Total lead and total mercury were detected in the downstream sediment sample VES-S2 (collected from where Sales Creek

exits the Site) at concentrations exceeding MassDEP Stage I Freshwater Sediment Screening Criteria. The detected PAH and metal concentrations in sediment are not considered reportable to the MassDEP because no evidence has been identified to attribute the detections to a MCP-regulated release.

### **3.6 Groundwater Analytical Results**

Groundwater sample analytical results are summarized on Table 4 and Table 5. Laboratory data sheets and chain of custody documentation is provided in Appendix B.

Based on the laboratory analytical results, analyte concentrations were not detected exceeding applicable MCP RCGW-2 reportable concentrations.

Analytical results for groundwater samples analyzed for NPDES RGP permitting criteria indicate that total iron and total suspended solid concentrations will likely require treatment to achieve TBEL criteria prior to discharge to surface water.

## **4.0 CONCLUSIONS AND RECOMMENDATIONS**

Between February 6 and February 17, 2017, VERTEX performed Phase II LSI activities at the Site that included a geophysical survey using GPR, the advancement of 37 soil borings, with 18 completed as permanent monitoring wells, the collection and analysis of soil and groundwater samples from the advanced borings and installed wells, the collection and analysis of sediment samples from the on-Site Sales Creek, the collection and analysis of concrete and surface soil from the maintenance and transformer building, and the collection and analysis of soil samples from an on-Site stockpile.

### **Conclusions and Recommendations**

Based on the findings of this Phase II LSI, VERTEX concludes and recommends the following:

#### Urban Fill Material Sampling Results and Management:

- A layer of urban fill exists at the Site in thicknesses varying from 2 to 16 feet deep. In general, the layer of urban fill identified by the Phase II LSI was thickest in the racetrack infield area south of Sales Creek to the eastern site boundary and was generally thinnest in the southwest portion of the Site and north of Sales Creek within the infield. Underlying native material consists of silty organic materials and marine sediments. Generally, sampling results from the urban fill material were consistent with prior sampling results and background concentrations, except as discussed below.
  - PCBs. PCBs were detected in soil sample VES-128 (1-2) at a concentration of 23.1 mg/kg. This concentration exceeds the MCP RCS-1 reportable concentration of 1 mg/kg, but not the 50 mg/kg threshold for regulation under the USEPA Toxic Substances Control Act (TSCA). The source and extent of the PCB impacted soil is unknown as PCB containing equipment was not observed in the area of VES-128 (1-2). The concentration at VES-128 (1-2) is not attributable to background conditions; therefore, the detected PCB concentration is a 120-day reportable condition, requiring the current owner or operator of the Site to report it to the MassDEP within 120-days of obtaining knowledge of the release, or a new owner or operator to report to MassDEP

within 120-days of becoming the Site owner or operator. The release should be addressed in accordance with the MCP.

- Arsenic. Total arsenic was detected at concentrations exceeding applicable MCP RCS-1 reportable concentrations in six soil samples. These results were consistent with previous subsurface investigations, except for soil sample VES-107 (2-4), which had a concentration of 83 mg/kg arsenic. Previous subsurface investigations detected total arsenic in soil between 2 mg/kg and 37 mg/kg, and attributed the source to coal ash. While coal ash was not visually identified in the VES-107 (2-4) sample, the absence of visible ash does not indicate a lack of ash within the sample. However, because VES-107 was collected near the ‘Test-Barn,’ there is potential source of arsenic due to horse operations. As a result, VERTEX concludes that the detected concentration of total arsenic in soil sample VES-107 (2-4) constitutes a MassDEP 120-day reportable condition, unless it can be attributed to coal ash. To determine whether the arsenic is a 120-day reportable condition, VERTEX recommends the collection of additional samples in the area of VES-107 and the analysis of the samples for arsenic and coal ash by scanning electron microscopy and energy dispersive x-ray.
- Chromium. Total chromium was detected in two soil samples exceeding the MCP RCS-1 reportable concentration of 100 mg/kg. Total chromium is the sum of all chromium valence states; however, the RCS-1 reportable concentration for total chromium is based on the reportable concentration for hexavalent chromium, a relatively mobile and toxic form of chromium. Most chromium in the environment is in the form of trivalent chromium, which is considerably less mobile and less toxic. A RCS-1 reportable concentration of 1,000 mg/kg applies if the detected chromium can be shown to not be in the hexavalent state. Soil representative of the two soil samples with elevated total chromium should be analyzed for hexavalent chromium. In the likely event that the chromium is shown to be the less toxic trivalent chromium, an RCS-1 reportable concentration of 1,000 mg/kg will apply, and reporting to MassDEP will not be required.

- Soil management and disposal. With respect to soil disposal, based on the laboratory analytical results, some locations are suitable for disposal at Massachusetts unlined landfills, some locations are suitable for disposal at Massachusetts lined landfills, and some locations will need to be disposed at out-of-state landfills.

Soil disposal facilities will require Toxicity Characteristic Leaching Procedure (TCLP) analysis of soil containing lead or chromium concentrations exceeding 100 mg/kg to determine if concentrations of leachable lead or chromium exceed Resource Conservation and Recovery Act regulatory thresholds for classification of characteristic hazardous wastes. Several samples had concentrations high enough to indicate the potential for the soils to be classified as characteristically hazardous when generated for disposal. Total lead concentrations exceeded 100 mg/kg in 25 of the 48 samples and exceeded 1,000 mg/kg in 9 of the samples. Total chromium concentrations exceeded 100 mg/kg in two of the urban fill samples that also contained lead concentrations exceeding 100 mg/kg. Additionally, historical analytical data collected at the Site included the analysis of 42 soil samples for total and TCLP lead. TCLP lead concentrations in 9 of the 42 samples exceeded RCRA thresholds for classification as hazardous waste. VERTEX evaluated the historical data to assess whether a correlation existed between total lead and TCLP lead concentrations. A clear correlation was not observed in the historical data. Soil classified as a characteristic hazardous waste may be disposed at an out-of-state hazardous waste landfill or may be stabilized on-Site within the area of similarly impacted soils to render the soil non-hazardous prior to excavation and waste generation. Such stabilized non-hazardous soils may be disposed of off-site at an out-of-state landfill. Based on the range of total lead concentrations in the urban fill detected by VERTEX and on the historical total lead and TCLP data, VERTEX very roughly estimates that one-third of the urban fill at the Site may fail TCLP analysis and be classified as a characteristic hazardous waste unless properly stabilized and rendered non-hazardous on-Site in accordance with MassDEP required procedures.

VERTEX recommends the completion and implementation of a typical soil and groundwater Materials Management Plan (MMP) during the redevelopment and construction activities to govern the proper management of the identified impacted soil as

well as potential residual subsurface impacts not previously accessible, assessed, or characterized that may be encountered. With respect to the potentially MCP-reportable releases of arsenic, chromium, and PCBs in soil, preparation of a Release Abatement Measure (RAM) may be required if a risk characterization determines that a condition of No Significant Risk cannot be demonstrated or if those impacted soils must be excavated during redevelopment.

Other Site Media:

- Dredged spoils. In the borings intended to assess relocated dredged spoils (VES-109 (0-2) and VES-118 (2-4)), VERTEX did not observe visually distinguishable characteristics that would indicate that the materials were dredged spoils. Concentrations OHM detected in soil samples VES-109 (0-2) and VES-118 (2-4) either did not exceed MCP RCS-1 reportable concentrations or were consistent with the type and concentration of OHM in urban fill which was deemed to be a background condition in the 1998 RAO. Therefore, the analytical results for soil samples VES-109 (0-2) and VES-118 (2-4) are not considered reportable to the MassDEP in accordance with the MCP.
- Soil gas. With respect to evidence of the presence of anaerobic gases associated with organic material, VERTEX identified TVOCs in screened soil samples collected from the native material underlying the identified fill material at the Site at concentrations up to 609 ppmv (VES-103). A sulfur or organic decay odor was identified in most samples collected from the underlying native material, and all the samples where elevated TVOC concentrations were detected during screening activities. Based on olfactory and visual observations, the elevated concentrations of TVOCs detected during PID soil screenings are attributed to decaying organic matter located within the native soil. Emissions from decaying organic matter may include but are not limited to, methane, hydrogen sulfide, carbon disulfide, acetone, and methyl ethyl ketone. Additionally, during a 2001 subsurface investigation conducted on an adjoining property, methane was detected within groundwater at concentrations ranging from 0.59% to 11%. In the opinion of VERTEX, the elevated TVOCs PID readings are not considered indicative of a regulated release of

OHM. Recommendations regarding the potential presence of these gases are provided below.

Based on the detection of methane and hydrogen sulfide concentrations exceeding the Lower Explosive Limit (LEL) at an adjoining property, and the elevated TVOC concentrations and odors detected during soil screening activities at the Site, the installation of a chemically resistant vapor barrier and/or vapor mitigation system to protect indoor air may be recommended in future buildings constructed in areas of elevated volatile impacts and where occupied ground floors or basement areas may be in contact with the Site soils. Additional evaluation of subsurface conditions and/or proposed building construction plans is recommended to determine what, if any, vapor mitigation protection is needed. Such evaluation should include designing for the potential methane accumulation in subsurface structures such as stormwater infiltration systems.

- Native soils. Evidence of OHM impacts to native soils exceeding MCP RCS-1 reportable concentrations were not identified. Native soils in the areas tested are suitable for off-Site disposal as non-MCP regulated material.
- Groundwater. Groundwater analytical results did exceed applicable MCP RCGW-2 reportable concentrations. As a result, no evidence of on-site releases impacting groundwater, or releases originating from the western adjoining bulk petroleum storage and distribution facility was identified.

Groundwater dewatering effluent to be discharged under a NPDES RGP to Sales Creek will likely require treatment to comply with total suspended solid and total iron effluent limitations. On-Site recharge to groundwater of dewatering effluent may also be possible without treatment. Such recharge would be most successful in areas where the granular urban fill materials are thickest and the depth to groundwater is relatively deep. On-site recharge to native materials would likely be restricted by their apparent low permeability and in areas of shallow groundwater on-Site recharge would be limited by the potential for surface breakout.

- Sediment. Sales Creek sediment is impacted with concentrations of OHM similar to concentrations detected in urban fill at the site. The detected OHM concentrations in the sediment are not considered reportable to the MassDEP because they are not attributable to a MCP regulated release. Impacts to the Sales Creek sediments may also originate off-site upstream. Based on the sediment sample analytical results the sediment at the two locations sampled is suitable for disposal at a Massachusetts unlined landfill after dewatering to remove free liquids.
- Potential PCBs in soil or concrete. PCBs were not detected exceeding applicable MCP RCS-1 reportable concentrations in surface soil samples collected adjacent to the electrical transformer building. PCB concentrations in surface samples of the concrete floor within the transformer building did not exceed 1 mg/kg. Therefore, evidence of a regulated release of PCBs in or from the transformer building was not identified. PCB concentrations in surface samples of the concrete floor within the maintenance building did not exceed 1 mg/kg. Therefore, evidence of a regulated release of PCBs in the maintenance building was not identified.
- Soil stockpile. Based on the laboratory analytical results benzo(a)pyrene was identified in a sample collected from the on-Site stockpile at a concentration of 2.4 mg/kg, exceeding the MCP RCS-1 reportable concentration of 2.0 mg/kg. The detected concentration is consistent with PAH concentrations historically identified throughout the Site. Other constituents of concern, were not detected exceeding MCP RCS-1 reportable concentrations. The concentration of benzo(a)pyrene is not considered a reportable release because it is consistent with the historical concentrations detected in Site soils which the 1998 RAO concluded were a background condition. The stockpiled soil is suitable for off-Site disposal at a location having equal or higher concentrations of benzo(a)pyrene.

Any additional soil and/or groundwater impacts identified during the proposed redeveloped and construction activities should be properly assessed and characterized in accordance with applicable local, state, and/or Federal regulations for potential off-site disposal requirements.

## **5.0     QUALIFICATIONS**

### **5.1    Limitations and Exceptions**

Our professional services have been performed, our findings obtained, and our recommendations prepared in accordance with customary principles and practices in the fields of environmental science and engineering. This warranty is in lieu of all other warranties either expressed or implied. VERTEX is not responsible for the independent conclusions, opinions or recommendations made by others based on the field exploration and laboratory test data presented in this report.

It must be recognized that environmental investigations are inherently limited in the sense that conclusions are drawn and recommendations developed from information obtained from limited research and Site investigation. All Site subsurface conditions were not field investigated as part of this study and may differ from the conditions implied by the limited subsurface investigation. Additionally, the passage of time may result in a change in the environmental characteristics at this Site and surrounding properties. This report does not warrant against future operations or conditions, nor does this report warrant against operations or conditions present of a type or at a location not investigated.

### **5.2    Special Terms and Conditions**

Our work was conducted in general conformance with VERTEX proposal P.2585.16, dated January 11, 2017, and the terms and conditions established within. This Phase II LSI report explains the procedures of the Phase II LSI and summarizes the sampling results.

### **5.3    User Reliance**

This report is for the exclusive use of Locke Lord LLP, The McClellan Highway Development Company, LLC, McClellan Highway Holdings, LLC, Cathexis – SD, LLC, Cathexis RE Holdings, LP, The Three Box Development Company, LLC, HYM Three Box Holdings, LLC, and The HYM Investment Group, LLC and their respective subsidiaries, affiliated and parent companies, and any lenders who assist these entities in the acquisition, development, or operation of the Site. No other party shall have the right to rely on any service provided by VERTEX without prior written consent. Use of this report by any other party shall be at such party's sole risk.

## **6.0 REFERENCES**

### **Interviews:**

Mr. Chip Tuttle – Suffolk Downs Racecourse

Mr. Ernie Sampson – Suffolk Downs Racecourse

Mr. Jim Druse – Suffolk Downs Racecourse

### **Documents Reviewed:**

Rizzo Associates, Inc. *Suffolk Downs Site Evaluation Report: Volume II*. December 31, 1996.

Rizzo Associates, Inc. *Response Action Outcome Report*. February 12, 1998.

Rizzo Associates, Inc. *Response Action Outcome Statement*. February 12, 1998.

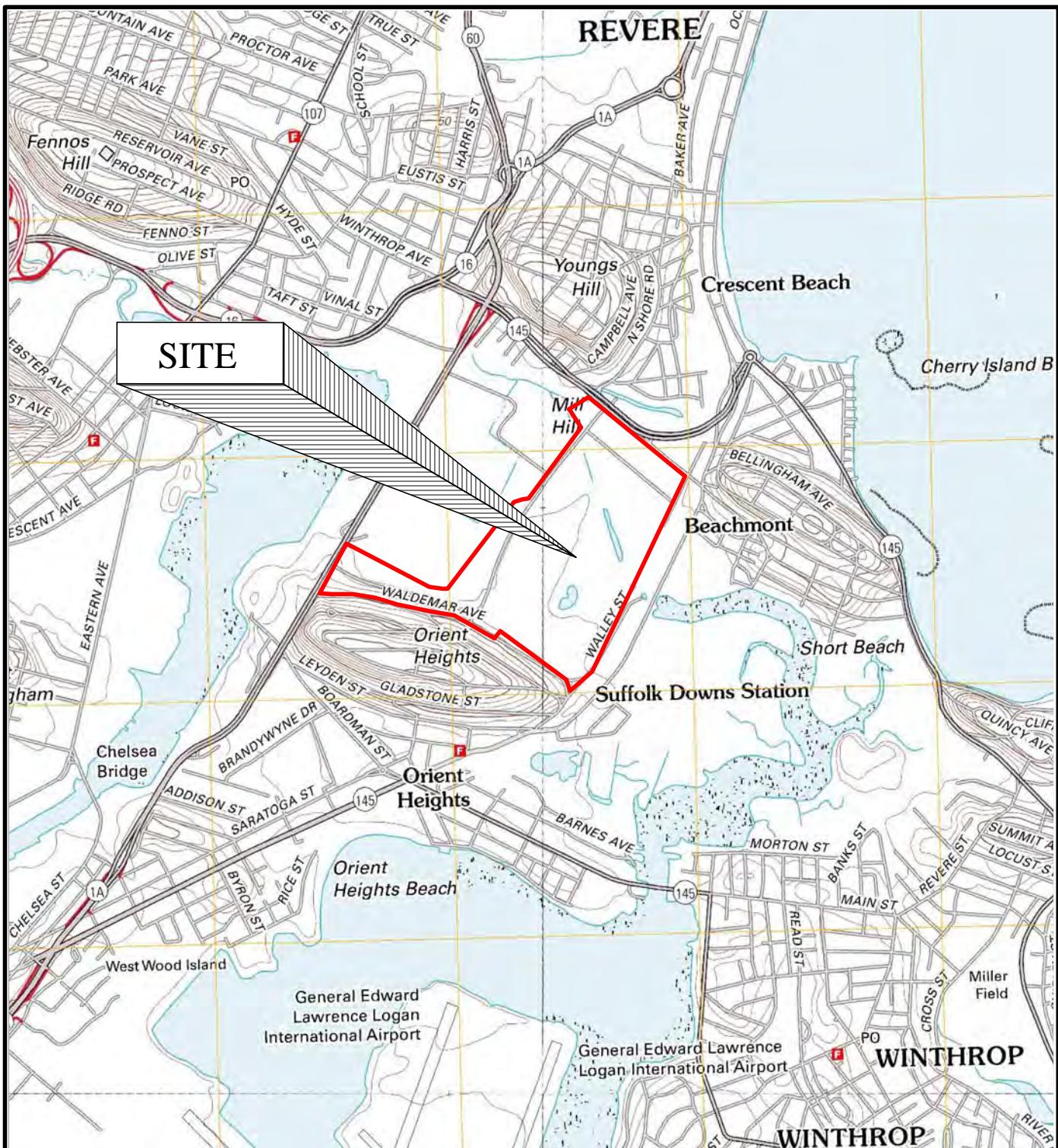
Rizzo Associates, Inc. *Method 3 Risk Characterization, Suffolk Downs, RTN 3-14857*. February 12, 1998.

Rizzo Associates, Inc. *Suffolk Downs Racecourse Non-MCP Risk Characterization*. May 26, 1998.

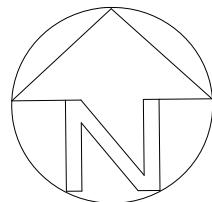
The Vertex Companies, Inc. *Phase I Environmental Site Assessment – Suffolk Downs Racecourse*. March 2, 2017.

## **FIGURES**

**VERTEX®**



USGS Topographic Map, 2012  
Lynn, MA Quadrangle  
Contour Interval: 10 Feet



**SITE LOCUS MAP**

Suffolk Downs Racecourse  
525 William F. McCollan Highway  
Boston, Massachusetts

SCALE: 1:24,000

February, 2017

VERTEX Proj. No. 43068

**FIGURE NO. 1**

**NOTES:**

PLAN BASED OF ALTA SURVEY PREPARED BY NITSCH ENGINEERING OF BOSTON,  
MASSACHUSETTS COMPANY DATED JANUARY 2017.

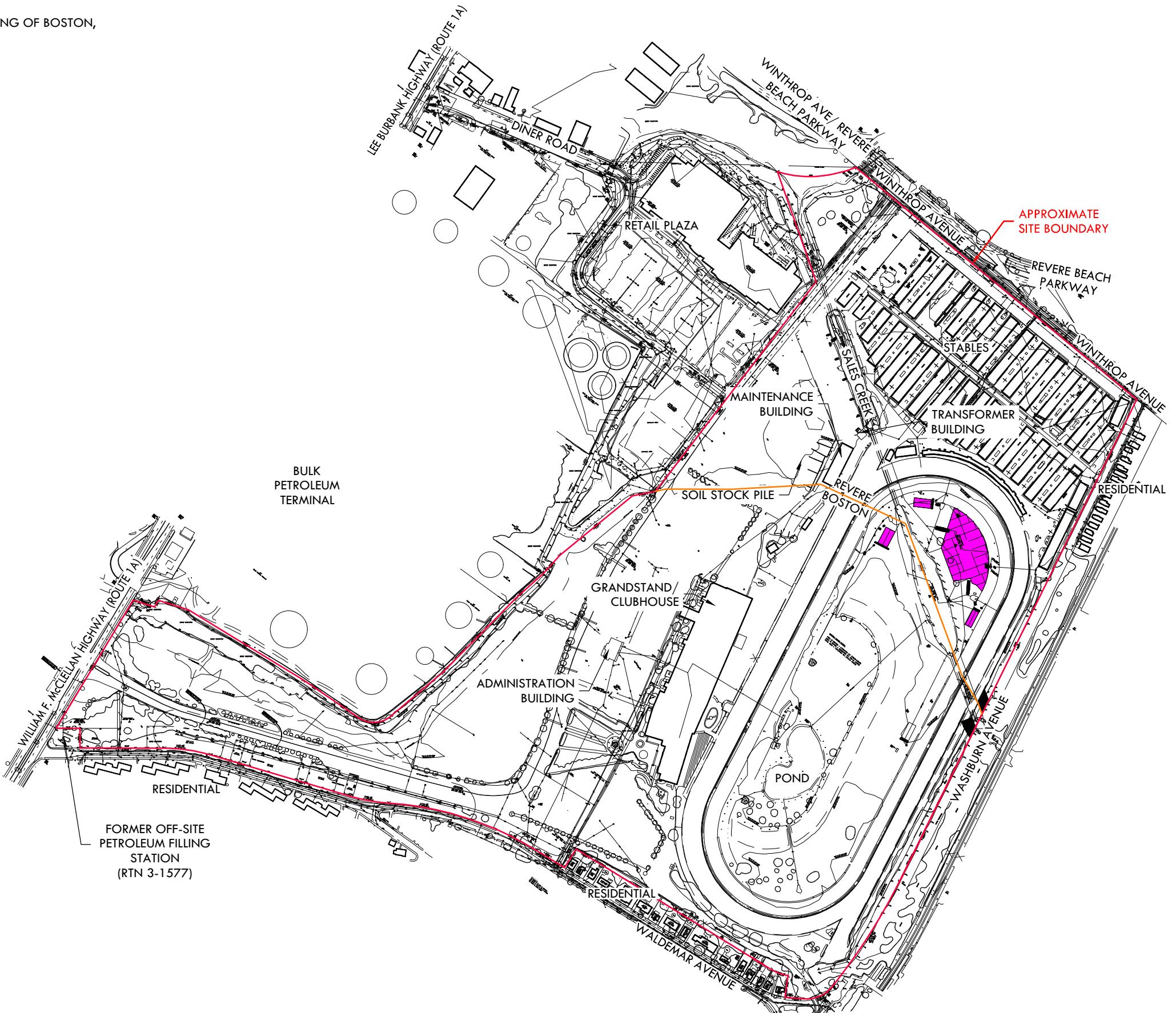
**LEGEND:**

- APPROXIMATE SITE BOUNDARY
- MUNICIPAL BOUNDARY
- PROCESS WATER/ STORM WATER FEATURE



0 500 1000 1500

SCALE: 1" = 500'-0"  
(WHEN PRINTED AT 11x17)



SITE SCHEMATIC

SUFFOLK DOWNS  
525 WILLIAM F MCCLELLAN HIGHWAY  
EAST BOSTON AND REVERE, MASSACHUSETTS

VIRTEX

REVISIONS

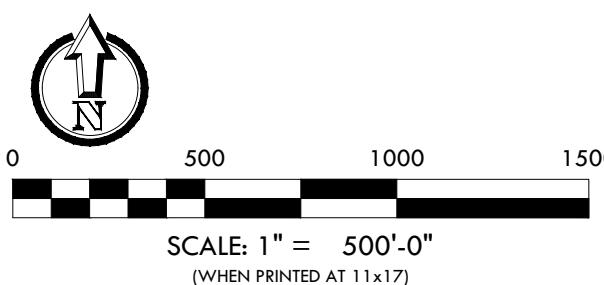
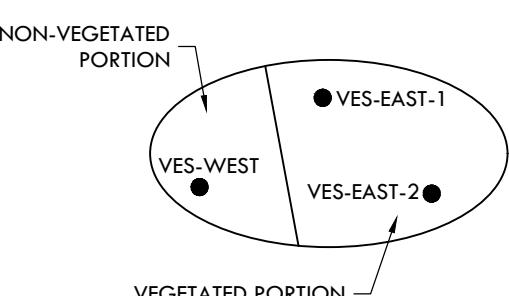
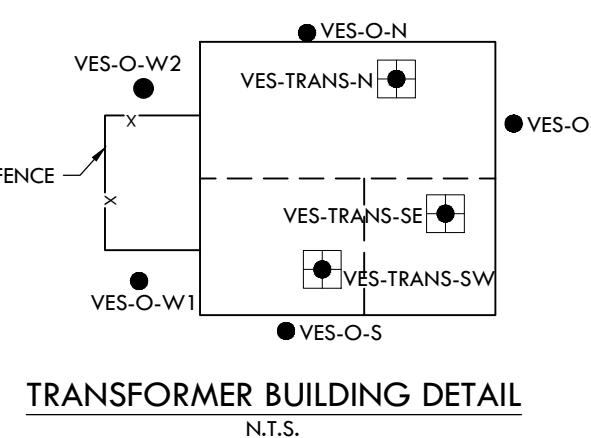
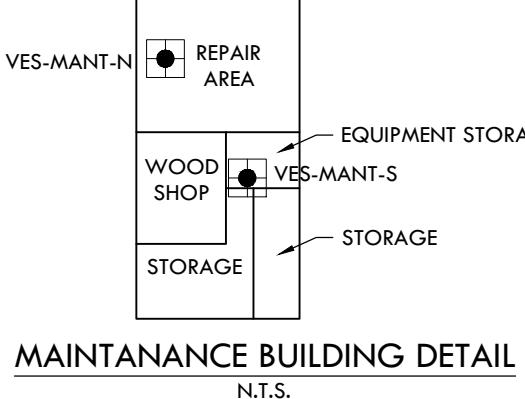
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			2

## SAMPLE LOCATIONS

SUFFOLK DOWNS  
525 WILLIAM F MCCLELLAN HIGHWAY  
EAST BOSTON AND REVERE, MASSACHUSETTS

## LEGEND:

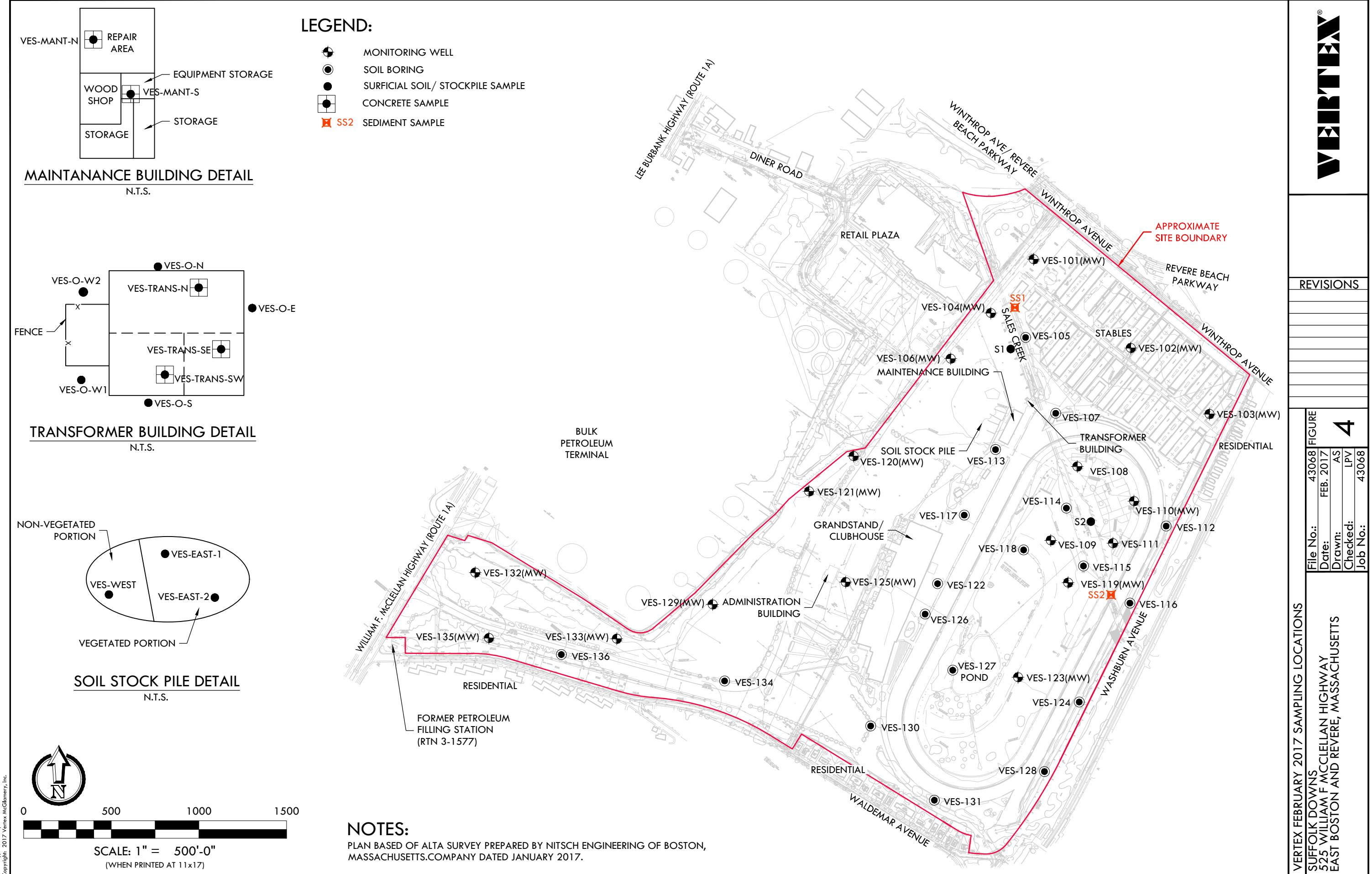
- REPAIR AREA
- EQUIPMENT STORAGE
- WOOD SHOP
- VES-MANT-S
- STORAGE
- VES-MANT-N
- MONITORING WELL
- SOIL BORING
- SURFICIAL SOIL/ STOCKPILE SAMPLE
- GEI BORINGS PERFORMED DECEMBER 2006
- CONCRETE SAMPLE
- B-402(MW) MONITORING WELL INSTALLED BY GEI (2006)
- B-401 BORING INSTALLED BY GEI (2006)  
300 SERIES - GEOTECHNICAL  
400 SERIES - ENVIRONMENTAL
- RIZ-1 MONITORING WELL INSTALLED BY RIZZO (1996)
- RB-1 SOIL BORING INSTALLED BY RIZZO (1996)
- MW-201 MONITORING WELL INSTALLED BY GEI (1991)
- MW-1 MONITORING WELL INSTALLED BY GEI (1986)
- WE(OW)-4 WELL INSTALLED BY OTHERS
- SS2 SEDIMENT SAMPLE
- GP14-2 GEOPROBE INSTALLED BY HALEY & ALDRICH, INC (2014)
- TP14-1 TEST PITS INSTALLED BY HALEY & ALDRICH, INC (2014)
- B12-109 TEST BORING INSTALLED BY HALEY & ALDRICH, INC (2012)



## NOTES:

PLAN BASED OF ALTA SURVEY PREPARED BY NITSCH ENGINEERING OF BOSTON,  
MASSACHUSETTS COMPANY DATED JANUARY 2017.





## **TABLES**

**VERTEX®**

TABLE 1 - SUMMARY OF SOIL ANALYTICAL RESULTS

SUFFOLK DOWNS

525 WILLIAM F. MCCLELLAN HIGHWAY

BOSTON, MASSACHUSETTS 02128

VERTEX PROJECT NO. 43068

LOCATION	MCP Upper Concentration Limits (UCLs)	MCP Reportable Concentration RCS-1	MA Aggregate Recycling Criteria	MA Lined Landfill Criteria (LLF)	MA Unlined Landfill Criteria (ULF)	MA Similar Soils RCS-1 (Similar Soils)	Units	VES-101 (5-6)	VES-101 (10-12)	VES-102 (0-2)	VES-102 (10-12)	VES-103 (1-2)	VES-104 (2-4)	VES-105 (4-6)	VES-106 (5-7)	VES-106 (10-12)	VES-107 (0-2)	VES-107 (2-4)	VES-108 (6-8)	VES-108 (16-18)	
SAMPLING DATE								2/7/2017	2/7/2017	2/7/2017	2/7/2017	2/10/2017	2/14/2017	2/16/2017	2/14/2017	2/15/2017	2/16/2017	2/16/2017	2/10/2017	2/10/2017	
LAB SAMPLE ID								L1703861-04	L1703861-05	L1703861-06	L1703861-07	L1704354-01	L1704637-01	L1704984-11	L1704637-02	L1704816-15	L1704984-09	L1704354-10	L1704354-02	L1704354-03	
SAMPLE TYPE								SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	
FILL OR NATIVE SOIL								FILL	NATIVE	FILL	NATIVE	FILL	FILL	FILL	NATIVE	FILL	FILL	NATIVE	NATIVE	NATIVE	
SOIL MANAGEMENT CLASSIFICATION								OOSLF*	Similar Soils	Similar Soils	Similar Soils*	OOSLF*	ULF*	OOSLF*	OOSLF*	Similar Soils	N/A	OOSLF	Similar Soils	Similar Soils	Similar Soils
SAMPLE DEPTH (FEET bgs)								5-6	10-12	0-2	10-12	1-2	2-4	4-6	5-7	10-12	0-2	2-4	6-8	10-18	
<b>Extractable Petroleum Hydrocarbons (EPH)</b>																					
C9-C18 Aliphatics	20000	1000	NS	NS	NS	NS	mg/kg	ND(17.3)	ND(16)	ND(7.19)	ND(17.8)	ND(7.76)	53.3	47.8	44.5	24.8	NA	218	ND(14.3)	ND(8.9)	
C19-C36 Aliphatics	20000	3000	NS	NS	NS	NS	mg/kg	219	ND(16)	ND(7.19)	29.6	ND(7.76)	377	657	382	122	NA	179	19.9	ND(8.9)	
C11-C22 Aromatics	10000	1000	NS	NS	NS	NS	mg/kg	167	17.5	ND(7.19)	60.6	ND(7.76)	140	898	110	71.7	NA	183	57	ND(8.9)	
C11-C22 Aromatics, Adjusted	10000	1000	NS	NS	NS	NS	mg/kg	166	17.5	ND(7.19)	60.6	ND(7.76)	132	616	109	71.7	NA	161	57	ND(8.9)	
Naphthalene	10000	4	NS	NS	NS	NS	mg/kg	NA	NA	NA	NA	ND(0.388)	ND(0.398)	ND(2.14)	ND(0.466)	ND(0.585)	NA	ND(0.374)	ND(0.714)	ND(0.445)	
2-Methylnaphthalene	5000	0.7	NS	NS	NS	NS	mg/kg	0.7	NA	NA	NA	ND(0.388)	ND(0.398)	ND(2.14)	ND(0.466)	ND(0.585)	NA	ND(0.374)	ND(0.714)	ND(0.445)	
Acenaphthylene	10000	1	NS	NS	NS	NS	mg/kg	1	NA	NA	NA	ND(0.388)	ND(0.398)	ND(2.14)	ND(0.466)	ND(0.585)	NA	ND(0.374)	ND(0.714)	ND(0.445)	
Acenaphthene	10000	4	NS	NS	NS	NS	mg/kg	4	NA	NA	NA	ND(0.388)	ND(0.398)	ND(2.14)	ND(0.466)	ND(0.585)	NA	ND(0.374)	ND(0.714)	ND(0.445)	
Fluorene	10000	1000	NS	NS	NS	NS	mg/kg	10	NA	NA	NA	ND(0.388)	ND(0.398)	ND(2.14)	ND(0.466)	ND(0.585)	NA	ND(0.374)	ND(0.714)	ND(0.445)	
Phenanthrene	10000	10	NS	NS	NS	NS	mg/kg	10	NA	NA	NA	ND(0.388)	0.779	45.6	ND(0.466)	ND(0.585)	NA	3.31	ND(0.714)	ND(0.445)	
Anthracene	10000	1000	NS	NS	NS	NS	mg/kg	10	NA	NA	NA	ND(0.388)	ND(0.398)	11.1	ND(0.466)	ND(0.585)	NA	0.541	ND(0.714)	ND(0.445)	
Fluoranthene	10000	1000	NS	NS	NS	NS	mg/kg	40	NA	NA	NA	ND(0.388)	1.37	51.9	0.66	ND(0.585)	NA	4.02	ND(0.714)	ND(0.445)	
Pyrene	10000	1000	NS	NS	NS	NS	mg/kg	40	NA	NA	NA	ND(0.388)	1.15	42.6	0.554	ND(0.585)	NA	3.42	ND(0.714)	ND(0.445)	
Benzo(a)anthracene	3000	7	NS	NS	NS	NS	mg/kg	7	NA	NA	NA	ND(0.388)	0.692	21.6	ND(0.466)	ND(0.585)	NA	1.57	ND(0.714)	ND(0.445)	
Chrysene	10000	70	NS	NS	NS	NS	mg/kg	20	NA	NA	NA	ND(0.388)	0.989	20.8	ND(0.466)	ND(0.585)	NA	1.98	ND(0.714)	ND(0.445)	
Benzo(b)fluoranthene	3000	7	NS	NS	NS	NS	mg/kg	7	NA	NA	NA	ND(0.388)	0.743	18.6	ND(0.466)	ND(0.585)	NA	1.28	ND(0.714)	ND(0.445)	
Benzo(k)fluoranthene	10000	70	NS	NS	NS	NS	mg/kg	10	NA	NA	NA	ND(0.388)	0.806	18.2	ND(0.466)	ND(0.585)	NA	1.56	ND(0.714)	ND(0.445)	
Benzo(a)pyrene	300	2	NS	NS	NS	NS	mg/kg	2	NA	NA	NA	ND(0.388)	0.789	19.3	ND(0.466)	ND(0.585)	NA	1.56	ND(0.714)	ND(0.445)	
Indeno(1,2,3-cd)Pyrene	3000	7	NS	NS	NS	NS	mg/kg	7	NA	NA	NA	ND(0.388)	0.563	14.6	ND(0.466)	ND(0.585)	NA	1.02	ND(0.714)	ND(0.445)	
Dibenz(a,h)anthracene	300	0.7	NS	NS	NS	NS	mg/kg	0.7	NA	NA	NA	ND(0.388)	ND(0.398)	3.04	ND(0.466)	ND(0.585)	NA	ND(0.374)	ND(0.714)	ND(0.445)	
Benzo(ghi)perylene	10000	1000	NS	NS	NS	NS	mg/kg	10	NA	NA	NA	ND(0.388)	0.573	14.6	ND(0.466)	ND(0.585)	NA	1.01	ND(0.714)	ND(0.445)	
<b>General Chemistry</b>																					
Specific Conductance @ 25 C	NS	NS	NS	8000	4000	NS	umhos/cm	160	1600	55	750	14	74	84	150	1100	NA	23	1200	210	
Solids, Total	NS	NS	NS	NS	NS	NS	%	38.4	40.7	91.9	37	91.2	82.5	74.2	68.6	55.9	90.6	86.8	45.3	71.9	
pH (H)	NS	NS	NS	NS	NS	NS	SU	7.6	7.8	8.1	7.6	7.4	7.6	7.3	9.4	8.1	NA	7.2	7.9	8.2	
Cyanide, Reactive	NS	NS	NS	250	NS	250	NS	mg/kg	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	
Sulfide, Reactive	NS	NS	NS	500	NS	500	NS	mg/kg	45	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	
<b>Ignitability of</b>																					

TABLE 1 - SUMMARY OF SOIL ANALYTICAL RESULTS

SUFFOLK DOWNS

525 WILLIAM F. MCCLELLAN HIGHWAY

BOSTON, MASSACHUSETTS 02128

VERTEX PROJECT NO. 43068

LOCATION	MCP Upper Concentration Limits (UCLs)	MCP Reportable Concentration RCS-1	MA Aggregate Recycling Criteria	MA Lined Landfill Criteria (LLF)	MA Unlined Landfill Criteria (ULF)	MA Similar Soils RCS-1 (Similar Soils)	Units	VES-101 (5-6) 2/7/2017	VES-101 (10-12) 2/7/2017	VES-102 (0-2) 2/7/2017	VES-102 (10-12) 2/7/2017	VES-103 (1-2) 2/10/2017	VES-104 (2-4) 2/14/2017	VES-105 (4-6) 2/16/2017	VES-106 (5-7) 2/14/2017	VES-106 (10-12) 2/15/2017	VES-107 (0-2) 2/16/2017	VES-107 (2-4) 2/16/2017	VES-108 (6-8) 2/10/2017	VES-108 (16-18) 2/10/2017
SAMPLING DATE								L1703861-04	L1703861-05	L1703861-06	L1703861-07	L1704354-01	L1704637-01	L1704984-11	L1704637-02	L1704816-15	L1704984-09	L1704354-10	L1704354-02	L1704354-03
LAB SAMPLE ID								SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
SAMPLE TYPE								FILL	NATIVE	FILL	NATIVE	FILL	FILL	FILL	NATIVE	FILL	FILL	NATIVE	NATIVE	NATIVE
FILL OR NATIVE SOIL								OOSLF*	Similar Soils	Similar Soils	Similar Soils*	OOSLF*	ULF*	OOSLF*	Similar Soils	N/A	OOSLF	Similar Soils	Similar Soils	Similar Soils
SOIL MANAGEMENT CLASSIFICATION								5-6	10-12	0-2	10-12	1-2	2-4	4-6	5-7	10-12	0-2	2-4	6-8	16-18
SAMPLE DEPTH (FEET bgs)																				
Bis(2-chloroethoxy)methane	1000	500	NS	NS	NS	NS	mg/kg	ND(0.47)	ND(0.44)	ND(0.19)	ND(0.48)	ND(0.2)	ND(0.22)	ND(2.4)	ND(0.52)	ND(0.32)	NA	ND(0.2)	ND(0.39)	ND(0.25)
Hexachlorobutadiene	1000	30	NS	NS	NS	NS	mg/kg	ND(0.43)	ND(0.4)	ND(0.18)	ND(0.45)	ND(0.18)	ND(0.2)	ND(2.2)	ND(0.48)	ND(0.3)	NA	ND(0.19)	ND(0.36)	ND(0.23)
Hexachloroethane	2000	0.7	NS	NS	NS	NS	mg/kg	ND(0.34)	ND(0.32)	ND(0.14)	ND(0.36)	ND(0.14)	ND(0.16)	ND(1.8)	ND(0.38)	ND(0.24)	NA	ND(0.15)	ND(0.29)	ND(0.18)
Isophorone	1000	100	NS	NS	NS	NS	mg/kg	ND(0.39)	ND(0.36)	ND(0.16)	ND(0.4)	ND(0.16)	ND(0.18)	ND(2)	ND(0.43)	ND(0.27)	NA	ND(0.17)	ND(0.33)	ND(0.2)
Naphthalene	10000	4	NS	NS	NS	NS	mg/kg	ND(0.43)	ND(0.4)	ND(0.18)	ND(0.45)	0.33	0.24	ND(2.2)	ND(0.48)	ND(0.3)	NA	ND(0.19)	ND(0.36)	ND(0.23)
Nitrobenzene	1000	500	NS	NS	NS	NS	mg/kg	ND(0.39)	ND(0.36)	ND(0.16)	ND(0.4)	ND(0.16)	ND(0.18)	ND(2)	ND(0.43)	ND(0.27)	NA	ND(0.17)	ND(0.33)	ND(0.2)
Bis(2-ethylhexyl)phthalate	10000	90	NS	NS	NS	NS	mg/kg	ND(0.43)	ND(0.4)	ND(0.18)	ND(0.45)	ND(0.18)	ND(0.2)	ND(2.2)	ND(0.48)	ND(0.3)	NA	ND(0.19)	ND(0.36)	ND(0.23)
Butyl benzyl phthalate	1000	100	NS	NS	NS	NS	mg/kg	ND(0.43)	ND(0.4)	ND(0.18)	ND(0.45)	ND(0.18)	ND(0.2)	ND(2.2)	ND(0.48)	ND(0.3)	NA	ND(0.19)	ND(0.36)	ND(0.23)
Di-n-butylphthalate	1000	50	NS	NS	NS	NS	mg/kg	ND(0.43)	ND(0.4)	ND(0.18)	ND(0.45)	ND(0.18)	ND(0.2)	ND(2.2)	ND(0.48)	ND(0.3)	NA	ND(0.19)	ND(0.36)	ND(0.23)
Di-n-octylphthalate	1000	1000	NS	NS	NS	NS	mg/kg	ND(0.43)	ND(0.4)	ND(0.18)	ND(0.45)	ND(0.18)	ND(0.2)	ND(2.2)	ND(0.48)	ND(0.3)	NA	ND(0.19)	ND(0.36)	ND(0.23)
Diethyl phthalate	10000	10	NS	NS	NS	NS	mg/kg	ND(0.43)	ND(0.4)	ND(0.18)	ND(0.45)	ND(0.18)	ND(0.2)	ND(2.2)	ND(0.48)	ND(0.3)	NA	ND(0.19)	ND(0.36)	ND(0.23)
Dimethyl phthalate	10000	0.7	NS	NS	NS	NS	mg/kg	ND(0.43)	ND(0.4)	ND(0.18)	ND(0.45)	ND(0.18)	ND(0.2)	ND(2.2)	ND(0.48)	ND(0.3)	NA	ND(0.19)	ND(0.36)	ND(0.23)
Benzo(a)anthracene	3000	7	NS	NS	NS	7	mg/kg	0.27	ND(0.24)	ND(0.11)	ND(0.27)	3.6	2.6	20	0.57	ND(0.18)	NA	0.91	ND(0.22)	ND(0.14)
Benzo(a)pyrene	300	2	NS	NS	NS	2	mg/kg	ND(0.34)	ND(0.32)	ND(0.14)	ND(0.36)	2.9	2.2	18	0.56	ND(0.24)	NA	0.76	ND(0.29)	ND(0.18)
Benzo(b)fluoranthene	3000	7	NS	NS	NS	7	mg/kg	0.39	ND(0.24)	ND(0.11)	ND(0.27)	3.8	3	23	0.74	ND(0.18)	NA	0.97	ND(0.22)	ND(0.14)
Benzo(k)fluoranthene	10000	70	NS	NS	NS	10	mg/kg	ND(0.26)	ND(0.24)	ND(0.11)	ND(0.27)	1.2	1	7.3	ND(0.29)	ND(0.18)	NA	0.36	ND(0.22)	ND(0.14)
Chrysene	10000	70	NS	NS	20	mg/kg	0.31	ND(0.24)	ND(0.11)	ND(0.27)	3.4	2.6	18	0.59	ND(0.18)	NA	1	ND(0.22)	ND(0.14)	
Acenaphthylene	10000	1	NS	NS	1	mg/kg	ND(0.34)	ND(0.32)	ND(0.14)	ND(0.36)	0.14	ND(0.16)	ND(1.8)	ND(0.38)	ND(0.24)	NA	ND(0.15)	ND(0.29)	ND(0.18)	
Anthracene	10000	1000	NS	NS	10	mg/kg	ND(0.26)	ND(0.24)	ND(0.11)	ND(0.27)	1.4	0.59	11	ND(0.29)	ND(0.18)	NA	0.24	ND(0.22)	ND(0.14)	
Benzo(g,h,i)perylene	10000	1000	NS	NS	10	mg/kg	ND(0.34)	ND(0.32)	ND(0.14)	ND(0.36)	1.6	1.4	11	ND(0.38)	ND(0.24)	NA	0.46	ND(0.29)	ND(0.18)	
Fluorene	10000	1000	NS	NS	10	mg/kg	ND(0.43)	ND(0.4)	ND(0.18)	ND(0.45)	0.52	0.31	ND(2.2)	ND(0.48)	ND(0.3)	NA	0.2	ND(0.36)	ND(0.23)	
Phenanthrene	10000	10	NS	NS	NS	10	mg/kg	0.37	ND(0.24)	ND(0.11)	ND(0.27)	5.1	3.5	37	0.52	ND(0.18)	NA	2.2	ND(0.22)	ND(0.14)
Dibenz(a,h)anthracene	300	0.7	NS	NS	NS	0.7	mg/kg	ND(0.26)	ND(0.24)	ND(0.11)	ND(0.27)	0.48	0.34	2.6	ND(0.29)	ND(0.18)	NA	0.12	ND(0.22)	ND(0.14)
Indeno(1,2,3-cd)pyrene	3000	7	NS	NS	7	mg/kg	ND(0.34)	ND(0.32)	ND(0.14)	ND(0.36)	1.8	1.5	12	ND(0.38)	ND(0.24)	NA	0.54	ND(0.29)	ND(0.18)	
Pyrene	10000	1000	NS	NS	40	mg/kg	0.57	ND(0.24)	ND(0.11)	ND(0.28)	5.4	4.8	37	0.84	ND(0.18)	NA	2.1	ND(0.22)	ND(0.14)	
Aniline	1000	1000	NS	NS	NS	NS	mg/kg	ND(0.52)	ND(0.49)	ND(0.21)	ND(0.54)	ND(0.22)	ND(0.24)	ND(2.6)	ND(0.58)	ND(0.36)	NA	ND(0.22)	ND(0.44)	ND(0.27)
4-Chloroaniline	400	1	NS	NS	NS	NS	mg/kg	ND(0.43)	ND(0.4)	ND(0.18)	ND(0.45)	ND(0.18)	ND(0.2)	ND(2.2)	ND(0.48)	ND(0.3)	NA	ND(0.19)	ND(0.36)	ND(0.23)
Dibenzofuran	1000	100	NS	NS	NS	NS	mg/kg	ND(0.43)	ND(0.4)	ND(0.18)	ND(0.45)	0.44	ND(0.2)	ND(2.2)	ND(0.48)	ND(0.3)	NA	ND(0.19)	ND(0.36)	ND(0.23)
2-Methylnaphthalene	5000	0.7	NS	NS	NS	0.7	mg/kg	ND(0.52)	ND(0.49)	ND(0.21)	ND(0.54)	ND(0.22)	ND(0.24)	ND(2.6)	ND(0.58)	ND(0.36)	NA	0.23	ND(0.44)	ND(0.27)
Acetophenone	1000	1000	NS	NS	NS															

**TABLE 1 - SUMMARY OF SOIL ANALYTICAL RESULTS**  
**SUFFOLK DOWNS**  
**525 WILLIAM F. MCCLELLAN HIGHWAY**  
**BOSTON, MASSACHUSETTS 02128**  
**VERTEX PROJECT NO. 43068**

LOCATION	MCP Upper Concentration Limits (UCLs)	MCP Reportable Concentration RCS-1	MA Aggregate Recycling Criteria	MA Lined Landfill Criteria (LLF)	MA Unlined Landfill Criteria (ULF)	MA Similar Soils RCS-1 (Similar Soils)	Units	VES-101 (5-6) 2/7/2017	VES-101 (10-12) 2/7/2017	VES-102 (0-2) 2/7/2017	VES-102 (10-12) 2/10/2017	VES-103 (1-2) 2/14/2017	VES-104 (2-4) 2/16/2017	VES-105 (4-6) 2/14/2017	VES-106 (5-7) 2/15/2017	VES-106 (10-12) 2/16/2017	VES-107 (0-2) 2/16/2017	VES-107 (2-4) 2/16/2017	VES-108 (6-8) 2/10/2017	VES-108 (16-18) 2/10/2017	
SAMPLING DATE								L1703861-04	L1703861-05	L1703861-06	L1703861-07	L1704354-01	L1704637-01	L1704984-11	L1704637-02	L1704816-15	L1704984-09	L1704354-10	L1704354-02	L1704354-03	
LAB SAMPLE ID								SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	
SAMPLE TYPE								FILL	NATIVE	FILL	NATIVE	FILL	FILL	FILL	NATIVE	FILL	FILL	NATIVE	NATIVE		
FILL OR NATIVE SOIL								OOSLF*	Similar Soils	Similar Soils	Similar Soils*	OOSLF*	ULF*	OOSLF*	Similar Soils	N/A	OOSLF	Similar Soils	Similar Soils		
SOIL MANAGEMENT CLASSIFICATION								5-6	10-12	0-2	10-12	1-2	2-4	4-6	5-7	10-12	0-2	2-4	6-8	16-18	
SAMPLE DEPTH (FEET bgs)																					
Vinyl chloride	600	0.7	NS	NS	NS	NS	mg/kg	ND(0.005)	ND(0.0038)	ND(0.0016)	ND(0.0047)	ND(0.0042)	ND(0.0028)	ND(0.0019)	ND(0.0028)	ND(0.0028)	ND(0.0014)	ND(0.0033)	ND(0.0015)		
Chloroethane	1000	100	NS	NS	NS	NS	mg/kg	ND(0.005)	ND(0.0038)	ND(0.0016)	ND(0.0047)	ND(0.0042)	ND(0.0028)	ND(0.0019)	ND(0.0028)	ND(0.0028)	ND(0.0014)	ND(0.0033)	ND(0.0015)		
1,1-Dichloroethene	10000	3	NS	NS	NS	NS	mg/kg	ND(0.0025)	ND(0.0019)	ND(0.00081)	ND(0.0024)	ND(0.0021)	ND(0.0014)	ND(0.00094)	ND(0.0014)	ND(0.0014)	ND(0.00071)	ND(0.0016)	ND(0.00077)		
trans-1,2-Dichloroethene	10000	1	NS	NS	NS	NS	mg/kg	ND(0.0038)	ND(0.0029)	ND(0.0012)	ND(0.0036)	ND(0.0032)	ND(0.0021)	ND(0.0014)	ND(0.0021)	ND(0.0011)	ND(0.0025)	ND(0.0012)			
Trichloroethene	600	0.3	NS	NS	NS	NS	mg/kg	ND(0.0025)	ND(0.0019)	ND(0.00081)	ND(0.0024)	ND(0.0021)	ND(0.0014)	ND(0.00094)	ND(0.0014)	ND(0.0014)	ND(0.00071)	ND(0.0016)	ND(0.00077)		
1,2-Dichlorobenzene	10000	9	NS	NS	NS	NS	mg/kg	ND(0.01)	ND(0.0077)	ND(0.0032)	ND(0.0095)	ND(0.0084)	ND(0.0055)	ND(0.0037)	ND(0.0055)	ND(0.0028)	ND(0.0066)	ND(0.0031)			
1,3-Dichlorobenzene	5000	3	NS	NS	NS	NS	mg/kg	ND(0.01)	ND(0.0077)	ND(0.0032)	ND(0.0095)	ND(0.0084)	ND(0.0055)	ND(0.0037)	ND(0.0057)	ND(0.0028)	ND(0.0066)	ND(0.0031)			
1,4-Dichlorobenzene	10000	0.7	NS	NS	NS	NS	mg/kg	ND(0.01)	ND(0.0077)	ND(0.0032)	ND(0.0095)	ND(0.0084)	ND(0.0055)	ND(0.0037)	ND(0.0057)	ND(0.0028)	ND(0.0066)	ND(0.0031)			
Methyl tert butyl ether	5000	0.1	NS	NS	NS	NS	mg/kg	ND(0.005)	ND(0.0038)	ND(0.0016)	ND(0.0047)	ND(0.0042)	ND(0.0028)	ND(0.0019)	ND(0.0028)	ND(0.0028)	ND(0.0014)	ND(0.0033)	ND(0.0015)		
p/m-Xylene	NS	NS	NS	NS	NS	NS	mg/kg	ND(0.005)	ND(0.0038)	ND(0.0016)	ND(0.0047)	ND(0.0042)	ND(0.0028)	ND(0.0019)	ND(0.0028)	ND(0.0028)	ND(0.0014)	ND(0.0033)	ND(0.0015)		
o-Xylene	NS	NS	NS	NS	NS	NS	mg/kg	ND(0.005)	ND(0.0038)	ND(0.0016)	ND(0.0047)	ND(0.0042)	ND(0.0028)	ND(0.0019)	ND(0.0028)	ND(0.0028)	ND(0.0014)	ND(0.0033)	ND(0.0015)		
Xylenes, Total	10000	100	NS	NS	NS	NS	mg/kg	ND(0.005)	ND(0.0038)	ND(0.0016)	ND(0.0047)	ND(0.0042)	ND(0.0028)	ND(0.0019)	ND(0.0028)	ND(0.0028)	ND(0.0014)	ND(0.0033)	ND(0.0015)		
cis-1,2-Dichloroethene	5000	0.1	NS	NS	NS	NS	mg/kg	ND(0.0025)	ND(0.0019)	ND(0.00081)	ND(0.0024)	ND(0.0021)	ND(0.0014)	ND(0.00094)	ND(0.0014)	ND(0.0014)	ND(0.00071)	ND(0.0016)	ND(0.00077)		
1,2-Dichloroethene, Total	1000	NS	NS	NS	NS	NS	mg/kg	ND(0.0025)	ND(0.0019)	ND(0.00081)	ND(0.0024)	ND(0.0021)	ND(0.0014)	ND(0.00094)	ND(0.0014)	ND(0.0014)	ND(0.00071)	ND(0.0016)	ND(0.00077)		
Dibromomethane	1000	500	NS	NS	NS	NS	mg/kg	ND(0.01)	ND(0.0077)	ND(0.0032)	ND(0.0095)	ND(0.0084)	ND(0.0055)	ND(0.0037)	ND(0.0057)	ND(0.0055)	ND(0.0028)	ND(0.0066)	ND(0.0031)		
1,2,3-Trichloropropane	1000	100	NS	NS	NS	NS	mg/kg	ND(0.01)	ND(0.0077)	ND(0.0032)	ND(0.0095)	ND(0.0084)	ND(0.0055)	ND(0.0037)	ND(0.0057)	ND(0.0055)	ND(0.0028)	ND(0.0066)	ND(0.0031)		
Styrene	10000	3	NS	NS	NS	NS	mg/kg	ND(0.005)	ND(0.0038)	ND(0.0016)	ND(0.0047)	ND(0.0042)	ND(0.0028)	ND(0.0019)	ND(0.0028)	ND(0.0028)	ND(0.0014)	ND(0.0033)	ND(0.0015)		
Dichlorodifluoromethane	1000	1000	NS	NS	NS	NS	mg/kg	ND(0.025)	ND(0.019)	ND(0.0081)	ND(0.024)	ND(0.0021)	ND(0.0014)	ND(0.00094)	ND(0.0014)	ND(0.0014)	ND(0.00071)	ND(0.0016)	ND(0.00077)		
Acetone	10000	6	NS	NS	NS	NS	mg/kg	0.59	ND(0.069)	ND(0.029)	0.91	ND(0.076)	ND(0.05)	ND(0.034)	0.056	0.067	NA	0.082	0.062	ND(0.028)	
Carbon disulfide	1000	100	NS	NS	NS	NS	mg/kg	ND(0.01)	ND(0.0081)	0.015	ND(0.032)	0.016	ND(0.0084)	ND(0.0055)	ND(0.0037)	0.061	0.024	NA	ND(0.0028)	0.023	ND(0.031)
Methyl ethyl ketone	10000	4	NS	NS	NS	NS	mg/kg	0.16	ND(0.019)	ND(0.0081)	ND(0.024)	ND(0.021)	ND(0.014)	ND(0.0094)	ND(0.014)	ND(0.014)	NA	0.012	ND(0.016)	ND(0.0077)	
Methyl isobutyl ketone	10000	0.4	NS	NS	NS	NS	mg/kg	ND(0.025)	ND(0.019)	ND(0.0081)	ND(0.024)	ND(0.021)	ND(0.014)	ND(0.0094)	ND(0.014)	ND(0.014)	ND(0.0071)	ND(0.016)	ND(0.0077)		
2-Hexanone	1000	100	NS	NS	NS	NS	mg/kg	ND(0.025)	ND(0.019)	ND(0.0081)	ND(0.024)	ND(0.021)	ND(0.014)	ND(0.0094)	ND(0.014)	ND(0.014)	ND(0.0071)	ND(0.016)	ND(0.0077)		
Bromochloromethane	1000	NS	NS	NS	NS	NS	mg/kg	ND(0.01)	ND(0.0077)	ND(0.0032)	ND(0.0095)	ND(0.0084)	ND(0.0055)	ND(0.0037)	ND(0.0057)	ND(0.0055)	ND(0.0028)	ND(0.0066)	ND(0.0031)		
Tetrahydrofuran	1000	500	NS	NS	NS	NS	mg/kg	ND(0.01)	ND(0.0077)	ND(0.0032)	ND(0.0095)	ND(0.0084)	ND(0.0055)	ND(0.0037)	ND(0.0057)	ND(0.0055)	ND(0.0028)	ND(0.0066)	ND(0.0031)		
2,2-Dichloropropane	1000	NS	NS	NS	NS	NS	mg/kg	ND(0.012)	ND(0.0096)	ND(0.0041)	ND(0.012)	ND(0.01)	ND(0.0069)	ND(0.0047)	ND(0.0071)	ND(0.0069)	NA	ND(0.0036)	ND(0.0082)	ND(0.0039)	
1,2-Dibromoethane	400	0.1	NS	NS	NS	NS	mg/kg	ND(0.01)	ND(0.0077)	ND(0.0											

**TABLE 1 - SUMMARY OF SOIL ANALYTICAL RESULTS**

## SUFFOLK DOWNS

525 WILLIAM F. MCCLELLAN HIGHWAY

STON, MASSACHUSETTS 02128

LOCATION	MCP Upper Concentration Limits (UCLs)	MCP Reportable Concentration RCS-1	MA Aggregate Recycling Criteria	MA Lined Landfill Criteria (LLF)	MA Unlined Landfill Criteria (ULF)	MA Similar Soils RCS-1 (Similar Soils)	Units	VES-109 (0-2) 2/10/2017	VES-110 (0-2) 2/14/2017	VES-110 (2-4) 2/14/2017	VES-110 (12-14) 2/14/2017	VES-111 (0-2) 2/14/2017	VES-111 (2-4) 2/17/2017	VES-112 (0-1) 2/17/2017	VES-112 (1-2) 2/15/2017	VES-113 (2-4) 2/15/2017	VES-114 (0-2) 2/15/2017	VES-114 (2-4) 2/15/2017	VES-115 (0-2) 2/15/2017	VES-115 (2-4) 2/17/2017		
SAMPLING DATE								L1704354-06	L1704637-03	L1704637-04	L1704637-05	L1704637-06	L1704637-07	L1705147-05	L1705147-06	L1704816-01	L1704816-05	L1704816-06	L1704816-07	L1704816-08	L1705147-04	
LAB SAMPLE ID								SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL		
SAMPLE TYPE								FILL	FILL	FILL	NATIVE	FILL										
FILL OR NATIVE SOIL								Similar Soils	N/A	Similar Soils	N/A	Similar Soils*	N/A	Similar Soils	OOSLF*	N/A	LLF*	N/A	Similar Soils*	Similar Soils*		
SOIL MANAGEMENT CLASSIFICATION								0-2	0-2	2-4	12-14	0-2	2-4	0-1	1-2	2-4	0-2	2-4	2-4	2-4		
SAMPLE DEPTH (FEET bgs)																						
Extractable Petroleum Hydrocarbons (EPH)																						
C9-C18 Aliphatics	20000	1000	NS	NS	NS	NS	mg/kg	ND(7.33)	NA	ND(8.14)	ND(8.73)	NA	ND(8.91)	NA	ND(6.89)	33.9	NA	ND(8.97)	NA	ND(10.1)	ND(7.01)	
C19-C36 Aliphatics	20000	3000	NS	NS	NS	NS	mg/kg	ND(7.33)	NA	8.65	ND(8.73)	NA	10.9	NA	8.88	154	NA	ND(8.97)	NA	ND(10.1)	11.4	
C11-C22 Aromatics	10000	1000	NS	NS	NS	NS	mg/kg	9.32	NA	ND(8.14)	ND(8.73)	NA	9.78	NA	ND(6.89)	210	NA	64	NA	ND(10.1)	15.7	
C11-C22 Aromatics, Adjusted	10000	1000	NS	NS	NS	NS	mg/kg	9.32	NA	ND(8.14)	ND(8.73)	NA	9.78	NA	ND(6.89)	192	NA	32.8	NA	ND(10.1)	14.9	
Naphthalene	10000	4	NS	NS	NS	NS	mg/kg	ND(0.366)	NA	ND(0.407)	ND(0.437)	NA	ND(0.446)	NA	ND(0.345)	ND(0.388)	NA	ND(0.448)	NA	ND(0.504)	ND(0.35)	
2-Methylnaphthalene	5000	0.7	NS	NS	NS	NS	mg/kg	ND(0.366)	NA	ND(0.407)	ND(0.437)	NA	ND(0.446)	NA	ND(0.345)	ND(0.388)	NA	ND(0.448)	NA	ND(0.504)	ND(0.35)	
Acenaphthylene	10000	1	NS	NS	NS	NS	mg/kg	ND(0.366)	NA	ND(0.407)	ND(0.437)	NA	ND(0.446)	NA	ND(0.345)	ND(0.388)	NA	ND(0.448)	NA	ND(0.504)	ND(0.35)	
Acenaphthene	10000	4	NS	NS	NS	NS	mg/kg	ND(0.366)	NA	ND(0.407)	ND(0.437)	NA	ND(0.446)	NA	ND(0.345)	ND(0.388)	NA	ND(0.448)	NA	ND(0.504)	ND(0.35)	
Fluorene	10000	1000	NS	NS	NS	NS	mg/kg	ND(0.366)	NA	ND(0.407)	ND(0.437)	NA	ND(0.446)	NA	ND(0.345)	ND(0.388)	NA	ND(0.448)	NA	ND(0.504)	ND(0.35)	
Phenanthrene	10000	10	NS	NS	NS	NS	mg/kg	ND(0.366)	NA	ND(0.407)	ND(0.437)	NA	ND(0.446)	NA	ND(0.345)	2.08	NA	2.4	NA	ND(0.504)	ND(0.35)	
Anthracene	10000	1000	NS	NS	NS	NS	mg/kg	ND(0.366)	NA	ND(0.407)	ND(0.437)	NA	ND(0.446)	NA	ND(0.345)	0.468	NA	0.511	NA	ND(0.504)	ND(0.35)	
Fluoranthene	10000	1000	NS	NS	NS	NS	mg/kg	ND(0.366)	NA	ND(0.407)	ND(0.437)	NA	ND(0.446)	NA	ND(0.345)	3.38	NA	4.97	NA	ND(0.504)	0.434	
Pyrene	10000	1000	NS	NS	NS	NS	mg/kg	ND(0.366)	NA	ND(0.407)	ND(0.437)	NA	ND(0.446)	NA	ND(0.345)	2.7	NA	4.5	NA	ND(0.504)	0.386	
Benzo(a)anthracene	3000	7	NS	NS	NS	NS	mg/kg	ND(0.366)	NA	ND(0.407)	ND(0.437)	NA	ND(0.446)	NA	ND(0.345)	1.59	NA	2.89	NA	ND(0.504)	ND(0.35)	
Chrysene	10000	70	NS	NS	NS	NS	mg/kg	ND(0.366)	NA	ND(0.407)	ND(0.437)	NA	ND(0.446)	NA	ND(0.345)	1.9	NA	3.05	NA	ND(0.504)	ND(0.35)	
Benzo(b)fluoranthene	3000	7	NS	NS	NS	NS	mg/kg	ND(0.366)	NA	ND(0.407)	ND(0.437)	NA	ND(0.446)	NA	ND(0.345)	1.37	NA	2.47	NA	ND(0.504)	ND(0.35)	
Benzo(k)fluoranthene	10000	70	NS	NS	NS	NS	mg/kg	ND(0.366)	NA	ND(0.407)	ND(0.437)	NA	ND(0.446)	NA	ND(0.345)	1.38	NA	2.72	NA	ND(0.504)	ND(0.35)	
Benzo(a)pyrene	300	2	NS	NS	NS	NS	mg/kg	ND(0.366)	NA	ND(0.407)	ND(0.437)	NA	ND(0.446)	NA	ND(0.345)	1.49	NA	2.93	NA	ND(0.504)	ND(0.35)	
Indeno(1,2,3-cd)Pyrene	3000	7	NS	NS	NS	NS	mg/kg	ND(0.366)	NA	ND(0.407)	ND(0.437)	NA	ND(0.446)	NA	ND(0.345)	1	NA	2.08	NA	ND(0.504)	ND(0.35)	
Dibenzo(a,h)anthracene	300	0.7	NS	NS	NS	NS	mg/kg	ND(0.366)	NA	ND(0.407)	ND(0.437)	NA	ND(0.446)	NA	ND(0.345)	ND(0.388)	NA	0.588	NA	ND(0.504)	ND(0.35)	
Benzo(ghi)perylene	10000	1000	NS	NS	NS	NS	mg/kg	ND(0.366)	NA	ND(0.407)	ND(0.437)	NA	ND(0.446)	NA	ND(0.345)	1.02	NA	2.03	NA	ND(0.504)	ND(0.35)	
General Chemistry																						
Specific Conductance @ 25 C	NS	NS	NS	NS	8000	4000	NS	umhos/cm	18	NA	41	780	NA	25	NA	13	48	NA	94	NA	64	21
Solids, Total	NS	NS	NS	NS	NS	NS	NS	%	90.3	61.6	80.4	74.1	78.6	74.1	94.2	83	59.1	71.4	71	65	92.9	
pH (H)	NS	NS	NS	NS	NS	NS	NS	SU	7.4	NA	7	8.1	NA	5.8	NA	7.3	7.7	NA	8	NA	7.7	7.6
Cyanide, Reactive	NS	NS	250	NS	250	NS	mg/kg	ND(10)	NA	ND(10)	NA	ND(10)	NA	ND(10)	NA	ND(10)	ND(10)	NA	ND(10)	NA	ND(10)	ND(10)
Sulfide, Reactive	NS	NS	500	NS	500	NS	NS	mg/kg	ND(10)	NA	ND(10)	NA	ND(10)	NA	ND(10)	NA	ND(10)	ND(10)	NA	ND(10)	NA	ND(10)
Ignitability of Solids																						
Ignitability	NS	NS	NS	NS	NS	NS	NI	NI	NA	NI	NI	NA	NI	NI	NI	NI	NI	NA	NI	NI	NI	
MCP Organochlorine Pesticides																						
Delta-BHC	1000	10	NS	NS	NS	NS	mg/kg	NA	ND(0.0128)	NA	NA	NA	ND(0.00995)	NA	ND(0.00836)	NA	NA	ND(0.0134)	NA	ND(0.0108)	NA	
Lindane	600	0.003	NS	NS	NS	NS	mg/kg	NA	ND(0.00427)	NA	NA	NA	ND(0.00332)	NA	ND(0.00279)	NA	NA	ND(0.00448)	NA	ND(0.00359)	NA	
Alpha-BHC	1000	50	NS	NS	NS	NS	mg/kg	NA	ND(0.00533)	NA	NA	NA	ND(0.00415)	NA	ND(0.00348)	NA	NA	ND(0.00561)	NA	ND(0.00449)	NA	
Beta-BHC	1000	10	NS	NS	NS	NS	mg/kg	NA	ND(0.0128)	NA	NA	NA	ND(0.00995)	NA	ND(0.00836)	NA	NA	ND(0.0134)	NA	ND(0.0108)	NA	
Heptachlor	100	0.3	NS	NS	NS	NS	mg/kg	NA	ND(0.0064)	NA	NA	NA	ND(0.00498)	NA	ND(0.00418)	NA	NA	ND(0.00673)	NA	ND(0.00539)	NA	
Aldrin	30	0.08	NS	NS	NS	NS	mg/kg	NA	ND(0.0128)	NA	NA	NA	ND(0.00995)	NA	ND(0.00836)	NA	NA	ND(0.0134)	NA	ND(0.0108)	NA	
Heptachlor epoxide	10	0.1	NS	NS	NS	NS	mg/kg	NA	ND(0.024)	NA	NA	NA	ND(0.0187)	NA	ND(0.0157)	NA	NA	ND(0.0252)	NA	ND		

TABLE 1 - SUMMARY OF SOIL ANALYTICAL RESULTS

SUFFOLK DOWNS

525 WILLIAM F. MCCLELLAN HIGHWAY

BOSTON, MASSACHUSETTS 02128

VERTEX PROJECT NO. 43068

LOCATION	SAMPLING DATE	MCP Upper Concentration Limits (UCLs)	MCP Reportable Concentration RCS-1	MA Aggregate Recycling Criteria	MA Lined Landfill Criteria (LLF)	MA Unlined Landfill Criteria (ULF)	MA Similar Soils RCS-1 (Similar Soils)	Units	VES-109 (0-2)	VES-110 (0-2)	VES-110 (2-4)	VES-110 (12-14)	VES-111 (0-2)	VES-111 (2-4)	VES-112 (0-1)	VES-112 (1-2)	VES-113 (2-4)	VES-114 (0-2)	VES-114 (2-4)	VES-115 (0-2)	VES-115 (2-4)	VES-116 (2-4)
SAMPLING DATE	2/10/2017	2/14/2017	L1704354-06	L1704637-03	2/14/2017	L1704637-04	2/14/2017	2/14/2017	2/14/2017	2/14/2017	2/14/2017	2/17/2017	2/17/2017	2/15/2017	2/15/2017	2/15/2017	2/15/2017	2/15/2017	2/15/2017	2/15/2017	2/17/2017	
LAB SAMPLE ID									L1704637-06	L1704637-07	L1705147-05	L1705147-06	L1704816-01	L1704816-05	L1704816-06	L1704816-07	L1704816-06	L1704816-07	L1704816-07	L1704816-08	L1705147-04	
SAMPLE TYPE									SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	
FILL OR NATIVE SOIL									FILL	FILL	NATIVE	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	
SOIL MANAGEMENT CLASSIFICATION									Similar Soils	N/A	Similar Soils	Similar Soils	N/A	Similar Soils*	N/A	Similar Soils	OOSLF*	N/A	LLF*	N/A	Similar Soils*	Similar Soils
SAMPLE DEPTH (FEET bgs)									0-2	0-2	2-4	12-14	0-2	2-4	0-1	1-2	2-4	0-2	2-4	0-2	2-4	2-4
Bis(2-chloroethoxy)methane	1000	500	NS	NS	NS	NS	NS	mg/kg	ND(0.19)	NA	ND(0.22)	NA	ND(0.24)	NA	ND(0.19)	ND(0.22)	NA	ND(0.5)	NA	ND(0.54)	ND(0.19)	
Hexachlorobutadiene	1000	30	NS	NS	NS	NS	NS	mg/kg	ND(0.18)	NA	ND(0.21)	NA	ND(0.22)	NA	ND(0.17)	ND(0.2)	NA	ND(0.46)	NA	ND(0.5)	ND(0.18)	
Hexachloroethane	2000	0.7	NS	NS	NS	NS	NS	mg/kg	ND(0.14)	NA	ND(0.16)	ND(0.18)	NA	ND(0.14)	ND(0.16)	NA	ND(0.37)	NA	ND(0.4)	ND(0.14)		
Isophorone	1000	100	NS	NS	NS	NS	4	mg/kg	ND(0.16)	NA	ND(0.18)	ND(0.2)	NA	ND(0.2)	ND(0.16)	ND(0.18)	NA	ND(0.41)	NA	ND(0.45)	ND(0.16)	
Naphthalene	10000	4	NS	NS	NS	NS	4	mg/kg	ND(0.18)	NA	ND(0.21)	ND(0.22)	NA	ND(0.22)	NA	ND(0.17)	ND(0.2)	NA	1.4	NA	ND(0.5)	ND(0.18)
Nitrobenzene	1000	500	NS	NS	NS	NS	NS	mg/kg	ND(0.16)	NA	ND(0.18)	ND(0.2)	NA	ND(0.2)	NA	ND(0.16)	ND(0.18)	NA	ND(0.41)	NA	ND(0.45)	ND(0.16)
Bis(2-ethylhexyl)phthalate	10000	90	NS	NS	NS	NS	NS	mg/kg	ND(0.18)	NA	ND(0.21)	ND(0.22)	NA	ND(0.22)	NA	ND(0.17)	ND(0.2)	NA	ND(0.46)	NA	ND(0.5)	ND(0.18)
Butyl benzyl phthalate	1000	100	NS	NS	NS	NS	NS	mg/kg	ND(0.18)	NA	ND(0.21)	ND(0.22)	NA	ND(0.22)	NA	ND(0.17)	ND(0.2)	NA	ND(0.46)	NA	ND(0.5)	ND(0.18)
Di-n-butylphthalate	1000	50	NS	NS	NS	NS	NS	mg/kg	ND(0.18)	NA	ND(0.21)	ND(0.22)	NA	ND(0.22)	NA	ND(0.17)	ND(0.2)	NA	ND(0.46)	NA	ND(0.5)	ND(0.18)
Di-n-octylphthalate	1000	1000	NS	NS	NS	NS	NS	mg/kg	ND(0.18)	NA	ND(0.21)	ND(0.22)	NA	ND(0.22)	NA	ND(0.17)	ND(0.2)	NA	ND(0.46)	NA	ND(0.5)	ND(0.18)
Diethyl phthalate	10000	10	NS	NS	NS	NS	NS	mg/kg	ND(0.18)	NA	ND(0.21)	ND(0.22)	NA	ND(0.22)	NA	ND(0.17)	ND(0.2)	NA	ND(0.46)	NA	ND(0.5)	ND(0.18)
Dimethyl phthalate	10000	0.7	NS	NS	NS	NS	NS	mg/kg	ND(0.18)	NA	ND(0.21)	ND(0.22)	NA	ND(0.22)	NA	ND(0.17)	ND(0.2)	NA	ND(0.46)	NA	ND(0.5)	ND(0.18)
Benzo(a)anthracene	3000	7	NS	NS	NS	NS	7	mg/kg	ND(0.11)	NA	0.18	ND(0.13)	NA	0.22	NA	0.12	12	NA	5.1	NA	ND(0.3)	0.26
Benzo(a)pyrene	300	2	NS	NS	NS	NS	2	mg/kg	ND(0.14)	NA	0.16	ND(0.18)	NA	0.22	NA	ND(0.14)	9.2	NA	4.7	NA	ND(0.4)	0.26
Benzo(b)fluoranthene	3000	7	NS	NS	NS	NS	7	mg/kg	ND(0.11)	NA	0.2	ND(0.13)	NA	0.29	NA	0.16	12	NA	6	NA	ND(0.3)	0.3
Benzo(k)fluoranthene	10000	70	NS	NS	NS	NS	10	mg/kg	ND(0.11)	NA	ND(0.12)	ND(0.13)	NA	ND(0.13)	NA	ND(0.1)	2.7	NA	2.1	NA	ND(0.3)	0.11
Chrysene	10000	70	NS	NS	NS	NS	20	mg/kg	ND(0.11)	NA	0.15	ND(0.13)	NA	0.23	NA	0.12	12	NA	5.1	NA	ND(0.3)	0.24
Acenaphthylene	10000	1	NS	NS	NS	1	1	mg/kg	ND(0.14)	NA	ND(0.16)	ND(0.18)	NA	ND(0.18)	NA	ND(0.14)	ND(0.16)	NA	ND(0.37)	NA	ND(0.4)	ND(0.14)
Anthracene	10000	1000	NS	NS	NS	10	mg/kg	ND(0.11)	NA	ND(0.12)	ND(0.13)	NA	ND(0.13)	NA	ND(0.1)	3.1	NA	1.1	NA	ND(0.3)	ND(0.1)	
Benzo(ghi)perylene	10000	1000	NS	NS	NS	10	mg/kg	ND(0.14)	NA	ND(0.16)	ND(0.18)	NA	ND(0.18)	NA	ND(0.14)	4.6	NA	2.7	NA	ND(0.4)	ND(0.14)	
Fluorene	10000	1000	NS	NS	NS	10	mg/kg	ND(0.18)	NA	ND(0.21)	ND(0.22)	NA	ND(0.22)	NA	ND(0.17)	0.58	NA	0.86	NA	ND(0.5)	ND(0.18)	
Phenanthrene	10000	10	NS	NS	NS	10	mg/kg	ND(0.11)	NA	0.17	ND(0.13)	NA	0.13	NA	ND(0.1)	17	NA	7.8	NA	ND(0.3)	0.32	
Dibenz(a,h)anthracene	300	0.7	NS	NS	NS	0.7	mg/kg	ND(0.11)	NA	ND(0.12)	ND(0.13)	NA	ND(0.13)	NA	ND(0.1)	1.1	NA	0.66	NA	ND(0.3)	ND(0.1)	
Indeno(1,2,3-cd)pyrene	3000	7	NS	NS	NS	7	mg/kg	ND(0.14)	NA	ND(0.16)	ND(0.18)	NA	ND(0.18)	NA	ND(0.14)	5	NA	2.9	NA	ND(0.4)	0.15	
Pyrene	10000	1000	NS	NS	NS	40	mg/kg	ND(0.11)	NA	0.28	ND(0.13)	NA	0.29	NA	0.18	22	NA	9.6	NA	0.38	0.46	
Aniline	1000	1000	NS	NS	NS	NS	NS	mg/kg	ND(0.22)	NA	ND(0.25)	ND(0.26)	NA	ND(0.26)	NA	ND(0.21)	ND(0.24)	NA	ND(0.55)	NA	ND(0.6)	ND(0.21)
4-Chloroaniline	400	1	NS	NS	NS	NS	NS	mg/kg	ND(0.18)	NA	ND(0.21)	ND(0.22)	NA	ND(0.22)	NA	ND(0.17)	ND(0.2)	NA	ND(0.46)	NA	ND(0.5)	ND(0.18)
Dibenzofuran	1000	100	NS	NS	NS	NS	NS	mg/kg	ND(0.18)	NA	ND(0.21)	ND(0.22)	NA	ND(0.22)	NA	ND(0.17)	0.37	NA	0.91	NA	ND(0.5)	ND(0.18)
2-Methylnaphthalene	5000	0.7	NS	NS	NS	0.7	mg/kg	ND(0.22)	NA	ND(0.25)	ND(0.26)	NA	ND(0.26)	NA	ND(0.21)	ND(0.24)	NA	ND(0.55)	NA	ND(0.6)	ND(0.21)	
Acetophenone	1000	1000	NS	NS	NS	NS	NS	mg/kg	ND(0.18)	NA	ND(0.21)	ND(0.22)	NA	ND(0.22)	NA	ND(0.						

TABLE 1 - SUMMARY OF SOIL ANALYTICAL RESULTS

SUFFOLK DOWNS

525 WILLIAM F. MCCLELLAN HIGHWAY

BOSTON, MASSACHUSETTS 02128

VERTEX PROJECT NO. 43068

LOCATION	SAMPLING DATE	MCP Upper Concentration Limits (UCLs)	MCP Reportable Concentration RCS-1	MA Aggregate Recycling Criteria	MA Lined Landfill Criteria (LLF)	MA Unlined Landfill Criteria (ULF)	MA Similar Soils RCS-1 (Similar Soils)	Units	VES-109 (0-2)	VES-110 (0-2)	VES-110 (2-4)	VES-110 (12-14)	VES-111 (0-2)	VES-111 (2-4)	VES-112 (0-1)	VES-112 (1-2)	VES-113 (2-4)	VES-114 (0-2)	VES-114 (2-4)	VES-115 (0-2)	VES-115 (2-4)	VES-116 (2-4)	
SAMPLE TYPE									2/10/2017	2/14/2017	2/14/2017	2/14/2017	2/14/2017	2/14/2017	2/17/2017	2/17/2017	2/15/2017	2/15/2017	2/15/2017	2/15/2017	2/15/2017	2/17/2017	
FILL OR NATIVE SOIL									L1704354-06	L1704357-03	L1704637-04	L1704637-05	L1704637-06	L1704637-07	L1705147-05	L1705147-06	L1704816-01	L1704816-05	L1704816-06	L1704816-07	L1704816-08	L1705147-04	
SOIL MANAGEMENT CLASSIFICATION									SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	
SAMPLE DEPTH (FEET bgs)									Similar Soils	N/A	Similar Soils	Similar Soils	N/A	Similar Soils*	N/A	Similar Soils	OOSLF*	N/A	LLF*	N/A	Similar Soils*	Similar Soils	2-4
Vinyl chloride	600	0.7	NS	NS	NS	NS	mg/kg	ND(0.0014)	NA	ND(0.0015)	ND(0.0016)	NA	ND(0.0022)	NA	ND(0.0017)	ND(0.0018)	NA	ND(0.002)	NA	ND(0.0019)	ND(0.0013)		
Chloroethane	1000	100	NS	NS	NS	NS	mg/kg	ND(0.0014)	NA	ND(0.0015)	ND(0.0016)	NA	ND(0.0022)	NA	ND(0.0017)	ND(0.0018)	NA	ND(0.002)	NA	ND(0.0019)	ND(0.0013)		
1,1-Dichloroethene	10000	3	NS	NS	NS	NS	mg/kg	ND(0.0073)	NA	ND(0.0075)	ND(0.0079)	NA	ND(0.0011)	NA	ND(0.0087)	ND(0.0093)	NA	ND(0.001)	NA	ND(0.0097)	ND(0.0066)		
trans-1,2-Dichloroethene	10000	1	NS	NS	NS	NS	mg/kg	ND(0.011)	NA	ND(0.0011)	ND(0.0012)	NA	ND(0.0017)	NA	ND(0.0013)	ND(0.014)	NA	ND(0.0015)	NA	ND(0.0015)	ND(0.0098)		
Trichloroethene	600	0.3	NS	NS	NS	NS	mg/kg	ND(0.0073)	NA	ND(0.0075)	ND(0.0079)	NA	ND(0.0011)	NA	ND(0.0087)	ND(0.0093)	NA	ND(0.001)	NA	ND(0.0097)	ND(0.0066)		
1,2-Dichlorobenzene	10000	9	NS	NS	NS	NS	mg/kg	ND(0.029)	NA	ND(0.003)	ND(0.0032)	NA	ND(0.0045)	NA	ND(0.035)	ND(0.037)	NA	ND(0.004)	NA	ND(0.039)	ND(0.026)		
1,3-Dichlorobenzene	5000	3	NS	NS	NS	NS	mg/kg	ND(0.029)	NA	ND(0.003)	ND(0.0032)	NA	ND(0.0045)	NA	ND(0.035)	ND(0.037)	NA	ND(0.004)	NA	ND(0.039)	ND(0.026)		
1,4-Dichlorobenzene	10000	0.7	NS	NS	NS	NS	mg/kg	ND(0.029)	NA	ND(0.003)	ND(0.0032)	NA	ND(0.0045)	NA	ND(0.035)	ND(0.037)	NA	ND(0.004)	NA	ND(0.039)	ND(0.026)		
Methyl tert butyl ether	5000	0.1	NS	NS	NS	NS	mg/kg	ND(0.014)	NA	ND(0.0015)	ND(0.0016)	NA	ND(0.0022)	NA	ND(0.0017)	ND(0.0018)	NA	ND(0.002)	NA	ND(0.019)	ND(0.0013)		
p/m-Xylene	NS	NS	NS	NS	NS	NS	mg/kg	ND(0.014)	NA	ND(0.0015)	ND(0.0016)	NA	ND(0.0022)	NA	ND(0.0017)	ND(0.0018)	NA	ND(0.002)	NA	ND(0.019)	ND(0.0013)		
o-Xylene	NS	NS	NS	NS	NS	NS	mg/kg	ND(0.014)	NA	ND(0.0015)	ND(0.0016)	NA	ND(0.0022)	NA	ND(0.0017)	ND(0.0018)	NA	ND(0.002)	NA	ND(0.019)	ND(0.0013)		
Xylenes, Total	10000	100	NS	NS	NS	NS	mg/kg	ND(0.014)	NA	ND(0.0015)	ND(0.0016)	NA	ND(0.0022)	NA	ND(0.0017)	ND(0.0018)	NA	ND(0.002)	NA	ND(0.019)	ND(0.0013)		
cis-1,2-Dichloroethene	5000	0.1	NS	NS	NS	NS	mg/kg	ND(0.0073)	NA	ND(0.0075)	ND(0.0079)	NA	ND(0.0011)	NA	ND(0.0087)	ND(0.0093)	NA	ND(0.001)	NA	ND(0.0097)	ND(0.0066)		
1,2-Dichloroethene, Total	1000	NS	NS	NS	NS	NS	mg/kg	ND(0.0073)	NA	ND(0.0075)	ND(0.0079)	NA	ND(0.0011)	NA	ND(0.0087)	ND(0.0093)	NA	ND(0.001)	NA	ND(0.0097)	ND(0.0066)		
Dibromomethane	1000	500	NS	NS	NS	NS	mg/kg	ND(0.029)	NA	ND(0.003)	ND(0.0032)	NA	ND(0.0045)	NA	ND(0.0035)	ND(0.0037)	NA	ND(0.004)	NA	ND(0.039)	ND(0.026)		
1,2,3-Trichloropropane	1000	100	NS	NS	NS	NS	mg/kg	ND(0.029)	NA	ND(0.003)	ND(0.0032)	NA	ND(0.0045)	NA	ND(0.0035)	ND(0.0037)	NA	ND(0.004)	NA	ND(0.039)	ND(0.026)		
Styrene	10000	3	NS	NS	NS	NS	mg/kg	ND(0.014)	NA	ND(0.0015)	ND(0.0016)	NA	ND(0.0022)	NA	ND(0.0017)	ND(0.0018)	NA	ND(0.002)	NA	ND(0.019)	ND(0.013)		
Dichlorodifluoromethane	1000	1000	NS	NS	NS	NS	mg/kg	ND(0.0073)	NA	ND(0.0075)	ND(0.0079)	NA	ND(0.011)	NA	ND(0.0087)	ND(0.0093)	NA	ND(0.001)	NA	ND(0.0097)	ND(0.0066)		
Acetone	10000	6	NS	NS	NS	NS	mg/kg	ND(0.026)	NA	0.5 E	ND(0.028)	NA	ND(0.04)	NA	ND(0.031)	0.041	NA	ND(0.036)	NA	ND(0.035)	ND(0.024)		
Carbon disulfide	1000	100	NS	NS	NS	NS	mg/kg	ND(0.029)	NA	ND(0.003)	0.073	NA	ND(0.045)	NA	ND(0.035)	ND(0.037)	NA	ND(0.04)	NA	ND(0.039)	ND(0.026)		
Methyl ethyl ketone	10000	4	NS	NS	NS	NS	mg/kg	ND(0.073)	NA	0.087	ND(0.0079)	NA	ND(0.011)	NA	ND(0.0087)	ND(0.0093)	NA	ND(0.01)	NA	ND(0.0097)	ND(0.0066)		
Methyl isobutyl ketone	10000	0.4	NS	NS	NS	NS	mg/kg	ND(0.073)	NA	ND(0.0075)	ND(0.0079)	NA	ND(0.011)	NA	ND(0.0087)	ND(0.0093)	NA	ND(0.01)	NA	ND(0.0097)	ND(0.0066)		
2-Hexanone	1000	100	NS	NS	NS	NS	mg/kg	ND(0.073)	NA	ND(0.0075)	ND(0.0079)	NA	ND(0.011)	NA	ND(0.0087)	ND(0.0093)	NA	ND(0.01)	NA	ND(0.0097)	ND(0.0066)		
Bromochloromethane	1000	NS	NS	NS	NS	NS	mg/kg	ND(0.029)	NA	ND(0.003)	ND(0.0032)	NA	ND(0.045)	NA	ND(0.035)	ND(0.037)	NA	ND(0.04)	NA	ND(0.039)	ND(0.026)		
Tetrahydrofuran	1000	500	NS	NS	NS	NS	mg/kg	ND(0.029)	NA	ND(0.003)	ND(0.0032)	NA	ND(0.045)	NA	ND(0.035)	ND(0.037)	NA	ND(0.04)	NA	ND(0.039)	ND(0.026)		
2,2-Dichloropropane	1000	NS	NS	NS	NS	NS	mg/kg	ND(0.036)	NA	ND(0.0037)	ND(0.004)	NA	ND(0.0056)	NA	ND(0.044)	ND(0.046)	NA	ND(0.005)	NA	ND(0.049)	ND(0.033)		
1,2-Dibromoethane	400	0.1	NS	NS	NS	NS	mg/kg	ND(0.029)	NA	ND(0.003)	ND(0.0032)	NA	ND(0.045)	NA	ND(0.035)	ND(0.037)	NA	ND(0.04)	NA	ND(0.039)	ND(0.026)		
1,2,3-Dichloropropane	1000	500	NS	NS	NS	NS	mg/kg	ND(0.029)	NA	ND(0.003)	ND(0.0032)	NA	ND(0.045)	NA	ND(0.035)	ND(0.037)	NA	ND(0.04)	NA	ND(0.039)	ND(0.026)		
1,1,1,2-Tetrachloroethane	5000	0.1	NS	NS	NS	NS	mg/kg	ND(0.0073)	NA	ND(0.0075)	ND(0.0079)	NA	ND(0.011)	NA	ND(0.0087)	ND(0.0093)	NA	ND(0.001)	NA	ND(0			

TABLE 1 - SUMMARY OF SOIL ANALYTICAL RESULTS

SUFFOLK DOWNS

525 WILLIAM F. MCCLELLAN HIGHWAY

BOSTON, MASSACHUSETTS 02128

VERTEX PROJECT NO. 43068

LOCATION	MCP Upper Concentration Limits (UCLs)	MCP Reportable Concentration RCS-1	MA Aggregate Recycling Criteria	MA Lined Landfill Criteria (LLF)	MA Unlined Landfill Criteria (ULF)	MA Similar Soils RCS-1 (Similar Soils)	Units	VES-117 (2-4)	VES-118 (0-2)	VES-118 (2-4)	VES-118 (22-24)	VES-119 (0-2)	VES-120 (1-2)	VES-121 (0-2)	VES-121 (14-15)	VES-122 (3-5)	VES-123 (0-2)	VES-124 (0-2)	VES-124 (3-5)	VES-124 (18-20)
SAMPLING DATE								2/15/2017	2/15/2017	2/15/2017	2/15/2017	2/10/2017	2/7/2017	2/7/2017	2/15/2017	2/10/2017	2/17/2017	2/17/2017	2/17/2017	2/17/2017
LAB SAMPLE ID								L1704816-02	L1704816-10	L1704816-11	L1704816-09	L1704354-05	L1703861-03	L1703861-01	L1704816-02	L1704816-03	L1704354-04	L1705147-01	L1705147-02	L1705147-03
SAMPLE TYPE								SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
FILL OR NATIVE SOIL								FILL	FILL	FILL	NATIVE	FILL	FILL	NATIVE	FILL	FILL	FILL	FILL	NATIVE	
SOIL MANAGEMENT CLASSIFICATION								LLF*	N/A	ULF*	LLF*	ULF*	Similar Soils	Similar Soils	ULF*	Similar Soils	N/A	LLF*	Similar Soils	N/A
SAMPLE DEPTH (FEET bgs)								2-4	0-2	2-4	22-24	0-2	1-2	14-15	3-5	0-2	0-2	3-5	18-20	
<b>Extractable Petroleum Hydrocarbons (EPH)</b>																				
C9-C18 Aliphatics	20000	1000	NS	NS	NS	NS	mg/kg	30.2	NA	30.3	96.6	ND(7.92)	ND(7.66)	9.98	11.7	47	ND(7.21)	NA	ND(7.76)	ND(8.28)
C19-C36 Aliphatics	20000	3000	NS	NS	NS	NS	mg/kg	936	NA	280	556	ND(7.92)	ND(7.66)	78	85.5	225	ND(7.21)	NA	24.5	ND(8.28)
C11-C22 Aromatics	10000	1000	NS	NS	NS	NS	mg/kg	502	NA	226	256	30.8	ND(7.66)	36	101	84.4	7.44	NA	60.7	ND(8.28)
C11-C22 Aromatics, Adjusted	10000	1000	NS	NS	NS	NS	mg/kg	461	NA	182	205	25.2	ND(7.66)	35.6	79.8	80.9	7.44	NA	39.8	ND(8.28)
Naphthalene	10000	4	NS	NS	NS	NS	mg/kg	ND(0.441)	NA	ND(0.4)	ND(0.396)	NA	NA	NA	ND(0.414)	ND(0.36)	NA	ND(0.388)	ND(0.414)	
2-Methylnaphthalene	5000	0.7	NS	NS	NS	0.7	mg/kg	ND(0.441)	NA	ND(0.4)	ND(0.396)	NA	NA	NA	ND(0.414)	ND(0.36)	NA	ND(0.388)	ND(0.414)	
Acenaphthylene	10000	1	NS	NS	NS	1	mg/kg	ND(0.441)	NA	ND(0.4)	ND(0.396)	NA	NA	NA	ND(0.414)	ND(0.36)	NA	ND(0.388)	ND(0.414)	
Acenaphthene	10000	4	NS	NS	NS	4	mg/kg	ND(0.441)	NA	0.632	ND(0.396)	NA	NA	NA	ND(0.414)	ND(0.36)	NA	ND(0.388)	ND(0.414)	
Fluorene	10000	1000	NS	NS	NS	10	mg/kg	ND(0.441)	NA	0.648	ND(0.396)	NA	NA	NA	ND(0.414)	ND(0.36)	NA	ND(0.388)	ND(0.414)	
Phenanthrene	10000	10	NS	NS	NS	10	mg/kg	2.46	NA	5.53	4.99	0.566	NA	NA	0.426	ND(0.36)	NA	1.71	ND(0.414)	
Anthracene	10000	1000	NS	NS	NS	10	mg/kg	0.802	NA	1.46	0.992	ND(0.396)	NA	NA	ND(0.414)	ND(0.36)	NA	0.398	ND(0.414)	
Fluoranthene	10000	1000	NS	NS	NS	40	mg/kg	5.51	NA	7.22	7.07	0.958	NA	NA	0.747	ND(0.36)	NA	3.32	ND(0.414)	
Pyrene	10000	1000	NS	NS	NS	40	mg/kg	5.65	NA	6.16	6.17	0.91	NA	NA	0.714	ND(0.36)	NA	3.18	ND(0.414)	
Benzo(a)anthracene	3000	7	NS	NS	NS	7	mg/kg	3.36	NA	3.75	5.12	0.557	NA	NA	0.499	ND(0.36)	NA	2	ND(0.414)	
Chrysene	10000	70	NS	NS	NS	20	mg/kg	4.15	NA	4.29	6.21	0.636	NA	NA	0.625	ND(0.36)	NA	2.27	ND(0.414)	
Benzo(b)fluoranthene	3000	7	NS	NS	NS	7	mg/kg	3.74	NA	2.93	4.28	0.487	NA	NA	ND(0.414)	ND(0.36)	NA	1.75	ND(0.414)	
Benzo(k)fluoranthene	10000	70	NS	NS	NS	10	mg/kg	3.43	NA	2.91	3.99	0.525	NA	NA	ND(0.414)	ND(0.36)	NA	1.56	ND(0.414)	
Benzo(a)pyrene	300	2	NS	NS	NS	2	mg/kg	4.19	NA	3.43	4.69	0.548	NA	NA	0.487	ND(0.36)	NA	1.84	ND(0.414)	
Indeno(1,2,3-cd)Pyrene	3000	7	NS	NS	NS	7	mg/kg	2.47	NA	2.48	3.48	0.418	NA	NA	ND(0.414)	ND(0.36)	NA	1.21	ND(0.414)	
Dibenzo(a,h)anthracene	300	0.7	NS	NS	NS	0.7	mg/kg	0.873	NA	0.695	0.9	ND(0.396)	NA	NA	ND(0.414)	ND(0.36)	NA	0.525	ND(0.414)	
Benzo(ghi)perylene	10000	1000	NS	NS	NS	10	mg/kg	4.04	NA	2.18	3.07	ND(0.396)	NA	NA	ND(0.414)	ND(0.36)	NA	1.15	ND(0.414)	
<b>General Chemistry</b>																				
Specific Conductance @ 25 C	NS	NS	NS	8000	4000	NS	umhos/cm	81	NA	140	110	22	55	ND(10)	160	ND(10)	43	NA	36	ND(10)
Solids, Total	NS	NS	NS	NS	NS	NS	%	73.4	83.1	79.9	44.5	83.8	84	89.8	68.4	77.3	91.3	92.5	84	78.2
pH (H)	NS	NS	NS	NS	NS	NS	SU	7.3	NA	7.2	7	7.2	6.7	7.4	8.1	6.8	8	NA	7.4	8.2
Cyanide, Reactive	NS	NS	250	NS	250	NS	mg/kg	ND(10)	NA	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)
Sulfide, Reactive	NS	NS	500	NS	500	NS	mg/kg	ND(10)	NA	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)
<b>Ignitability of Solids</b>																				
Ignitability	NS	NS	NS	NS	NS	NS	NI	NI	NA	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	
<b>MCP Organochlorine Pesticides</b>																				
Delta-BHC	1000	10	NS	NS	NS	NS	mg/kg	NA	ND(0.00926)	NA	NA	NA	NA	NA	NA	ND(0.00826)	NA	NA	NA	
Lindane	600	0.003	NS	NS	NS	NS	mg/kg	NA	ND(0.00308)	NA	NA	NA	NA	NA	NA	ND(0.00275)	NA	ND(0.0392)	ND(0.0416)	
Alpha-BHC	1000	50	NS	NS	NS	NS	mg/kg	NA	ND(0.00386)	NA	NA	NA	NA	NA	NA	ND(0.00344)	NA	ND(0.0392)	ND(0.0416)	
Beta-BHC	1000																			

TABLE 1 - SUMMARY OF SOIL ANALYTICAL RESULTS

SUFFOLK DOWNS

525 WILLIAM F. MCCLELLAN HIGHWAY

BOSTON, MASSACHUSETTS 02128

VERTEX PROJECT NO. 43068

LOCATION	MCP Upper Concentration Limits (UCLs)	MCP Reportable Concentration RCS-1	MA Aggregate Recycling Criteria	MA Lined Landfill Criteria (LLF)	MA Unlined Landfill Criteria (ULF)	MA Similar Soils RCS-1 (Similar Soils)	Units	VES-117 (2-4)	VES-118 (0-2)	VES-118 (2-4)	VES-118 (22-24)	VES-119 (0-2)	VES-120 (1-2)	VES-121 (0-2)	VES-121 (14-15)	VES-122 (3-5)	VES-123 (0-2)	VES-124 (0-2)	VES-124 (3-5)	VES-124 (18-20)	
SAMPLING DATE								2/15/2017	2/15/2017	2/15/2017	2/15/2017	2/10/2017	2/7/2017	2/7/2017	2/15/2017	2/10/2017	2/17/2017	2/17/2017	2/17/2017	2/17/2017	
LAB SAMPLE ID				L1704816-02	L1704816-10	L1704816-11		L1704816-09	L1704354-05	L1703861-03	L1703861-01	L1703861-02	L1704816-03	L1704354-04	L1705147-01	L1705147-02	L1705147-03				
SAMPLE TYPE								SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	
FILL OR NATIVE SOIL								FILL	FILL	FILL	NATIVE	FILL	FILL	NATIVE	FILL	FILL	FILL	FILL	NATIVE		
SOIL MANAGEMENT CLASSIFICATION								LLF*	N/A	ULF*	LLF*	ULF*	Similar Soils	Similar Soils	ULF*	Similar Soils	N/A	LLF*	Similar Soils		
SAMPLE DEPTH (FEET bgs)								2-4	0-2	2-4	22-24	0-2	1-2	0-2	14-15	3-5	0-2	0-2	3-5	18-20	
Bis(2-chloroethoxy)methane	1000	500	NS	NS	NS	NS	mg/kg	ND(0.24)	NA	ND(0.22)	ND(0.6)	ND(0.21)	ND(0.21)	ND(0.2)	ND(0.26)	ND(0.23)	ND(0.19)	NA	ND(0.21)	ND(0.23)	
Hexachlorobutadiene	1000	30	NS	NS	NS	NS	mg/kg	ND(0.22)	NA	ND(0.2)	ND(0.56)	ND(0.19)	ND(0.19)	ND(0.18)	ND(0.24)	ND(0.21)	ND(0.18)	NA	ND(0.2)	ND(0.21)	
Hexachloroethane	2000	0.7	NS	NS	NS	NS	mg/kg	ND(0.18)	NA	ND(0.16)	ND(0.44)	ND(0.16)	ND(0.15)	ND(0.14)	ND(0.19)	ND(0.17)	ND(0.16)	NA	ND(0.16)	ND(0.17)	
Isophorone	1000	100	NS	NS	NS	NS	mg/kg	ND(0.2)	NA	ND(0.18)	ND(0.5)	ND(0.17)	ND(0.17)	ND(0.16)	ND(0.21)	ND(0.19)	ND(0.16)	NA	ND(0.18)	ND(0.19)	
Naphthalene	10000	4	NS	NS	NS	NS	mg/kg	0.22	NA	ND(0.2)	ND(0.56)	ND(0.19)	ND(0.19)	ND(0.18)	ND(0.24)	ND(0.21)	ND(0.18)	NA	ND(0.2)	ND(0.21)	
Nitrobenzene	1000	500	NS	NS	NS	NS	mg/kg	ND(0.2)	NA	ND(0.18)	ND(0.5)	ND(0.17)	ND(0.17)	ND(0.16)	ND(0.21)	ND(0.19)	ND(0.16)	NA	ND(0.18)	ND(0.19)	
Bis(2-ethylhexyl)phthalate	10000	90	NS	NS	NS	NS	mg/kg	ND(0.22)	NA	ND(0.2)	ND(0.56)	ND(0.19)	ND(0.19)	ND(0.18)	ND(0.24)	ND(0.21)	ND(0.18)	NA	ND(0.2)	ND(0.21)	
Butyl benzyl phthalate	1000	100	NS	NS	NS	NS	mg/kg	ND(0.22)	NA	ND(0.2)	ND(0.56)	ND(0.19)	ND(0.19)	ND(0.18)	ND(0.24)	ND(0.21)	ND(0.18)	NA	ND(0.2)	ND(0.21)	
Di-n-butylphthalate	1000	50	NS	NS	NS	NS	mg/kg	ND(0.22)	NA	ND(0.2)	ND(0.56)	ND(0.19)	ND(0.19)	ND(0.18)	ND(0.24)	ND(0.21)	ND(0.18)	NA	ND(0.2)	ND(0.21)	
Di-n-octylphthalate	1000	1000	NS	NS	NS	NS	mg/kg	ND(0.22)	NA	ND(0.2)	ND(0.56)	ND(0.19)	ND(0.19)	ND(0.18)	ND(0.24)	ND(0.21)	ND(0.18)	NA	ND(0.2)	ND(0.21)	
Diethyl phthalate	10000	10	NS	NS	NS	NS	mg/kg	ND(0.22)	NA	ND(0.2)	ND(0.56)	ND(0.19)	ND(0.19)	ND(0.18)	ND(0.24)	ND(0.21)	ND(0.18)	NA	ND(0.2)	ND(0.21)	
Dimethyl phthalate	10000	0.7	NS	NS	NS	NS	mg/kg	ND(0.22)	NA	ND(0.2)	ND(0.56)	ND(0.19)	ND(0.19)	ND(0.18)	ND(0.24)	ND(0.21)	ND(0.18)	NA	ND(0.2)	ND(0.21)	
Benzo(a)anthracene	3000	7	NS	NS	NS	7	mg/kg	1.1	NA	0.9	0.96	0.6	ND(0.12)	0.15	0.16	ND(0.13)	NA	2.1	ND(0.13)		
Benzo(a)pyrene	300	2	NS	NS	NS	2	mg/kg	1.4	NA	0.91	1.1	0.69	ND(0.15)	0.17	ND(0.19)	ND(0.17)	NA	1.9	ND(0.17)		
Benzo(b)fluoranthene	3000	7	NS	NS	NS	7	mg/kg	1.6	NA	1.1	0.86	ND(0.12)	0.21	0.17	ND(0.11)	NA	2.4	ND(0.13)			
Benzo(k)fluoranthene	10000	70	NS	NS	NS	10	mg/kg	0.5	NA	0.38	0.4	0.24	ND(0.12)	ND(0.11)	ND(0.14)	ND(0.13)	NA	0.8	ND(0.13)		
Chrysene	10000	70	NS	NS	NS	20	mg/kg	1.2	NA	0.99	1.1	0.64	ND(0.12)	0.17	0.18	0.14	ND(0.11)	NA	1.9	ND(0.13)	
Acenaphthylene	10000	1	NS	NS	NS	1	mg/kg	ND(0.18)	NA	ND(0.16)	ND(0.44)	ND(0.16)	ND(0.15)	ND(0.14)	ND(0.19)	ND(0.17)	NA	ND(0.16)	ND(0.17)		
Anthracene	10000	1000	NS	NS	NS	10	mg/kg	0.26	NA	0.25	ND(0.33)	0.14	ND(0.12)	ND(0.11)	ND(0.14)	ND(0.13)	NA	0.56	ND(0.13)		
Benzo(ghi)perylene	10000	1000	NS	NS	NS	10	mg/kg	1	NA	0.57	0.7	0.44	ND(0.15)	ND(0.14)	ND(0.19)	ND(0.17)	NA	0.99	ND(0.17)		
Fluorene	10000	1000	NS	NS	NS	10	mg/kg	ND(0.22)	NA	ND(0.2)	ND(0.56)	ND(0.19)	ND(0.19)	ND(0.18)	ND(0.24)	ND(0.21)	ND(0.18)	NA	ND(0.2)	ND(0.21)	
Phenanthrene	10000	10	NS	NS	NS	10	mg/kg	0.75	NA	0.88	1.1	0.63	ND(0.12)	0.14	0.35	ND(0.13)	ND(0.11)	NA	1.9	ND(0.13)	
Dibenz(a,h)anthracene	300	0.7	NS	NS	NS	0.7	mg/kg	0.32	NA	0.15	ND(0.33)	0.12	ND(0.12)	ND(0.11)	ND(0.14)	ND(0.13)	NA	0.29	ND(0.13)		
Indeno(1,2,3-cd)pyrene	3000	7	NS	NS	NS	7	mg/kg	0.88	NA	0.57	0.68	0.47	ND(0.15)	ND(0.14)	ND(0.19)	ND(0.17)	NA	1.2	ND(0.17)		
Pyrene	10000	1000	NS	NS	NS	40	mg/kg	1.8	NA	1.6	1.7	0.99	ND(0.12)	0.28	0.35	0.17	ND(0.11)	NA	3.4	ND(0.13)	
Aniline	1000	1000	NS	NS	NS	NS	mg/kg	ND(0.26)	NA	ND(0.24)	ND(0.67)	ND(0.23)	ND(0.23)	ND(0.22)	ND(0.29)	ND(0.26)	ND(0.21)	NA	ND(0.24)	ND(0.25)	
4-Chloroaniline	400	1	NS	NS	NS	NS	mg/kg	ND(0.22)	NA	ND(0.2)	ND(0.56)	ND(0.19)	ND(0.19)	ND(0.18)	ND(0.24)	ND(0.21)	ND(0.18)	NA	ND(0.2)	ND(0.21)	
Dibenzofuran	1000	100	NS	NS	NS	NS	mg/kg	ND(0.22)	NA	ND(0.2)	ND(0.56)	ND(0.19)	ND(0.19)	ND(0.18)	ND(0.24)	ND(0.21)	ND(0.18)	NA	ND(0.2)	ND(0.21)	
2-Methylnaphthalene	5000	0.7	NS	NS	NS	0.7	mg/kg	ND(0.26)	NA	ND(0.24)	ND(0.67)	ND(0.23)	ND(0.23)	ND(0.22)	ND(0.29)	ND(0.26)	ND(0.21)	NA	ND(0.24)	ND(0.25)	
Acetophenone	1000	1000	NS	NS	NS	NS	mg/kg	ND(0.22)	NA	ND(0.2)	ND(0.56)	ND(0.19)	ND(0.19)	ND(0.18)	ND(0.24)	ND(0.21)	ND(0.18)	NA	ND(0.2)	ND(0.21)	
2,4,6-Trichlorophenol	4000	0.7	NS	NS	NS	NS	mg/kg	ND(0.13)	NA	ND(0.12)	ND(0.33)	ND(0.12)	ND(0.12)	ND(0.11)	ND(0.14)	ND(0.13)	ND(0.11)	NA			

**TABLE 1 - SUMMARY OF SOIL ANALYTICAL RESULTS**  
**SUFFOLK DOWNS**  
**525 WILLIAM F. MCCLELLAN HIGHWAY**  
**BOSTON, MASSACHUSETTS 02128**  
**VERTEX PROJECT NO. 43068**

LOCATION	MCP Upper Concentration Limits (UCLs)	MCP Reportable Concentration RCS-1	MA Aggregate Recycling Criteria	MA Lined Landfill Criteria (LLF)	MA Unlined Landfill Criteria (ULF)	MA Similar Soils RCS-1 (Similar Soils)	Units	VES-117 (2-4)	VES-118 (0-2)	VES-118 (2-4)	VES-118 (22-24)	VES-119 (0-2)	VES-120 (1-2)	VES-121 (0-2)	VES-121 (14-15)	VES-122 (3-5)	VES-123 (0-2)	VES-124 (0-2)	VES-124 (3-5)	VES-124 (18-20)
SAMPLING DATE								2/15/2017	2/15/2017	2/15/2017	2/15/2017	2/10/2017	2/7/2017	2/7/2017	2/15/2017	2/10/2017	2/15/2017	2/10/2017	2/17/2017	2/17/2017
LAB SAMPLE ID								L1704816-02	L1704816-10	L1704816-11	L1704816-09	L1704354-05	L1703861-03	L1703861-01	L1704816-02	L1704816-03	L1704354-04	L1705147-01	L1705147-02	L1705147-03
SAMPLE TYPE								SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
FILL OR NATIVE SOIL								FILL	FILL	FILL	NATIVE	FILL	FILL	NATIVE	FILL	FILL	FILL	FILL	NATIVE	
SOIL MANAGEMENT CLASSIFICATION								LLF*	N/A	ULF*	LLF*	ULF*	Similar Soils	Similar Soils	ULF*	Similar Soils	N/A	LLF*	Similar Soils	
SAMPLE DEPTH (FEET bgs)								2-4	0-2	2-4	22-24	0-2	1-2	0-2	14-15	3-5	0-2	0-2	3-5	18-20
Vinyl chloride	600	0.7	NS	NS	NS	NS	mg/kg	ND(0.0026)	NA	ND(0.0017)	ND(0.0038)	ND(0.0028)	ND(0.0015)	ND(0.0022)	ND(0.0018)	ND(0.002)	ND(0.0025)	NA	ND(0.0018)	ND(0.0019)
Chloroethane	1000	100	NS	NS	NS	NS	mg/kg	ND(0.0026)	NA	ND(0.0017)	ND(0.0038)	ND(0.0028)	ND(0.0015)	ND(0.0022)	ND(0.0018)	ND(0.002)	ND(0.0025)	NA	ND(0.0018)	ND(0.0019)
1,1-Dichloroethene	10000	3	NS	NS	NS	NS	mg/kg	ND(0.0013)	NA	ND(0.00084)	ND(0.0019)	ND(0.0014)	ND(0.00074)	ND(0.0011)	ND(0.00088)	ND(0.001)	ND(0.0012)	NA	ND(0.0009)	ND(0.00094)
trans-1,2-Dichloroethene	10000	1	NS	NS	NS	NS	mg/kg	ND(0.0019)	NA	ND(0.0013)	ND(0.0028)	ND(0.0021)	ND(0.0011)	ND(0.0016)	ND(0.0013)	ND(0.0015)	ND(0.0019)	NA	ND(0.0014)	ND(0.0014)
Trichloroethene	600	0.3	NS	NS	NS	NS	mg/kg	ND(0.0013)	NA	ND(0.00084)	ND(0.0019)	ND(0.0014)	ND(0.00074)	ND(0.0011)	ND(0.00088)	ND(0.001)	ND(0.0012)	NA	ND(0.0009)	ND(0.00094)
1,2-Dichlorobenzene	10000	9	NS	NS	NS	NS	mg/kg	ND(0.0051)	NA	ND(0.0034)	ND(0.0076)	ND(0.0057)	ND(0.003)	ND(0.0044)	ND(0.0035)	ND(0.004)	ND(0.005)	NA	ND(0.0036)	ND(0.0038)
1,3-Dichlorobenzene	5000	3	NS	NS	NS	NS	mg/kg	ND(0.0051)	NA	ND(0.0034)	ND(0.0076)	ND(0.0057)	ND(0.003)	ND(0.0044)	ND(0.0035)	ND(0.004)	ND(0.005)	NA	ND(0.0036)	ND(0.0038)
1,4-Dichlorobenzene	10000	0.7	NS	NS	NS	NS	mg/kg	ND(0.0051)	NA	ND(0.0034)	ND(0.0076)	ND(0.0057)	ND(0.003)	ND(0.0044)	ND(0.0035)	ND(0.004)	ND(0.005)	NA	ND(0.0036)	ND(0.0038)
Methyl tert butyl ether	5000	0.1	NS	NS	NS	NS	mg/kg	ND(0.0026)	NA	ND(0.0017)	ND(0.0038)	ND(0.0028)	ND(0.0015)	ND(0.0022)	ND(0.0018)	ND(0.002)	ND(0.0025)	NA	ND(0.0018)	ND(0.0019)
p/m-Xylene	NS	NS	NS	NS	NS	NS	mg/kg	ND(0.0026)	NA	ND(0.0017)	ND(0.0038)	ND(0.0028)	ND(0.0015)	ND(0.0022)	ND(0.0018)	ND(0.002)	ND(0.0025)	NA	ND(0.0018)	ND(0.0019)
o-Xylene	NS	NS	NS	NS	NS	NS	mg/kg	ND(0.0026)	NA	ND(0.0017)	ND(0.0038)	ND(0.0028)	ND(0.0015)	ND(0.0022)	ND(0.0018)	ND(0.002)	ND(0.0025)	NA	ND(0.0018)	ND(0.0019)
Xylenes, Total	10000	100	NS	NS	NS	NS	mg/kg	ND(0.0026)	NA	ND(0.0017)	ND(0.0038)	ND(0.0028)	ND(0.0015)	ND(0.0022)	ND(0.0018)	ND(0.002)	ND(0.0025)	NA	ND(0.0018)	ND(0.0019)
cis-1,2-Dichloroethene	5000	0.1	NS	NS	NS	NS	mg/kg	ND(0.0013)	NA	ND(0.00084)	ND(0.0019)	ND(0.0014)	ND(0.00074)	ND(0.0011)	ND(0.00088)	ND(0.001)	ND(0.0012)	NA	ND(0.0009)	ND(0.00094)
1,2-Dichloroethene, Total	1000	NS	NS	NS	NS	NS	mg/kg	ND(0.0013)	NA	ND(0.00084)	ND(0.0019)	ND(0.0014)	ND(0.00074)	ND(0.0011)	ND(0.00088)	ND(0.001)	ND(0.0012)	NA	ND(0.0009)	ND(0.00094)
Dibromomethane	1000	500	NS	NS	NS	NS	mg/kg	ND(0.0051)	NA	ND(0.0034)	ND(0.0076)	ND(0.0057)	ND(0.003)	ND(0.0044)	ND(0.0035)	ND(0.004)	ND(0.005)	NA	ND(0.0036)	ND(0.0038)
1,2,3-Trichloropropane	1000	100	NS	NS	NS	NS	mg/kg	ND(0.0051)	NA	ND(0.0034)	ND(0.0076)	ND(0.0057)	ND(0.003)	ND(0.0044)	ND(0.0035)	ND(0.004)	ND(0.005)	NA	ND(0.0036)	ND(0.0038)
Styrene	10000	3	NS	NS	NS	NS	mg/kg	ND(0.0026)	NA	ND(0.0017)	ND(0.0038)	ND(0.0028)	ND(0.0015)	ND(0.0022)	ND(0.0018)	ND(0.002)	ND(0.0025)	NA	ND(0.0018)	ND(0.0019)
Dichlorodifluoromethane	1000	1000	NS	NS	NS	NS	mg/kg	ND(0.013)	NA	ND(0.0084)	ND(0.019)	ND(0.014)	ND(0.0074)	ND(0.011)	ND(0.0088)	ND(0.001)	ND(0.0012)	NA	ND(0.0009)	ND(0.00094)
Acetone	10000	6	NS	NS	NS	NS	mg/kg	0.16	NA	ND(0.03)	1.3	ND(0.051)	ND(0.027)	ND(0.039)	ND(0.032)	ND(0.045)	NA	ND(0.032)	ND(0.034)	
Carbon disulfide	1000	100	NS	NS	NS	NS	mg/kg	ND(0.0051)	NA	ND(0.0034)	0.095	ND(0.057)	ND(0.003)	ND(0.044)	ND(0.035)	ND(0.04)	ND(0.005)	NA	ND(0.0036)	0.005
Methyl ethyl ketone	10000	4	NS	NS	NS	NS	mg/kg	0.04	NA	ND(0.0084)	0.44	ND(0.014)	ND(0.0074)	ND(0.011)	ND(0.0088)	ND(0.01)	ND(0.012)	NA	ND(0.009)	ND(0.0094)
Methyl isobutyl ketone	10000	0.4	NS	NS	NS	NS	mg/kg	ND(0.013)	NA	ND(0.0084)	ND(0.019)	ND(0.014)	ND(0.0074)	ND(0.011)	ND(0.0088)	ND(0.01)	ND(0.012)	NA	ND(0.009)	ND(0.0094)
2-Hexanone	1000	100	NS	NS	NS	NS	mg/kg	ND(0.013)	NA	ND(0.0084)	ND(0.019)	ND(0.014)	ND(0.0074)	ND(0.011)	ND(0.0088)	ND(0.01)	ND(0.012)	NA	ND(0.009)	ND(0.0094)
Bromochloromethane	1000	NS	NS	NS	NS	NS	mg/kg	ND(0.0051)	NA	ND(0.0034)	ND(0.0076)	ND(0.0057)	ND(0.003)	ND(0.0044)	ND(0.0035)	ND(0.004)	ND(0.005)	NA	ND(0.0036)	ND(0.0038)
Tetrahydrofuran	1000	500	NS	NS	NS	NS	mg/kg	ND(0.0051)	NA	ND(0.0034)	ND(0.0076)	ND(0.0057)	ND(0.003)	ND(0.0044)	ND(0.0035)	ND(0.004)	ND(0.005)	NA	ND(0.0036)	ND(0.0038)
2,2-Dichloropropane	1000	NS	NS	NS	NS	NS	mg/kg	ND(0.0064)	NA	ND(0.0042)	ND(0.0095)	ND(0.0071)	ND(0.0037)	ND(0.0054)	ND(0.0044)	ND(0.005)	ND(0.0062)	NA	ND(0.0045)	ND(0.0047)
1,2-Dibromoethane	400	0.1	NS	NS	NS	NS	mg/kg	ND(0.0051)	NA	ND(0.0034)	ND(0.0076)	ND(0.0057)	ND(0.003)	ND(0.0044)	ND(0.0035)	ND(0.004)	ND(0.005)	NA	ND(0.0036)	ND(0.0038)
1,3-Dichloropropane	1000	500	NS	NS	NS	NS	mg/kg													

**TABLE 1 - SUMMARY OF SOIL ANALYTICAL RESULTS**  
**SUFFOLK DOWNS**  
**525 WILLIAM F. MCCLELLAN HIGHWAY**  
**BOSTON, MASSACHUSETTS 02128**  
**VERTEX PROJECT NO. 43068**

LOCATION	MCP Upper Concentration Limits (UCLs)	MCP Reportable Concentration RCS-1	MA Aggregate Recycling Criteria	MA Lined Landfill Criteria (LLF)	MA Unlined Landfill Criteria (ULF)	MA Similar Soils RCS-1 (Similar Soils)	Units	VES-125 (0-2)	VES-126 (3-5)	VES-127 (0-2)	VES-127 (2-4)	VES-127 (18-20)	VES-128 (1-2)	VES-129 (0-2)	VES-130 (2-4)	VES-130 (8-10)	VES-131 (0-2)	VES-131 (3-5)	VES-132 (2-3)	VES-133 (0-2)	VES-133 (5-7)	
SAMPLING DATE								2/14/2017	2/15/2017	2/15/2017	2/15/2017	2/15/2017	2/16/2017	2/16/2017	2/16/2017	2/16/2017	2/16/2017	2/16/2017	2/16/2017	2/16/2017	2/16/2017	
LAB SAMPLE ID								L1704637-08	L1704816-04	L1704816-13	L1704816-14	L1704816-12	L1704984-12	L1703745-05	L1704984-03	L1704984-04	L1704984-01	L1704984-02	L1703745-01	L1703745-03	L1703745-04	
SAMPLE TYPE								SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	
FILL OR NATIVE SOIL								FILL	FILL	FILL	FILL	NATIVE	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	
SOIL MANAGEMENT CLASSIFICATION								Similar Soils*	ULF*	N/A	ULF*	Similar Soils	OOSLF*	ULF*	Similar Soils	N/A	Similar Soils	N/A	Similar Soils	N/A	LLF*	5-7
SAMPLE DEPTH (FEET bgs)								0-2	3-5	0-2	2-4	18-20	1-2	0-2	2-4	8-10	0-2	3-5	2-3	0-2	5-7	
<b>Extractable Petroleum Hydrocarbons (EPH)</b>																						
C9-C18 Aliphatics	20000	1000	NS	NS	NS	NS	mg/kg	ND(7.55)	ND(8.68)	NA	ND(9.18)	8.12	10.7	24.7	ND(9.4)	NA	ND(7.52)	ND(7.49)	NA	ND(15.6)		
C19-C36 Aliphatics	20000	3000	NS	NS	NS	NS	mg/kg	148	ND(8.68)	NA	11.3	ND(9.18)	20.7	30.8	104	63.5	NA	ND(7.52)	ND(7.49)	NA	127	
C11-C22 Aromatics	10000	1000	NS	NS	NS	NS	mg/kg	43.5	23.1	NA	17.4	ND(9.18)	123	106	165	NA	7.79	ND(7.49)	NA	475		
C11-C22 Aromatics, Adjusted	10000	1000	NS	NS	NS	NS	mg/kg	42.7	23.1	NA	17.4	ND(9.18)	83.3	78.1	141	54	NA	7.79	ND(7.49)	NA	332	
Naphthalene	10000	4	NS	NS	NS	NS	mg/kg	ND(0.377)	ND(0.434)	NA	ND(0.459)	ND(0.459)	ND(0.358)	NA	ND(0.443)	ND(0.47)	NA	ND(0.376)	NA	NA	NA	
2-Methylnaphthalene	5000	0.7	NS	NS	NS	NS	mg/kg	ND(0.377)	ND(0.434)	NA	ND(0.459)	ND(0.459)	ND(0.358)	NA	ND(0.443)	ND(0.47)	NA	ND(0.376)	NA	NA	NA	
Acenaphthylene	10000	1	NS	NS	NS	NS	mg/kg	ND(0.377)	ND(0.434)	NA	ND(0.459)	ND(0.459)	ND(0.358)	NA	ND(0.443)	ND(0.47)	NA	ND(0.376)	NA	NA	NA	
Acenaphthene	10000	4	NS	NS	NS	NS	mg/kg	ND(0.377)	ND(0.434)	NA	ND(0.459)	ND(0.459)	ND(0.358)	NA	ND(0.443)	ND(0.47)	NA	ND(0.376)	NA	NA	NA	
Fluorene	10000	1000	NS	NS	NS	NS	mg/kg	ND(0.377)	ND(0.434)	NA	ND(0.459)	ND(0.459)	ND(0.358)	NA	ND(0.443)	ND(0.47)	NA	ND(0.376)	NA	NA	NA	
Phanthrene	10000	10	NS	NS	NS	NS	mg/kg	ND(0.377)	ND(0.434)	NA	ND(0.459)	ND(0.459)	ND(0.358)	4	NA	3	0.707	NA	ND(0.376)	NA	NA	
Anthracene	10000	1000	NS	NS	NS	NS	mg/kg	ND(0.377)	ND(0.434)	NA	ND(0.459)	ND(0.459)	1.08	NA	0.745	ND(0.47)	NA	ND(0.376)	NA	NA	NA	
Fluoranthene	10000	1000	NS	NS	NS	NS	mg/kg	0.461	ND(0.434)	NA	ND(0.459)	ND(0.459)	6.61	NA	4.04	1.18	NA	ND(0.376)	NA	NA	NA	
Pyrene	10000	1000	NS	NS	NS	NS	mg/kg	0.388	ND(0.434)	NA	ND(0.459)	ND(0.459)	6.15	NA	3.64	1	NA	ND(0.376)	NA	NA	NA	
Benzo(a)anthracene	3000	7	NS	NS	NS	NS	mg/kg	ND(0.377)	ND(0.434)	NA	ND(0.459)	ND(0.459)	3.58	NA	1.9	0.624	NA	ND(0.376)	NA	NA	NA	
Chrysene	10000	70	NS	NS	NS	NS	mg/kg	ND(0.377)	ND(0.434)	NA	ND(0.459)	ND(0.459)	3.82	NA	2.29	0.758	NA	ND(0.376)	NA	NA	NA	
Benzo(b)fluoranthene	3000	7	NS	NS	NS	NS	mg/kg	ND(0.377)	ND(0.434)	NA	ND(0.459)	ND(0.459)	2.98	NA	1.83	0.562	NA	ND(0.376)	NA	NA	NA	
Benzo(k)fluoranthene	10000	70	NS	NS	NS	NS	mg/kg	ND(0.377)	ND(0.434)	NA	ND(0.459)	ND(0.459)	2.85	NA	1.8	0.528	NA	ND(0.376)	NA	NA	NA	
Benzo(a)pyrene	300	2	NS	NS	NS	NS	mg/kg	ND(0.377)	ND(0.434)	NA	ND(0.459)	ND(0.459)	3.56	NA	2.08	0.649	NA	ND(0.376)	NA	NA	NA	
Indeno(1,2,3-cd)Pyrene	3000	7	NS	NS	NS	NS	mg/kg	ND(0.377)	ND(0.434)	NA	ND(0.459)	ND(0.459)	2.42	NA	1.4	ND(0.47)	NA	ND(0.376)	NA	NA	NA	
Dibenzo(a,h)anthracene	300	0.7	NS	NS	NS	NS	mg/kg	ND(0.377)	ND(0.434)	NA	ND(0.459)	ND(0.459)	0.418	NA	ND(0.443)	ND(0.47)	NA	ND(0.376)	NA	NA	NA	
Benzo(ghi)perylene	10000	1000	NS	NS	NS	NS	mg/kg	ND(0.377)	ND(0.434)	NA	ND(0.459)	ND(0.459)	2.28	NA	1.37	ND(0.47)	NA	ND(0.376)	NA	NA	NA	
<b>General Chemistry</b>																						
Specific Conductance @ 25 C	NS	NS	NS	8000	4000	NS	umhos/cm	75	ND(10)	NA	10	1500	59	23	73	390	NA	18	26	NA	200	
Solids, Total	NS	NS	NS	NS	NS	NS	%	87.2	75.7	79.9	72	72.3	88.8	88.5	75	68.1	87.5	88.1	87	84.9	45.6	
pH (H)	NS	NS	NS	NS	NS	NS	SU	8	6.3	NA	6.1	8.2	7.6	7.5	7.8	7.9	NA	7	7.4	NA	7.5	
Cyanide, Reactive	NS	NS	NS	250	NS	250	NS	mg/kg	ND(10)	ND(10)	NA	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	
Sulfide, Reactive	NS	NS	NS	500	NS	500	NS	mg/kg	ND(10)	ND(10)	NA	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	
<b>Ignitability of Solids</b>																						
Ignitability	NS	NS	NS	NS	NS	NS	NI	NI	NI	NA	NI	NI	NI	NI</td								

TABLE 1 - SUMMARY OF SOIL ANALYTICAL RESULTS

SUFFOLK DOWNS

525 WILLIAM F. MCCLELLAN HIGHWAY

BOSTON, MASSACHUSETTS 02128

VERTEX PROJECT NO. 43068

LOCATION	MCP Upper Concentration Limits (UCLs)	MCP Reportable Concentration RCS-1	MA Aggregate Recycling Criteria	MA Lined Landfill Criteria (LLF)	MA Unlined Landfill Criteria (ULF)	MA Similar Soils RCS-1 (Similar Soils)	Units	VES-125 (0-2)	VES-126 (3-5)	VES-127 (0-2)	VES-127 (2-4)	VES-127 (18-20)	VES-128 (1-2)	VES-129 (0-2)	VES-130 (2-4)	VES-130 (8-10)	VES-131 (0-2)	VES-131 (3-5)	VES-132 (2-3)	VES-133 (0-2)	VES-133 (5-7)		
SAMPLING DATE								2/14/2017	2/15/2017	2/15/2017	2/15/2017	2/15/2017	2/16/2017	2/16/2017	2/16/2017	2/16/2017	2/16/2017	2/16/2017	2/16/2017	2/16/2017	2/16/2017		
LAB SAMPLE ID	L1704637-08	L1704816-04	L1704816-13	L1704816-14	L1704816-12	L1704984-12	L1703745-05	L1704984-03	L1704984-04	L1704984-01	L1704984-02	L1703745-01	L1703745-03	L1703745-04									
SAMPLE TYPE								SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	
FILL OR NATIVE SOIL								FILL	FILL	FILL	FILL	NATIVE	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL		
SOIL MANAGEMENT CLASSIFICATION								Similar Soils*	ULF*	N/A	ULF*	Similar Soils	OOSLF*	ULF*	ULF*	Similar Soils	N/A	Similar Soils	N/A	Similar Soils	N/A	LLF*	
SAMPLE DEPTH (FEET bgs)								0-2	3-5	0-2	2-4	18-20	1-2	0-2	2-4	8-10	0-2	3-5	2-3	0-2	5-7		
Bis(2-chloroethoxy)methane	1000	500	NS	NS	NS	NS	mg/kg	ND(0.2)	ND(0.23)	NA	ND(0.24)	ND(0.24)	ND(0.2)	ND(0.2)	ND(0.24)	ND(0.26)	NA	ND(0.2)	ND(0.2)	NA	ND(0.39)		
Hexachlorobutadiene	1000	30	NS	NS	NS	NS	mg/kg	ND(0.18)	ND(0.22)	NA	ND(0.23)	ND(0.23)	ND(0.18)	ND(0.19)	ND(0.22)	ND(0.24)	NA	ND(0.18)	ND(0.19)	NA	ND(0.36)		
Hexachloroethane	2000	0.7	NS	NS	NS	NS	mg/kg	ND(0.15)	ND(0.17)	NA	ND(0.18)	ND(0.18)	ND(0.15)	ND(0.15)	ND(0.18)	ND(0.19)	NA	ND(0.15)	ND(0.15)	NA	ND(0.29)		
Isophorone	1000	100	NS	NS	NS	NS	mg/kg	ND(0.17)	ND(0.19)	NA	ND(0.2)	ND(0.2)	ND(0.17)	ND(0.2)	ND(0.22)	NA	ND(0.17)	ND(0.17)	NA	ND(0.32)			
Naphthalene	10000	4	NS	NS	NS	4	mg/kg	ND(0.18)	ND(0.22)	NA	ND(0.23)	ND(0.23)	0.19	0.48	ND(0.22)	ND(0.24)	NA	ND(0.18)	ND(0.19)	NA	ND(0.36)		
Nitrobenzene	1000	500	NS	NS	NS	NS	mg/kg	ND(0.17)	ND(0.19)	NA	ND(0.2)	ND(0.2)	ND(0.17)	ND(0.17)	ND(0.2)	ND(0.22)	NA	ND(0.17)	ND(0.17)	NA	ND(0.32)		
Bis(2-ethylhexyl)phthalate	10000	90	NS	NS	NS	NS	mg/kg	ND(0.18)	ND(0.22)	NA	ND(0.23)	ND(0.23)	ND(0.18)	ND(0.19)	ND(0.22)	ND(0.24)	NA	ND(0.18)	ND(0.19)	NA	ND(0.36)		
Butyl benzyl phthalate	1000	100	NS	NS	NS	NS	mg/kg	ND(0.18)	ND(0.22)	NA	ND(0.23)	ND(0.23)	ND(0.18)	ND(0.19)	ND(0.22)	ND(0.24)	NA	ND(0.18)	ND(0.19)	NA	ND(0.36)		
Di-n-butylphthalate	1000	50	NS	NS	NS	NS	mg/kg	ND(0.18)	ND(0.22)	NA	ND(0.23)	ND(0.23)	ND(0.18)	ND(0.19)	ND(0.22)	ND(0.24)	NA	ND(0.18)	ND(0.19)	NA	ND(0.36)		
Di-n-octylphthalate	1000	1000	NS	NS	NS	NS	mg/kg	ND(0.18)	ND(0.22)	NA	ND(0.23)	ND(0.23)	ND(0.18)	ND(0.19)	ND(0.22)	ND(0.24)	NA	ND(0.18)	ND(0.19)	NA	ND(0.36)		
Diethyl phthalate	10000	10	NS	NS	NS	NS	mg/kg	ND(0.18)	ND(0.22)	NA	ND(0.23)	ND(0.23)	ND(0.18)	ND(0.19)	ND(0.22)	ND(0.24)	NA	ND(0.18)	ND(0.19)	NA	ND(0.36)		
Dimethyl phthalate	10000	0.7	NS	NS	NS	NS	mg/kg	ND(0.18)	ND(0.22)	NA	ND(0.23)	ND(0.23)	ND(0.18)	ND(0.19)	ND(0.22)	ND(0.24)	NA	ND(0.18)	ND(0.19)	NA	ND(0.36)		
Benzo(a)anthracene	3000	7	NS	NS	NS	7	mg/kg	0.78	0.26	NA	0.23	ND(0.14)	3.3	4.5	1.4	0.74	NA	ND(0.11)	ND(0.11)	NA	2.9		
Benzo(a)pyrene	300	2	NS	NS	NS	2	mg/kg	0.54	0.24	NA	0.26	ND(0.18)	3.3	5.3	1.2	0.73	NA	ND(0.15)	ND(0.15)	NA	2.2		
Benzo(b)fluoranthene	3000	7	NS	NS	NS	7	mg/kg	0.66	0.3	NA	0.32	ND(0.14)	3.7	6.1	1.4	0.86	NA	0.12	ND(0.11)	ND(0.11)	NA	2.7	
Benzo(k)fluoranthene	10000	70	NS	NS	NS	10	mg/kg	0.24	ND(0.13)	NA	ND(0.14)	ND(0.14)	1.4	2.2	0.48	ND(0.22)	NA	ND(0.11)	ND(0.11)	NA	1.1		
Chrysene	10000	70	NS	NS	NS	20	mg/kg	0.68	0.28	NA	0.26	ND(0.14)	3.1	4.3	1.4	0.7	NA	ND(0.11)	ND(0.11)	NA	2.8		
Acenaphthylene	10000	1	NS	NS	NS	1	mg/kg	ND(0.15)	ND(0.17)	NA	ND(0.18)	0.15	ND(0.15)	ND(0.18)	ND(0.19)	NA	ND(0.15)	ND(0.15)	NA	ND(0.29)			
Anthracene	10000	1000	NS	NS	NS	10	mg/kg	0.13	ND(0.13)	NA	ND(0.14)	ND(0.14)	0.74	0.58	0.49	0.18	NA	ND(0.11)	ND(0.11)	NA	1.6		
Benzo(g,h)perylene	10000	1000	NS	NS	NS	10	mg/kg	0.31	ND(0.17)	NA	ND(0.18)	ND(0.18)	2.1	2.9	0.8	0.38	NA	ND(0.15)	ND(0.15)	NA	1.1		
Fluorene	10000	1000	NS	NS	NS	10	mg/kg	ND(0.18)	ND(0.22)	NA	ND(0.23)	ND(0.23)	ND(0.18)	ND(0.19)	ND(0.22)	ND(0.24)	NA	ND(0.18)	ND(0.19)	NA	0.54		
Phenanthrene	10000	10	NS	NS	NS	10	mg/kg	0.38	ND(0.13)	NA	0.2	ND(0.14)	2.3	2.1	2	0.7	NA	ND(0.11)	ND(0.11)	NA	5.8		
Dibenz(a,h)anthracene	300	0.7	NS	NS	NS	0.7	mg/kg	ND(0.11)	ND(0.13)	NA	ND(0.14)	ND(0.14)	0.49	0.89	0.19	ND(0.14)	NA	ND(0.11)	ND(0.11)	NA	0.34		
Indeno(1,2,3-cd)pyrene	3000	7	NS	NS	NS	7	mg/kg	0.36	ND(0.17)	NA	ND(0.18)	ND(0.18)	2.2	3.3	0.8	0.4	NA	ND(0.15)	ND(0.15)	NA	1.3		
Pyrene	10000	1000	NS	NS	NS	40	mg/kg	1.2	0.3	NA	0.35	ND(0.14)	5.2	4.8	2.4	1.2	NA	0.16	ND(0.11)	ND(0.11)	NA	5.2	
Aniline	1000	1000	NS	NS	NS	NS	mg/kg	ND(0.22)	ND(0.26)	NA	ND(0.27)	ND(0.27)	ND(0.22)	ND(0.27)	ND(0.29)	NA	ND(0.22)	ND(0.23)	NA	ND(0.43)			
4-Chloroaniline	400	1	NS	NS	NS	NS	mg/kg	ND(0.18)	ND(0.22)	NA	ND(0.23)	ND(0.23											

TABLE 1 - SUMMARY OF SOIL ANALYTICAL RESULTS

SUFFOLK DOWNS

525 WILLIAM F. MCCLELLAN HIGHWAY

BOSTON, MASSACHUSETTS 02128

VERTEX PROJECT NO. 43068

LOCATION	MCP Upper Concentration Limits (UCLs)	MCP Reportable Concentration RCS-1	MA Aggregate Recycling Criteria	MA Lined Landfill Criteria (LLF)	MA Unlined Landfill Criteria (ULF)	MA Similar Soils RCS-1 (Similar Soils)	Units	VES-125 (0-2) 2/14/2017	VES-126 (3-5) 2/15/2017	VES-127 (0-2) 2/15/2017	VES-127 (2-4) 2/15/2017	VES-127 (18-20) 2/15/2017	VES-128 (1-2) 2/16/2017	VES-129 (0-2) 2/16/2017	VES-130 (2-4) 2/16/2017	VES-130 (8-10) 2/16/2017	VES-131 (0-2) 2/16/2017	VES-131 (3-5) 2/16/2017	VES-132 (2-3) 2/16/2017	VES-133 (0-2) 2/16/2017	VES-133 (5-7) 2/16/2017		
SAMPLING DATE								2/14/2017	2/15/2017	2/15/2017	2/15/2017	2/15/2017	2/16/2017	2/16/2017	2/16/2017	2/16/2017	2/16/2017	2/16/2017	2/16/2017	2/16/2017	2/16/2017		
LAB SAMPLE ID								L1704637-08	L1704816-04	L1704816-13	L1704816-14	L1704816-12	L1704984-12	L1704984-05	L1704984-03	L1704984-04	L1704984-01	L1704984-02	L1703745-01	L1703745-03	L1703745-04		
SAMPLE TYPE								SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	
FILL OR NATIVE SOIL								FILL	FILL	FILL	FILL	NATIVE	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	FILL	
SOIL MANAGEMENT CLASSIFICATION								Similar Soils*	ULF*	N/A	ULF*	Similar Soils	OOSLF*	ULF*	ULF*	Similar Soils	N/A	Similar Soils	N/A	Similar Soils	N/A	LLF*	5-7
SAMPLE DEPTH (FEET bgs)								0-2	3-5	0-2	2-4	18-20	1-2	0-2	2-4	8-10	0-2	3-5	2-3	0-2	5-7		
Vinyl chloride	600	0.7	NS	NS	NS	NS	mg/kg	ND(0.0017)	ND(0.0025)	NA	ND(0.002)	ND(0.0012)	ND(0.002)	ND(0.0035)	ND(0.0021)	ND(0.003)	NA	ND(0.0014)	ND(0.0018)	NA	ND(0.0061)		
Chloroethane	1000	100	NS	NS	NS	NS	mg/kg	ND(0.0017)	ND(0.0025)	NA	ND(0.002)	ND(0.0012)	ND(0.002)	ND(0.0035)	ND(0.0021)	ND(0.003)	NA	ND(0.0014)	ND(0.0018)	NA	ND(0.0061)		
1,1-Dichloroethene	10000	3	NS	NS	NS	NS	mg/kg	ND(0.0083)	ND(0.0013)	NA	ND(0.001)	ND(0.0061)	ND(0.001)	ND(0.0018)	ND(0.001)	ND(0.0015)	NA	ND(0.0068)	ND(0.0088)	NA	ND(0.003)		
trans-1,2-Dichloroethene	10000	1	NS	NS	NS	NS	mg/kg	ND(0.012)	ND(0.0019)	NA	ND(0.0015)	ND(0.0092)	ND(0.0015)	ND(0.0026)	ND(0.0016)	ND(0.0023)	NA	ND(0.001)	ND(0.013)	NA	ND(0.0046)		
Trichloroethene	600	0.3	NS	NS	NS	NS	mg/kg	ND(0.0083)	ND(0.0013)	NA	ND(0.001)	ND(0.0061)	ND(0.001)	ND(0.0018)	ND(0.001)	ND(0.0015)	NA	ND(0.0068)	ND(0.0088)	NA	ND(0.003)		
1,2-Dichlorobenzene	10000	9	NS	NS	NS	NS	mg/kg	ND(0.0033)	ND(0.0051)	NA	ND(0.004)	ND(0.0024)	ND(0.004)	ND(0.0042)	ND(0.0061)	ND(0.0027)	ND(0.0035)	NA	ND(0.012)				
1,3-Dichlorobenzene	5000	3	NS	NS	NS	NS	mg/kg	ND(0.0033)	ND(0.0051)	NA	ND(0.004)	ND(0.0024)	ND(0.004)	ND(0.0071)	ND(0.0042)	ND(0.0061)	NA	ND(0.0027)	ND(0.0035)	NA	ND(0.012)		
1,4-Dichlorobenzene	10000	0.7	NS	NS	NS	NS	mg/kg	ND(0.0033)	ND(0.0051)	NA	ND(0.004)	ND(0.0024)	ND(0.004)	ND(0.0071)	ND(0.0042)	ND(0.0061)	NA	ND(0.0027)	ND(0.0035)	NA	ND(0.012)		
Methyl tert butyl ether	5000	0.1	NS	NS	NS	NS	mg/kg	ND(0.0017)	ND(0.0025)	NA	ND(0.002)	ND(0.0012)	ND(0.002)	ND(0.0035)	ND(0.0021)	ND(0.003)	NA	ND(0.0014)	ND(0.0018)	NA	ND(0.0061)		
p/m-Xylene	NS	NS	NS	NS	NS	NS	mg/kg	ND(0.0017)	ND(0.0025)	NA	ND(0.002)	ND(0.0012)	ND(0.002)	ND(0.0035)	ND(0.0021)	ND(0.003)	NA	ND(0.0014)	ND(0.0018)	NA	ND(0.0061)		
o-Xylene	NS	NS	NS	NS	NS	NS	mg/kg	ND(0.0017)	ND(0.0025)	NA	ND(0.002)	ND(0.0012)	ND(0.002)	ND(0.0035)	ND(0.0021)	ND(0.003)	NA	ND(0.0014)	ND(0.0018)	NA	ND(0.0061)		
Xylenes, Total	10000	100	NS	NS	NS	NS	mg/kg	ND(0.0017)	ND(0.0025)	NA	ND(0.002)	ND(0.0012)	ND(0.002)	ND(0.0035)	ND(0.0021)	ND(0.003)	NA	ND(0.0014)	ND(0.0018)	NA	ND(0.0061)		
cis-1,2-Dichloroethene	5000	0.1	NS	NS	NS	NS	mg/kg	ND(0.0083)	ND(0.0013)	NA	ND(0.001)	ND(0.0061)	ND(0.001)	ND(0.0018)	ND(0.001)	ND(0.0015)	NA	ND(0.0068)	ND(0.0088)	NA	ND(0.003)		
1,2-Dichloroethene, Total	1000	NS	NS	NS	NS	NS	mg/kg	ND(0.0083)	ND(0.0013)	NA	ND(0.001)	ND(0.0061)	ND(0.001)	ND(0.0018)	ND(0.001)	ND(0.0015)	NA	ND(0.0068)	ND(0.0088)	NA	ND(0.003)		
Dibromomethane	1000	500	NS	NS	NS	NS	mg/kg	ND(0.0033)	ND(0.0051)	NA	ND(0.004)	ND(0.0024)	ND(0.004)	ND(0.0071)	ND(0.0042)	ND(0.0061)	NA	ND(0.0027)	ND(0.0035)	NA	ND(0.012)		
1,2,3-Trichloropropane	1000	100	NS	NS	NS	NS	mg/kg	ND(0.0033)	ND(0.0051)	NA	ND(0.004)	ND(0.0024)	ND(0.004)	ND(0.0071)	ND(0.0042)	ND(0.0061)	NA	ND(0.0027)	ND(0.0035)	NA	ND(0.012)		
Styrene	10000	3	NS	NS	NS	NS	mg/kg	ND(0.0017)	ND(0.0025)	NA	ND(0.002)	ND(0.0012)	ND(0.002)	ND(0.0035)	ND(0.0021)	ND(0.003)	NA	ND(0.0014)	ND(0.0018)	NA	ND(0.0061)		
Dichlorodifluoromethane	1000	1000	NS	NS	NS	NS	mg/kg	ND(0.0083)	ND(0.013)	NA	ND(0.001)	ND(0.0061)	ND(0.001)	ND(0.0018)	ND(0.001)	ND(0.0015)	NA	ND(0.0068)	ND(0.0088)	NA	ND(0.03)		
Acetone	10000	6	NS	NS	NS	NS	mg/kg	ND(0.03)	ND(0.046)	NA	ND(0.036)	ND(0.022)	ND(0.036)	ND(0.064)	ND(0.038)	0.23	NA	ND(0.024)	ND(0.032)	NA	0.31		
Carbon disulfide	1000	100	NS	NS	NS	NS	mg/kg	ND(0.0033)	ND(0.0051)	NA	ND(0.004)	ND(0.0024)	ND(0.004)	ND(0.0042)	ND(0.0067)	NA	ND(0.0027)	ND(0.0035)	NA	ND(0.012)			
Methyl ethyl ketone	10000	4	NS	NS	NS	NS	mg/kg	ND(0.0083)	ND(0.013)	NA	ND(0.01)	ND(0.0061)	ND(0.01)	ND(0.018)	ND(0.01)	0.026	NA	ND(0.0068)	ND(0.0088)	NA	0.091		
Methyl isobutyl ketone	10000	0.4	NS	NS	NS	NS	mg/kg	ND(0.0083)	ND(0.013)	NA	ND(0.01)	ND(0.0061)	ND(0.01)	ND(0.018)	ND(0.01)	ND(0.015)	NA	ND(0.0068)	ND(0.0088)	NA	ND(0.03)		
2-Hexanone	1000	100	NS	NS	NS	NS	mg/kg	ND(0.0083)	ND(0.013)	NA	ND(0.002)	ND(0.0012)	ND(0.002)	ND(0.0035)	ND(0.0021)	ND(0.003)	NA	ND(0.0014)	ND(0.0018)	NA	ND(0.0061)		
Bromochloromethane	1000	NS	NS	NS	NS	NS	mg/kg	ND(0.0033)	ND(0.0051)	NA	ND(0.004)	ND(0.0024)	ND(0.004)	ND(0.0042)	ND(0.0061)	NA	ND(0.0027)	ND(0.0035)	NA	ND(0.012)			
Tetrahydrofuran	1000	500	NS</td																				

**TABLE 1 - SUMMARY OF SOIL ANALYTICAL RESULTS**  
**SUFFOLK DOWNS**  
**525 WILLIAM F. MCCLELLAN HIGHWAY**  
**BOSTON, MASSACHUSETTS 02128**  
**VERTEX PROJECT NO. 43068**

LOCATION	MCP Upper Concentration Limits (UCLs)	MCP Reportable Concentration RCS-1	MA Aggregate Recycling Criteria	MA Lined Landfill Criteria (LLF)	MA Unlined Landfill Criteria (ULF)	MA Similar Soils RCS-1 (Similar Soils)	Units	VES-134 (2-4)	VES-135 (0-2)	VES-136 (0-2)	VES-136 (3-5)	VES-136 (10-12)	VES-EAST-1	VES-EAST-2	VES-WEST	
								2/16/2017	2/6/2017	2/16/2017	2/16/2017	2/16/2017	2/6/2017	2/6/2017	2/6/2017	
SAMPLING DATE								L1704984-05	L1703745-02	L1704984-06	L1704984-07	L1704984-08	L1703748-02	L1703748-03	L1703748-01	
LAB SAMPLE ID								SOIL	SOIL	SOIL	SOIL	SOIL	STOCKPILE	STOCKPILE	STOCKPILE	
SAMPLE TYPE								FILL	FILL	FILL	FILL	NATIVE	FILL	FILL	FILL	
FILL OR NATIVE SOIL								OOSLF*	ULF*	N/A	Similar Soils	Similar Soils	ULF*	Similar Soils	Similar Soils	
SOIL MANAGEMENT CLASSIFICATION								2-4	0-2	0-2	3-5	10-12	0.5	0.5	0.5	
SAMPLE DEPTH (FEET bgs)																
<b>Extractable Petroleum Hydrocarbons (EPH)</b>																
C9-C18 Aliphatics	20000	1000	NS	NS	NS	NS	mg/kg	ND(8.84)	ND(7.82)	NA	ND(8.33)	ND(8.34)	ND(6.87)	ND(7.28)	ND(7.06)	
C19-C36 Aliphatics	20000	3000	NS	NS	NS	NS	mg/kg	59	22.2	NA	ND(8.33)	ND(8.34)	49.7	15.8	66.1	
C11-C22 Aromatics	10000	1000	NS	NS	NS	NS	mg/kg	59.3	48.1	NA	9.14	ND(8.34)	51.2	20.3	51.6	
C11-C22 Aromatics, Adjusted	10000	1000	NS	NS	NS	NS	mg/kg	42.1	38.9	NA	9.14	ND(8.34)	43.5	20.3	51.6	
Naphthalene	10000	4	NS	NS	NS	NS	mg/kg	ND(0.442)	NA	NA	ND(0.416)	ND(0.417)	NA	NA	NA	
2-Methylnaphthalene	5000	0.7	NS	NS	NS	NS	mg/kg	ND(0.442)	NA	NA	ND(0.416)	ND(0.417)	NA	NA	NA	
Acenaphthylene	10000	1	NS	NS	NS	NS	mg/kg	ND(0.442)	NA	NA	ND(0.416)	ND(0.417)	NA	NA	NA	
Acenaphthene	10000	4	NS	NS	NS	NS	mg/kg	ND(0.442)	NA	NA	ND(0.416)	ND(0.417)	NA	NA	NA	
Fluorene	10000	1000	NS	NS	NS	NS	mg/kg	ND(0.442)	NA	NA	ND(0.416)	ND(0.417)	NA	NA	NA	
Phenanthrene	10000	10	NS	NS	NS	NS	mg/kg	1.92	NA	NA	ND(0.416)	ND(0.417)	NA	NA	NA	
Anthracene	10000	1000	NS	NS	NS	NS	mg/kg	ND(0.442)	NA	NA	ND(0.416)	ND(0.417)	NA	NA	NA	
Fluoranthene	10000	1000	NS	NS	NS	NS	mg/kg	2.77	NA	NA	ND(0.416)	ND(0.417)	NA	NA	NA	
Pyrene	10000	1000	NS	NS	NS	NS	mg/kg	2.5	NA	NA	ND(0.416)	ND(0.417)	NA	NA	NA	
Benzo(a)anthracene	3000	7	NS	NS	NS	NS	mg/kg	1.66	NA	NA	ND(0.416)	ND(0.417)	NA	NA	NA	
Chrysene	10000	70	NS	NS	NS	NS	mg/kg	1.82	NA	NA	ND(0.416)	ND(0.417)	NA	NA	NA	
Benzo(b)fluoranthene	3000	7	NS	NS	NS	NS	mg/kg	1.44	NA	NA	ND(0.416)	ND(0.417)	NA	NA	NA	
Benzo(k)fluoranthene	10000	70	NS	NS	NS	NS	mg/kg	1.4	NA	NA	ND(0.416)	ND(0.417)	NA	NA	NA	
Benzo(a)pyrene	300	2	NS	NS	NS	NS	mg/kg	1.57	NA	NA	ND(0.416)	ND(0.417)	NA	NA	NA	
Indeno(1,2,3-cd)Pyrene	3000	7	NS	NS	NS	NS	mg/kg	1.08	NA	NA	ND(0.416)	ND(0.417)	NA	NA	NA	
Dibenz(a,h)anthracene	300	0.7	NS	NS	NS	NS	mg/kg	ND(0.442)	NA	NA	ND(0.416)	ND(0.417)	NA	NA	NA	
Benzo(ghi)perylene	10000	1000	NS	NS	NS	NS	mg/kg	1.02	NA	NA	ND(0.416)	ND(0.417)	NA	NA	NA	
<b>General Chemistry</b>																
Specific Conductance @ 25 C	NS	NS	NS	8000	4000	NS	umhos/cm	720	43	NA	12	27	56	34	37	
Solids, Total	NS	NS	NS	NS	NS	NS	%	73.7	84.8	87.7	76.8	77.7	92.9	90	91.3	
pH (H)	NS	NS	NS	NS	NS	NS	SU	7.6	7.4	NA	6.7	6.6	7.9	7.8	7.6	
Cyanide, Reactive	NS	NS	250	NS	250	NS	mg/kg	ND(10)	ND(10)	NA	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	
Sulfide, Reactive	NS	NS	500	NS	500	NS	mg/kg	ND(10)	ND(10)	NA	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	
<b>Ignitability of Solids</b>																
Ignitability	NS	NS	NS	NS	NS	NS	NI	NI	NI	NA	NI	NI	NI	NI	NI	NI
<b>MCP Organochlorine Pesticides</b>																
Delta-BHC	1000	10	NS	NS	NS	NS	mg/kg	NA	NA	ND(0.00871)	NA	NA	ND(0.00846)	ND(0.00867)	ND(0.0087)	
Lindane	600	0.003	NS	NS	NS	NS	mg/kg	NA	NA	ND(0.0029)	NA	NA	ND(0.00282)	ND(0.00289)	ND(0.0029)	
Alpha-BHC	1000	50	NS	NS	NS	NS	mg/kg	NA	NA	ND(0.00363)	NA	NA	ND(0.00352)	ND(0.00361)	ND(0.00363)	
Beta-BHC	1000	10	NS	NS	NS	NS	mg/kg	NA	NA	ND(0.00871)	NA	NA	ND(0.00846)	ND(0.00867)	ND(0.0087)	
Heptachlor	100	0.3	NS	NS	NS	NS	mg/kg	NA	NA	ND(0.00435)	NA	NA	ND(0.00423)	ND(0.00434)	ND(0.00435)	
Aldrin	30	0.08	NS	NS	NS	NS	mg/kg	NA	NA	ND(0.00871)	NA	NA	ND(0.00846)	ND(0.00867)	ND(0.0087)	
Heptachlor epoxide	10	0.1	NS	NS	NS	NS	mg/kg	NA	NA	ND(0.0163)	NA	NA	ND(0.0159)	ND(0.0163)	ND(0.0163)	
Endrin	200	10	NS	NS	NS	NS	mg/kg	NA	NA	0.00942	NA	NA	ND(0.00352)	ND(0.00361)	ND(0.00363)	
Endrin ketone	1000	NS	NS	NS	NS	NS	mg/kg	NA	NA	ND(0.00871)	NA	NA	ND(0.00846)	ND(0.00867)	ND(0.0087)	
Dieldrin	30	0.08	NS	NS	NS	NS	mg/kg	NA	NA	ND(0.00544)	NA	NA	ND(0.00529)	ND(0.00542)	ND(0.00544)	
4,4'-DDE	600	6	NS	NS	NS	NS	mg/kg	NA	NA	0.0335	NA	NA	ND(0.00846)	ND(0.00867)	ND(0.0087)	
4,4'-DDD	600	8	NS	NS	NS	NS	mg/kg	NA	NA	ND(0.00871)	NA	NA	ND(0.00846)	ND(0.00867)	ND(0.0087)	
4,4'-DDT	600	6	NS	NS	NS	NS	mg/kg	NA	NA	0.138	NA	NA	ND(0.0159)	0.0376	ND(0.0163)	
Endosulfan I	5000	0.5	NS	NS	NS	NS	mg/kg	NA	NA	ND(0.00871)	NA	NA	ND(0.00846)	ND(0.00867)	ND(0.00	

TABLE 1 - SUMMARY OF SOIL ANALYTICAL RESULTS

SUFFOLK DOWNS

525 WILLIAM F. MCCLELLAN HIGHWAY

BOSTON, MASSACHUSETTS 02128

VERTEX PROJECT NO. 43068

LOCATION	MCP Upper Concentration Limits (UCLs)	MCP Reportable Concentration RCS-1	MA Aggregate Recycling Criteria	MA Lined Landfill Criteria (LLF)	MA Unlined Landfill Criteria (ULF)	MA Similar Soils RCS-1 (Similar Soils)	Units	VES-134 (2-4)	VES-135 (0-2)	VES-136 (0-2)	VES-136 (3-5)	VES-136 (10-12)	VES-EAST-1	VES-EAST-2	VES-WEST	
								2/16/2017	2/6/2017	2/16/2017	2/16/2017	2/16/2017	2/6/2017	2/6/2017	2/6/2017	
SAMPLING DATE								L1704984-05	L1703745-02	L1704984-06	L1704984-07	L1704984-08	L1703748-02	L1703748-03	L1703748-01	
LAB SAMPLE ID																
SAMPLE TYPE																
FILL OR NATIVE SOIL																
SOIL MANAGEMENT CLASSIFICATION																
SAMPLE DEPTH (FEET bgs)																
Bis(2-chloroethoxy)methane	1000	500	NS	NS	NS	NS	mg/kg	ND(0.24)	ND(0.21)	NA	ND(0.23)	ND(0.23)	ND(0.19)	ND(0.2)	ND(0.19)	
Hexachlorobutadiene	1000	30	NS	NS	NS	NS	mg/kg	ND(0.22)	ND(0.19)	NA	ND(0.22)	ND(0.21)	ND(0.18)	ND(0.18)	ND(0.18)	
Hexachloroethane	2000	0.7	NS	NS	NS	NS	mg/kg	ND(0.18)	ND(0.16)	NA	ND(0.17)	ND(0.17)	ND(0.14)	ND(0.15)	ND(0.14)	
Isophorone	1000	100	NS	NS	NS	NS	mg/kg	ND(0.2)	ND(0.17)	NA	ND(0.19)	ND(0.19)	ND(0.16)	ND(0.16)	ND(0.16)	
Naphthalene	10000	4	NS	NS	NS	4	mg/kg	0.42	ND(0.19)	NA	ND(0.22)	ND(0.21)	ND(0.18)	ND(0.18)	ND(0.18)	
Nitrobenzene	1000	500	NS	NS	NS	NS	mg/kg	ND(0.2)	ND(0.17)	NA	ND(0.19)	ND(0.19)	ND(0.16)	ND(0.16)	ND(0.16)	
Bis(2-ethylhexyl)phthalate	10000	90	NS	NS	NS	NS	mg/kg	ND(0.22)	ND(0.19)	NA	ND(0.22)	ND(0.21)	ND(0.18)	ND(0.18)	ND(0.18)	
Butyl benzyl phthalate	1000	100	NS	NS	NS	NS	mg/kg	ND(0.22)	0.26	NA	ND(0.22)	ND(0.21)	ND(0.18)	ND(0.18)	ND(0.18)	
Di-n-butylphthalate	1000	50	NS	NS	NS	NS	mg/kg	ND(0.22)	ND(0.19)	NA	ND(0.22)	ND(0.21)	ND(0.18)	ND(0.18)	ND(0.18)	
Di-n-octylphthalate	1000	1000	NS	NS	NS	NS	mg/kg	ND(0.22)	ND(0.19)	NA	ND(0.22)	ND(0.21)	ND(0.18)	ND(0.18)	ND(0.18)	
Diethyl phthalate	10000	10	NS	NS	NS	NS	mg/kg	ND(0.22)	ND(0.19)	NA	ND(0.22)	ND(0.21)	ND(0.18)	ND(0.18)	ND(0.18)	
Dimethyl phthalate	10000	0.7	NS	NS	NS	NS	mg/kg	ND(0.22)	ND(0.19)	NA	ND(0.22)	ND(0.21)	ND(0.18)	ND(0.18)	ND(0.18)	
Benzo(a)anthracene	3000	7	NS	NS	NS	7	mg/kg	14	0.49	NA	0.21	ND(0.13)	2.6	0.17	0.12	
Benzo(a)pyrene	300	2	NS	NS	NS	2	mg/kg	12	0.51	NA	0.18	ND(0.17)	2.4	0.17	0.14	
Benzo(b)fluoranthene	3000	7	NS	NS	NS	7	mg/kg	17	0.66	NA	0.22	ND(0.13)	3.2	0.22	0.23	
Benzo(k)fluoranthene	10000	70	NS	NS	NS	10	mg/kg	4.9	0.23	NA	ND(0.13)	ND(0.13)	1.1	ND(0.11)	ND(0.11)	
Chrysene	10000	70	NS	NS	NS	20	mg/kg	14	0.5	NA	0.2	ND(0.13)	2.7	0.17	0.18	
Acenaphthylene	10000	1	NS	NS	NS	1	mg/kg	0.8	ND(0.16)	NA	ND(0.17)	ND(0.17)	ND(0.14)	ND(0.15)	ND(0.14)	
Anthracene	10000	1000	NS	NS	NS	10	mg/kg	2.8	0.12	NA	ND(0.13)	ND(0.13)	0.57	ND(0.11)	ND(0.11)	
Benzo(g,h)perylene	10000	1000	NS	NS	NS	10	mg/kg	6.7	0.34	NA	ND(0.17)	ND(0.17)	1.4	ND(0.15)	ND(0.14)	
Fluorene	10000	1000	NS	NS	NS	10	mg/kg	0.67	ND(0.19)	NA	ND(0.22)	ND(0.21)	ND(0.18)	ND(0.18)	ND(0.18)	
Phenanthrene	10000	10	NS	NS	NS	10	mg/kg	16	0.47	NA	0.27	ND(0.13)	3.3	0.16	0.11	
Dibenz(a,b)anthracene	300	0.7	NS	NS	NS	0.7	mg/kg	2	ND(0.12)	NA	ND(0.13)	ND(0.13)	0.39	ND(0.11)	ND(0.11)	
Indeno(1,2,3-cd)pyrene	3000	7	NS	NS	NS	7	mg/kg	7.6	0.35	NA	ND(0.17)	ND(0.17)	1.5	ND(0.15)	ND(0.14)	
Pyrene	10000	1000	NS	NS	NS	40	mg/kg	21	0.79	NA	0.35	ND(0.13)	4.3	0.28	0.23	
Aniline	1000	1000	NS	NS	NS	NS	mg/kg	ND(0.27)	ND(0.23)	NA	ND(0.26)	ND(0.25)	ND(0.21)	ND(0.22)	ND(0.22)	
4-Chloroaniline	400	1	NS	NS	NS	NS	mg/kg	ND(0.22)	ND(0.19)	NA	ND(0.22)	ND(0.21)	ND(0.18)	ND(0.18)	ND(0.18)	
Dibenzofuran	1000	100	NS	NS	NS	NS	mg/kg	ND(0.22)	ND(0.19)	NA	ND(0.22)	ND(0.21)	ND(0.18)	ND(0.18)	ND(0.18)	
2-Methylnaphthalene	5000	0.7	NS	NS	NS	0.7	mg/kg	ND(0.27)	ND(0.23)	NA	ND(0.26)	ND(0.25)	ND(0.21)	ND(0.22)	ND(0.22)	
Acetophenone	1000	1000	NS	NS	NS	NS	mg/kg	ND(0.22)	ND(0.19)	NA	ND(0.22)	ND(0.21)	ND(0.18)	ND(0.18)	ND(0.18)	
2,4,6-Trichlorophenol	4000	0.7	NS	NS	NS	NS	mg/kg	ND(0.14)	ND(0.12)	NA	ND(0.13)	ND(0.13)	ND(0.11)	ND(0.11)	ND(0.11)	
2-Chlorophenol	3000	0.7	NS	NS	NS	NS	mg/kg	ND(0.22)	ND(0.19)	NA	ND(0.22)	ND(0.21)	ND(0.18)	ND(0.18)	ND(0.18)	
2,4-Dichlorophenol	8000	0.7	NS	NS	NS	NS	mg/kg	ND(0.2)	ND(0.17)	NA	ND(0.19)	ND(0.19)	ND(0.16)	ND(0.16)	ND(0.16)	
2,4-Dimethylphenol	10000	0.7	NS	NS	NS	NS	mg/kg	ND(0.22)	ND(0.19)	NA	ND(0.22)	ND(0.21)	ND(0.18)	ND(0.18)	ND(0.18)	
2-Nitrophenol	1000	100	NS	NS	NS	NS	mg/kg	ND(0.49)	ND(0.42)	NA	ND(0.47)	ND(0.45)	ND(0.39)	ND(0.4)	ND(0.39)	
4-Nitrophenol	1000	100	NS	NS	NS	NS	mg/kg	ND(0.32)	ND(0.27)	NA	ND(0.3)	ND(0.29)	ND(0.25)	ND(0.26)	ND(0.25)	
2,4-Dinitrophenol	8000	3	NS	NS	NS	NS	mg/kg	ND(1.1)	ND(0.93)	NA	ND(1)	ND(1)	ND(0.86)	ND(0.88)	ND(0.87)	
Pentachlorophenol	700	3	NS	NS	NS	NS	mg/kg	ND(0.45)	ND(0.39)	NA	ND(0.43)	ND(0.42)	ND(0.36)	ND(0.37)	ND(0.36)	
Phenol	10000	1	NS	NS	NS	NS	mg/kg	ND(0.22)	ND(0.19)	NA	ND(0.22)	ND(0.21)	ND(0.18)	ND(0.18)	ND(0.18)	
2-Methylphenol	1000	500	NS	NS	NS	NS	mg/kg	ND(0.22)	ND(0.19)	NA	ND(0.22)	ND(0.21)	ND(0.18)	ND(0.18)	ND(0.18)	
3-Methylphenol/4-Methylphenol	1000	500	NS	NS	NS	NS	mg/kg	ND(0.32)	ND(0.28)	NA	ND(0.31)	ND(0.3)	ND(0.26)	ND(0.26)	ND(0.26)	
2,4,5-Trichlorophenol	10000	4	NS	NS	NS	NS	mg/kg</td									

TABLE 1 - SUMMARY OF SOIL ANALYTICAL RESULTS

SUFFOLK DOWNS

525 WILLIAM F. MCCLELLAN HIGHWAY

BOSTON, MASSACHUSETTS 02128

VERTEX PROJECT NO. 43068

LOCATION	MCP Upper Concentration Limits (UCLs)	MCP Reportable Concentration RCS-1	MA Aggregate Recycling Criteria	MA Lined Landfill Criteria (LLF)	MA Unlined Landfill Criteria (ULF)	MA Similar Soils RCS-1 (Similar Soils)	Units	VES-134 (2-4)	VES-135 (0-2)	VES-136 (0-2)	VES-136 (3-5)	VES-136 (10-12)	VES-EAST-1	VES-EAST-2	VES-WEST	
								2/16/2017	2/6/2017	2/16/2017	2/16/2017	2/16/2017	2/6/2017	2/6/2017	2/6/2017	
SAMPLING DATE								L1704984-05	L1703745-02	L1704984-06	L1704984-07	L1704984-08	L1703748-02	L1703748-03	L1703748-01	
LAB SAMPLE ID																
SAMPLE TYPE								SOIL	SOIL	SOIL	SOIL	SOIL	STOCKPILE	STOCKPILE	STOCKPILE	
FILL OR NATIVE SOIL								FILL	FILL	FILL	FILL	NATIVE	FILL	FILL	FILL	
SOIL MANAGEMENT CLASSIFICATION								OOSLF*	ULF*	N/A	Similar Soils	Similar Soils	ULF*	Similar Soils	Similar Soils	
SAMPLE DEPTH (FEET bgs)								2-4	0-2	0-2	3-5	10-12	0.5	0.5	0.5	
Vinyl chloride	600	0.7	NS	NS	NS	NS	mg/kg	ND(0.002)	ND(0.002)	NA	ND(0.002)	ND(0.0013)	ND(0.0015)	ND(0.0023)	ND(0.0018)	
Chloroethane	1000	100	NS	NS	NS	NS	mg/kg	ND(0.002)	ND(0.002)	NA	ND(0.002)	ND(0.0013)	ND(0.0015)	ND(0.0023)	ND(0.0018)	
1,1-Dichloroethene	10000	3	NS	NS	NS	NS	mg/kg	ND(0.001)	ND(0.00098)	NA	ND(0.001)	ND(0.00064)	ND(0.00077)	ND(0.0012)	ND(0.00088)	
trans-1,2-Dichloroethene	10000	1	NS	NS	NS	NS	mg/kg	ND(0.0015)	ND(0.0015)	NA	ND(0.0015)	ND(0.00096)	ND(0.0012)	ND(0.0017)	ND(0.0013)	
Trichloroethene	600	0.3	NS	NS	NS	NS	mg/kg	ND(0.001)	ND(0.00098)	NA	ND(0.001)	ND(0.00064)	ND(0.00077)	ND(0.0012)	ND(0.00088)	
1,2-Dichlorobenzene	10000	9	NS	NS	NS	NS	mg/kg	ND(0.0041)	ND(0.0039)	NA	ND(0.004)	ND(0.0026)	ND(0.0031)	ND(0.0046)	ND(0.0035)	
1,3-Dichlorobenzene	5000	3	NS	NS	NS	NS	mg/kg	ND(0.0041)	ND(0.0039)	NA	ND(0.004)	ND(0.0026)	ND(0.0031)	ND(0.0046)	ND(0.0035)	
1,4-Dichlorobenzene	10000	0.7	NS	NS	NS	NS	mg/kg	ND(0.0041)	ND(0.0039)	NA	ND(0.004)	ND(0.0026)	ND(0.0031)	ND(0.0046)	ND(0.0035)	
Methyl tert butyl ether	5000	0.1	NS	NS	NS	NS	mg/kg	ND(0.002)	ND(0.002)	NA	ND(0.002)	ND(0.0013)	ND(0.0015)	ND(0.0023)	ND(0.0018)	
p/m-Xylene	NS	NS	NS	NS	NS	NS	mg/kg	ND(0.002)	ND(0.002)	NA	ND(0.002)	ND(0.0013)	ND(0.0015)	ND(0.0023)	ND(0.0018)	
o-Xylene	NS	NS	NS	NS	NS	NS	mg/kg	ND(0.002)	ND(0.002)	NA	ND(0.002)	ND(0.0013)	ND(0.0015)	ND(0.0023)	ND(0.0018)	
Xylenes, Total	10000	100	NS	NS	NS	NS	mg/kg	ND(0.002)	ND(0.002)	NA	ND(0.002)	ND(0.0013)	ND(0.0015)	ND(0.0023)	ND(0.0018)	
cis-1,2-Dichloroethene	5000	0.1	NS	NS	NS	NS	mg/kg	ND(0.001)	ND(0.00098)	NA	ND(0.001)	ND(0.00064)	ND(0.00077)	ND(0.0012)	ND(0.00088)	
1,2-Dichloroethene, Total	1000	NS	NS	NS	NS	NS	mg/kg	ND(0.001)	ND(0.00098)	NA	ND(0.001)	ND(0.00064)	ND(0.00077)	ND(0.0012)	ND(0.00088)	
Dibromomethane	1000	500	NS	NS	NS	NS	mg/kg	ND(0.0041)	ND(0.0039)	NA	ND(0.004)	ND(0.0026)	ND(0.0031)	ND(0.0046)	ND(0.0035)	
1,2,3-Trichloropropane	1000	100	NS	NS	NS	NS	mg/kg	ND(0.0041)	ND(0.0039)	NA	ND(0.004)	ND(0.0026)	ND(0.0031)	ND(0.0046)	ND(0.0035)	
Styrene	10000	3	NS	NS	NS	NS	mg/kg	ND(0.002)	ND(0.002)	NA	ND(0.002)	ND(0.0013)	ND(0.0015)	ND(0.0023)	ND(0.0018)	
Dichlorodifluoromethane	1000	1000	NS	NS	NS	NS	mg/kg	ND(0.01)	ND(0.0098)	NA	ND(0.01)	ND(0.0064)	ND(0.0077)	ND(0.012)	ND(0.0088)	
Acetone	10000	6	NS	NS	NS	NS	mg/kg	0.18	ND(0.035)	NA	ND(0.036)	ND(0.023)	ND(0.028)	ND(0.042)	ND(0.032)	
Carbon disulfide	1000	100	NS	NS	NS	NS	mg/kg	ND(0.0041)	ND(0.0039)	NA	ND(0.004)	ND(0.0026)	ND(0.0031)	ND(0.0046)	ND(0.0035)	
Methyl ethyl ketone	10000	4	NS	NS	NS	NS	mg/kg	0.022	ND(0.0098)	NA	ND(0.01)	ND(0.0064)	ND(0.0077)	ND(0.012)	ND(0.0088)	
Methyl isobutyl ketone	10000	0.4	NS	NS	NS	NS	mg/kg	ND(0.01)	ND(0.0098)	NA	ND(0.01)	ND(0.0064)	ND(0.0077)	ND(0.012)	ND(0.0088)	
2-Hexanone	1000	100	NS	NS	NS	NS	mg/kg	ND(0.01)	ND(0.0098)	NA	ND(0.01)	ND(0.0064)	ND(0.0077)	ND(0.012)	ND(0.0088)	
Bromochloromethane	1000	NS	NS	NS	NS	NS	mg/kg	ND(0.0041)	ND(0.0039)	NA	ND(0.004)	ND(0.0026)	ND(0.0031)	ND(0.0046)	ND(0.0035)	
Tetrahydrofuran	1000	500	NS	NS	NS	NS	mg/kg	ND(0.0041)	ND(0.0039)	NA	ND(0.004)	ND(0.0026)	ND(0.0031)	ND(0.0046)	ND(0.0035)	
2,2-Dichloropropane	1000	NS	NS	NS	NS	NS	mg/kg	ND(0.0051)	ND(0.0049)	NA	ND(0.005)	ND(0.0032)	ND(0.0038)	ND(0.0058)	ND(0.0044)	
1,2-Dibromoethane	400	0.1	NS	NS	NS	NS	mg/kg	ND(0.0041)	ND(0.0039)	NA	ND(0.004)	ND(0.0026)	ND(0.0031)	ND(0.0046)	ND(0.0035)	
1,3-Dichloropropane	1000	500	NS	NS	NS	NS	mg/kg	ND(0.0041)	ND(0.0039)	NA	ND(0.004)	ND(0.0026)	ND(0.0031)	ND(0.0046)	ND(0.0035)	
1,1,1,2-Tetrachloroethane	5000	0.1	NS	NS	NS	NS	mg/kg	ND(0.001)	ND(0.00098)	NA	ND(0.001)	ND(0.00064)	ND(0.00077)	ND(0.0012)	ND(0.00088)	
Bromobenzene	1000	100	NS	NS	NS	NS	mg/kg	ND(0.0051)	ND(0.0049)	NA	ND(0.005)	ND(0.0032)	ND(0.0038)	ND(0.0058)	ND(0.0044)	
n-Butylbenzene	1000	NS	NS	NS	NS	NS	mg/kg	ND(0.001)	ND(0.00098)	NA	ND(0.001)	ND(0.00064)	ND(0.00077)	ND(0.0012)	ND(0.00088)	
sec-Butylbenzene	1000	NS	NS	NS	NS	NS	mg/kg	ND(0.001)	ND(0.00098)	NA	ND(0.001)	ND(0.00064)	ND(0.00077)	ND(0.0012)	ND(0.00088)	
tert-Butylbenzene	1000	100	NS	NS	NS	NS	mg/kg	ND(0.0041)	ND(0.0039)	NA	ND(0.004)	ND(0.0026)	ND(0.0031)	ND(0.0046)	ND(0.0035)	
o-Chlorotoluene	1000	100	NS	NS	NS	NS	mg/kg	ND(0.0041)	ND(0.0039)	NA	ND(0.004)	ND(0.0026)	ND(0.0031)	ND(0.0046)	ND(0.0035)	
p-Chlorotoluene	1000	NS	NS	NS	NS	NS	mg/kg	ND(0.0041)	ND(0.0039)	NA	ND(0.004)	ND(0.0026)	ND(0.0031)	ND(0.0046)	ND(0.0035)	
1,2-Dibromo-3-chloropropane	1000	10	NS	NS	NS	NS	mg/kg	ND(0.0041)	ND(0.0039)	NA	ND(0.004)	ND(0.0026)	ND(0.0031)	ND(0.0046)	ND(0.0035)	
Hexachlorobutadiene	1000	30	NS	NS	NS	NS	mg/kg	ND(0.0041)	ND(0.0039							

TABLE 2 - SUMMARY OF PCB ANALYTICAL RESULTS

SUFFOLK DOWNS

525 WILLIAM F. MCCLELLAN HIGHWAY

BOSTON, MASSACHUSETTS 02128

VERTEX PROJECT NO. 43068

LOCATION	MCP Upper Concentration Limits (UCLs)	MCP Reportable Concentrations RCS-1	MA Aggregate Recycling Criteria	MA Lined Landfill Criteria (LLF)	MA Unlined Landfill Criteria (ULF)	MA Similar Soils RCS-1 (Similar Soils)	Units	VES-WEST	VES-MAINT-N	VES-MAINT-S	VES-TRANS-N	VES-TRANS-SE	VES-TRANS-SW	VES-O-E	VES-O-S	VES-O-W1	VES-O-W2	VES-O-N
SAMPLING DATE								2/6/2017	2/7/2017	2/7/2017	2/7/2017	2/7/2017	2/7/2017	2/8/2017	2/8/2017	2/8/2017	2/8/2017	
LAB SAMPLE ID								L1703748-01	L1703863-01	L1703863-02	L1703863-03	L1703863-04	L1703863-05	L1704356-01	L1704356-02	L1704356-03	L1704356-04	L1704356-05
SAMPLE TYPE								STOCKPILE	CONCRETE	CONCRETE	CONCRETE	CONCRETE	SOIL	SOIL	SOIL	SOIL	SOIL	
FILL OR NATIVE SOIL								FILL	NA	NA	NA	NA	FILL	FILL	FILL	FILL	FILL	
SOIL MANAGEMENT CLASSIFICATION									NA	NA	NA	NA	NA	Similar Soils	Similar Soils	Similar Soils	Similar Soils	
SAMPLE DEPTH (ft.)								0.5	0.04	0.04	0.04	0.04	0.04	0.25-0.75	0.25-0.75	0.25-0.75	0.25-0.75	
General Chemistry																		
Solids, Total		NS	NS	NS	NS	NS	%	91.3	98	98.9	98.4	96.7	98.7	93.1	95.9	96	93.6	90.8
PCP Polychlorinated Biphenyls (PCBs)																		
Aroclor 1016	NS	NS	NS	NS	NS	NS	mg/kg	ND(0.0352)	ND(0.0556)	ND(0.0516)	ND(0.054)	ND(0.0536)	ND(0.0536)	ND(0.035)	ND(0.033)	ND(0.0334)	ND(0.0343)	ND(0.0366)
Aroclor 1221	NS	NS	NS	NS	NS	NS	mg/kg	ND(0.0352)	ND(0.0556)	ND(0.0516)	ND(0.054)	ND(0.0536)	ND(0.0536)	ND(0.035)	ND(0.033)	ND(0.0334)	ND(0.0343)	ND(0.0366)
Aroclor 1232	NS	NS	NS	NS	NS	NS	mg/kg	ND(0.0352)	ND(0.0556)	ND(0.0516)	ND(0.054)	ND(0.0536)	ND(0.0536)	ND(0.035)	ND(0.033)	ND(0.0334)	ND(0.0343)	ND(0.0366)
Aroclor 1242	NS	NS	NS	NS	NS	NS	mg/kg	ND(0.0352)	ND(0.0556)	ND(0.0516)	ND(0.054)	ND(0.0536)	ND(0.0536)	ND(0.035)	ND(0.033)	ND(0.0343)	ND(0.0343)	ND(0.0366)
Aroclor 1248	NS	NS	NS	NS	NS	NS	mg/kg	ND(0.0352)	ND(0.037)	ND(0.0344)	ND(0.036)	ND(0.0357)	ND(0.0357)	ND(0.035)	ND(0.033)	ND(0.0343)	ND(0.0343)	ND(0.0366)
Aroclor 1254	NS	NS	NS	NS	NS	NS	mg/kg	ND(0.0352)	ND(0.0556)	ND(0.0516)	ND(0.054)	ND(0.0536)	ND(0.0536)	ND(0.035)	ND(0.033)	ND(0.0334)	ND(0.0343)	ND(0.0366)
Aroclor 1260	NS	NS	NS	NS	NS	NS	mg/kg	ND(0.0352)	ND(0.037)	0.0593	0.116	ND(0.0357)	ND(0.0357)	ND(0.035)	ND(0.033)	ND(0.0334)	ND(0.0343)	ND(0.0366)
Aroclor 1262	NS	NS	NS	NS	NS	NS	mg/kg	ND(0.0352)	ND(0.0185)	ND(0.0172)	ND(0.018)	ND(0.0179)	ND(0.0179)	ND(0.035)	ND(0.033)	ND(0.0334)	ND(0.0343)	ND(0.0366)
Aroclor 1268	NS	NS	NS	NS	NS	NS	mg/kg	ND(0.0352)	ND(0.0185)	ND(0.0172)	0.144	ND(0.0179)	ND(0.0179)	ND(0.035)	ND(0.033)	ND(0.0334)	ND(0.0343)	ND(0.0366)
PCBs, Total	100	1	2	2	2	NS	mg/kg	ND(0.0352)	ND(0.037)	0.0593	0.26	ND(0.0179)	ND(0.0357)	0.0429	ND(0.033)	ND(0.034)	ND(0.0343)	ND(0.0366)

## Notes:

- Units presented in milligrams per kilogram (mg/kg), unless otherwise noted
- Upper Concentration Limits (UCLs) obtained from the Massachusetts Contingency Plan (MCP) 310 CMR 40.0996(6) dated April 2014
- Reportable Concentrations obtained from 310 CMR 40.1600 dated April 2014
- ND = Not Detected above laboratory reporting limits shown in parentheses
- NA = Not Analyzed
- NS = No Standard
- Bold and highlighted values exceed the applicable standard
- Full analytical results, including QA/QC information and data flags, are detailed in the laboratory analytical report
- Soil and concrete samples collected by The Vertex Companies, Inc.

**TABLE 3 - SUMMARY OF SEDIMENT ANALYTICAL RESULTS**  
**SUFFOLK DOWNS**  
**525 WILLIAM F. MCCLELLAN HIGHWAY**  
**BOSTON, MASSACHUSETTS 02128**  
**VERTEX PROJECT NO. 43068**

LOCATION	Stage I Freshwater Sediment Screening Criteria	Units	VES-S1	VES-S2
SAMPLING DATE	2/6/2017		2/6/2017	
LAB SAMPLE ID	L1703750-01		L1703750-02	
SAMPLE TYPE	SEDIMENT		SEDIMENT	
SAMPLE DEPTH (ft.)	0.3-0.8		0.3-0.8	
<b>Extractable Petroleum Hydrocarbons (EPH)</b>				
C9-C18 Aliphatics	NS	mg/kg	ND(17.1)	17.7
C19-C36 Aliphatics	NS	mg/kg	48.3	46.2
C11-C22 Aromatics	NS	mg/kg	31.2	ND(14.4)
C11-C22 Aromatics, Adjusted	NS	mg/kg	28.9	ND(14.4)
Naphthalene	0.18	mg/kg	ND(0.856)	ND(0.721)
2-Methylnaphthalene	NS	mg/kg	ND(0.856)	ND(0.721)
Acenaphthylene	NS	mg/kg	ND(0.856)	ND(0.721)
Acenaphthene	NS	mg/kg	ND(0.856)	ND(0.721)
Fluorene	0.077	mg/kg	ND(0.856)	ND(0.721)
Phenanthrene	0.2	mg/kg	ND(0.856)	ND(0.721)
Anthracene	0.057	mg/kg	ND(0.856)	ND(0.721)
Fluoranthene	0.42	mg/kg	1.22	ND(0.721)
Pyrene	0.2	mg/kg	1.1	ND(0.721)
Benzo(a)anthracene	0.11	mg/kg	ND(0.856)	ND(0.721)
Chrysene	0.17	mg/kg	ND(0.856)	ND(0.721)
Benzo(b)fluoranthene	NS	mg/kg	ND(0.856)	ND(0.721)
Benzo(k)fluoranthene	NS	mg/kg	ND(0.856)	ND(0.721)
Benzo(a)pyrene	0.15	mg/kg	ND(0.856)	ND(0.721)
Indeno(1,2,3-cd)Pyrene	NS	mg/kg	ND(0.856)	ND(0.721)
Dibenzo(a,h)anthracene	0.033	mg/kg	ND(0.856)	ND(0.721)
Benzo(ghi)perylene	NS	mg/kg	ND(0.856)	ND(0.721)
<b>General Chemistry</b>				
Specific Conductance @ 25 C	NS	umhos/cm	71	840
Solids, Total	NS	%	37.2	45.6
pH (H)	NS	SU	6.7	7.2
Cyanide, Reactive	NS	mg/kg	ND(10)	ND(10)
Sulfide, Reactive	NS	mg/kg	ND(10)	ND(10)
<b>Ignitability of Solids</b>				
Ignitability	NS	NI	NI	NI
<b>MCP Polychlorinated Biphenyls (PCBs)</b>				
Aroclor 1016	NS	mg/kg	ND(0.0892)	ND(0.0722)
Aroclor 1221	NS	mg/kg	ND(0.0892)	ND(0.0722)
Aroclor 1232	NS	mg/kg	ND(0.0892)	ND(0.0722)
Aroclor 1242	NS	mg/kg	ND(0.0892)	ND(0.0722)
Aroclor 1248	NS	mg/kg	ND(0.0892)	ND(0.0722)
Aroclor 1254	NS	mg/kg	ND(0.0892)	ND(0.0722)
Aroclor 1260	NS	mg/kg	ND(0.0892)	ND(0.0722)
Aroclor 1262	NS	mg/kg	ND(0.0892)	ND(0.0722)
Aroclor 1268	NS	mg/kg	ND(0.0892)	ND(0.0722)
PCBs, Total	0.06	mg/kg	ND(0.0892)	ND(0.0722)
<b>MCP Semi-Volatile Organic Compounds (SVOCs)</b>				
Acenaphthene	NS	mg/kg	ND(0.35)	ND(0.29)
1,2,4-Trichlorobenzene	NS	mg/kg	ND(0.44)	ND(0.36)
Hexachlorobenzene	NS	mg/kg	ND(0.26)	ND(0.22)
Bis(2-chloroethyl)ether	NS	mg/kg	ND(0.4)	ND(0.32)
2-Chloronaphthalene	NS	mg/kg	ND(0.44)	ND(0.36)
1,2-Dichlorobenzene	NS	mg/kg	ND(0.44)	ND(0.36)
1,3-Dichlorobenzene	NS	mg/kg	ND(0.44)	ND(0.36)
1,4-Dichlorobenzene	NS	mg/kg	ND(0.44)	ND(0.36)
3,3'-Dichlorobenzidine	NS	mg/kg	ND(0.44)	ND(0.36)
2,4-Dinitrotoluene	NS	mg/kg	ND(0.44)	ND(0.36)
2,6-Dinitrotoluene	NS	mg/kg	ND(0.44)	ND(0.36)
Azobenzene	NS	mg/kg	ND(0.44)	ND(0.36)
Fluoranthene	0.42	mg/kg	0.92	ND(0.22)
4-Bromophenyl phenyl ether	NS	mg/kg	ND(0.44)	ND(0.36)
Bis(2-chloroisopropyl)ether	NS	mg/kg	ND(0.53)	ND(0.43)
Bis(2-chloroethoxy)methane	NS	mg/kg	ND(0.48)	ND(0.39)
Hexachlorobutadiene	NS	mg/kg	ND(0.44)	ND(0.36)
Hexachloroethane	NS	mg/kg	ND(0.35)	ND(0.29)
Isophorone	NS	mg/kg	ND(0.4)	ND(0.32)
Naphthalene	0.18	mg/kg	ND(0.44)	ND(0.36)
Nitrobenzene	NS	mg/kg	ND(0.4)	ND(0.32)
Bis(2-ethylhexyl)phthalate	NS	mg/kg	ND(0.44)	ND(0.36)
Butyl benzyl phthalate	NS	mg/kg	ND(0.44)	ND(0.36)
Di-n-butylphthalate	NS	mg/kg	ND(0.44)	ND(0.36)
Di-n-octylphthalate	NS	mg/kg	ND(0.44)	ND(0.36)

**TABLE 3 - SUMMARY OF SEDIMENT ANALYTICAL RESULTS**  
**SUFFOLK DOWNS**  
**525 WILLIAM F. MCCLELLAN HIGHWAY**  
**BOSTON, MASSACHUSETTS 02128**  
**VERTEX PROJECT NO. 43068**

LOCATION	Stage I Freshwater Sediment Screening Criteria	Units	VES-S1	VES-S2
SAMPLING DATE			2/6/2017	2/6/2017
LAB SAMPLE ID			L1703750-01	L1703750-02
SAMPLE TYPE			SEDIMENT	SEDIMENT
SAMPLE DEPTH (ft.)			0.3-0.8	0.3-0.8
Diethyl phthalate	NS	mg/kg	ND(0.44)	ND(0.36)
Dimethyl phthalate	NS	mg/kg	ND(0.44)	ND(0.36)
Benzo(a)anthracene	0.11	mg/kg	0.46	ND(0.22)
Benzo(a)pyrene	0.15	mg/kg	0.49	ND(0.29)
Benzo(b)fluoranthene	NS	mg/kg	0.73	ND(0.22)
Benzo(k)fluoranthene	NS	mg/kg	ND(0.26)	ND(0.22)
Chrysene	0.17	mg/kg	0.54	ND(0.22)
Acenaphthylene	NS	mg/kg	ND(0.35)	ND(0.29)
Anthracene	0.057	mg/kg	ND(0.26)	ND(0.22)
Benzo(ghi)perylene	NS	mg/kg	0.35	ND(0.29)
Fluorene	0.077	mg/kg	ND(0.44)	ND(0.36)
Phenanthrene	0.2	mg/kg	0.46	ND(0.22)
Dibenz(a,h)anthracene	0.033	mg/kg	ND(0.26)	ND(0.22)
Indeno(1,2,3-cd)pyrene	NS	mg/kg	0.37	ND(0.29)
Pyrene	0.2	mg/kg	0.82	ND(0.22)
Aniline	NS	mg/kg	ND(0.53)	ND(0.43)
4-Chloroaniline	NS	mg/kg	ND(0.44)	ND(0.36)
Dibenzofuran	NS	mg/kg	ND(0.44)	ND(0.36)
2-Methylnaphthalene	NS	mg/kg	ND(0.53)	ND(0.43)
Acetophenone	NS	mg/kg	ND(0.44)	ND(0.36)
2,4,6-Trichlorophenol	NS	mg/kg	ND(0.26)	ND(0.22)
2-Chlorophenol	NS	mg/kg	ND(0.44)	ND(0.36)
2,4-Dichlorophenol	NS	mg/kg	ND(0.4)	ND(0.32)
2,4-Dimethylphenol	NS	mg/kg	ND(0.44)	ND(0.36)
2-Nitrophenol	NS	mg/kg	ND(0.95)	ND(0.78)
4-Nitrophenol	NS	mg/kg	ND(0.62)	ND(0.5)
2,4-Dinitrophenol	NS	mg/kg	ND(2.1)	ND(1.7)
Pentachlorophenol	NS	mg/kg	ND(0.88)	ND(0.72)
Phenol	NS	mg/kg	ND(0.44)	ND(0.36)
2-Methylphenol	NS	mg/kg	ND(0.44)	ND(0.36)
3-Methylphenol/4-Methylphenol	NS	mg/kg	ND(0.63)	ND(0.52)
2,4,5-Trichlorophenol	NS	mg/kg	ND(0.44)	ND(0.36)
Pyridine	NS	mg/kg	ND(0.48)	ND(0.39)
SUM	NS	mg/kg	5.14	NA
<b>MCP Total Metals</b>				
Arsenic, Total	33	mg/kg	9.9	20
Barium, Total	NS	mg/kg	200	240
Cadmium, Total	5	mg/kg	ND(1)	0.93
Chromium, Total	110	mg/kg	36	36
Lead, Total	130	mg/kg	200	160
Mercury, Total	0.18	mg/kg	ND(0.168)	0.345
Selenium, Total	NS	mg/kg	ND(5.1)	ND(4.2)
Silver, Total	NS	mg/kg	ND(1)	ND(0.84)
<b>MCP Volatile Organic Compounds (VOCs)</b>				
Methylene chloride	NS	mg/kg	ND(0.025)	ND(0.016)
1,1-Dichloroethane	NS	mg/kg	ND(0.0037)	ND(0.0024)
Chloroform	NS	mg/kg	ND(0.0037)	ND(0.0024)
Carbon tetrachloride	NS	mg/kg	ND(0.0025)	ND(0.0016)
1,2-Dichloropropane	NS	mg/kg	ND(0.0087)	ND(0.0057)
Dibromochloromethane	NS	mg/kg	ND(0.0025)	ND(0.0016)
1,1,2-Trichloroethane	NS	mg/kg	ND(0.0037)	ND(0.0024)
Tetrachloroethene	NS	mg/kg	ND(0.0025)	ND(0.0016)
Chlorobenzene	NS	mg/kg	ND(0.0025)	ND(0.0016)
Trichlorofluoromethane	NS	mg/kg	ND(0.01)	ND(0.0065)
1,2-Dichloroethane	NS	mg/kg	ND(0.0025)	ND(0.0016)
1,1,1-Trichloroethane	NS	mg/kg	ND(0.0025)	ND(0.0016)
Bromodichloromethane	NS	mg/kg	ND(0.0025)	ND(0.0016)
trans-1,3-Dichloropropene	NS	mg/kg	ND(0.0025)	ND(0.0016)
cis-1,3-Dichloropropene	NS	mg/kg	ND(0.0025)	ND(0.0016)
1,3-Dichloropropene, Total	NS	mg/kg	ND(0.0025)	ND(0.0016)
1,1-Dichloropropene	NS	mg/kg	ND(0.01)	ND(0.0065)
Bromoform	NS	mg/kg	ND(0.01)	ND(0.0065)
1,1,2,2-Tetrachloroethane	NS	mg/kg	ND(0.0025)	ND(0.0016)
Benzene	NS	mg/kg	ND(0.0025)	ND(0.0016)
Toluene	NS	mg/kg	ND(0.0037)	ND(0.0024)
Ethylbenzene	NS	mg/kg	ND(0.0025)	ND(0.0016)
Chloromethane	NS	mg/kg	ND(0.01)	ND(0.0065)
Bromomethane	NS	mg/kg	ND(0.005)	ND(0.0033)
Vinyl chloride	NS	mg/kg	ND(0.005)	ND(0.0033)
Chloroethane	NS	mg/kg	ND(0.005)	ND(0.0033)
1,1-Dichloroethene	NS	mg/kg	ND(0.0025)	ND(0.0016)

**TABLE 3 - SUMMARY OF SEDIMENT ANALYTICAL RESULTS**  
**SUFFOLK DOWNS**  
**525 WILLIAM F. MCCLELLAN HIGHWAY**  
**BOSTON, MASSACHUSETTS 02128**  
**VERTEX PROJECT NO. 43068**

LOCATION	Stage I Freshwater Sediment Screening Criteria	Units	VES-S1	VES-S2
SAMPLING DATE			2/6/2017	2/6/2017
LAB SAMPLE ID			L1703750-01	L1703750-02
SAMPLE TYPE			SEDIMENT	SEDIMENT
SAMPLE DEPTH (ft.)			0.3-0.8	0.3-0.8
trans-1,2-Dichloroethene	NS	mg/kg	ND(0.0037)	ND(0.0024)
Trichloroethene	NS	mg/kg	ND(0.0025)	ND(0.0016)
1,2-Dichlorobenzene	NS	mg/kg	ND(0.01)	ND(0.0065)
1,3-Dichlorobenzene	NS	mg/kg	ND(0.01)	ND(0.0065)
1,4-Dichlorobenzene	NS	mg/kg	ND(0.01)	ND(0.0065)
Methyl tert butyl ether	NS	mg/kg	ND(0.005)	ND(0.0033)
p/m-Xylene	NS	mg/kg	ND(0.005)	ND(0.0033)
o-Xylene	NS	mg/kg	ND(0.005)	ND(0.0033)
Xylenes, Total	NS	mg/kg	ND(0.005)	ND(0.0033)
cis-1,2-Dichloroethene	NS	mg/kg	ND(0.0025)	ND(0.0016)
1,2-Dichloroethene, Total	NS	mg/kg	ND(0.0025)	ND(0.0016)
Dibromomethane	NS	mg/kg	ND(0.01)	ND(0.0065)
1,2,3-Trichloropropane	NS	mg/kg	ND(0.01)	ND(0.0065)
Styrene	NS	mg/kg	ND(0.005)	ND(0.0033)
Dichlorodifluoromethane	NS	mg/kg	ND(0.025)	ND(0.016)
Acetone	NS	mg/kg	0.23	0.4
Carbon disulfide	NS	mg/kg	ND(0.01)	ND(0.0065)
Methyl ethyl ketone	NS	mg/kg	0.057	0.099
Methyl isobutyl ketone	NS	mg/kg	ND(0.025)	ND(0.016)
2-Hexanone	NS	mg/kg	ND(0.025)	ND(0.016)
Bromo-chloromethane	NS	mg/kg	ND(0.01)	ND(0.0065)
Tetrahydrofuran	NS	mg/kg	ND(0.01)	ND(0.0065)
2,2-Dichloropropane	NS	mg/kg	ND(0.012)	ND(0.0082)
1,2-Dibromoethane	NS	mg/kg	ND(0.01)	ND(0.0065)
1,3-Dichloropropane	NS	mg/kg	ND(0.01)	ND(0.0065)
1,1,1,2-Tetrachloroethane	NS	mg/kg	ND(0.0025)	ND(0.0016)
Bromobenzene	NS	mg/kg	ND(0.012)	ND(0.0082)
n-Butylbenzene	NS	mg/kg	ND(0.0025)	ND(0.0016)
sec-Butylbenzene	NS	mg/kg	ND(0.0025)	ND(0.0016)
tert-Butylbenzene	NS	mg/kg	ND(0.01)	ND(0.0065)
o-Chlorotoluene	NS	mg/kg	ND(0.01)	ND(0.0065)
p-Chlorotoluene	NS	mg/kg	ND(0.01)	ND(0.0065)
1,2-Dibromo-3-chloropropane	NS	mg/kg	ND(0.01)	ND(0.0065)
Hexachlorobutadiene	NS	mg/kg	ND(0.01)	ND(0.0065)
Isopropylbenzene	NS	mg/kg	ND(0.0025)	ND(0.0016)
p-Isopropyltoluene	NS	mg/kg	ND(0.0025)	ND(0.0016)
Naphthalene	0.18	mg/kg	ND(0.01)	ND(0.0065)
n-Propylbenzene	NS	mg/kg	ND(0.0025)	ND(0.0016)
1,2,3-Trichlorobenzene	NS	mg/kg	ND(0.01)	ND(0.0065)
1,2,4-Trichlorobenzene	NS	mg/kg	ND(0.01)	ND(0.0065)
1,3,5-Trimethylbenzene	NS	mg/kg	ND(0.01)	ND(0.0065)
1,2,4-Trimethylbenzene	NS	mg/kg	ND(0.01)	ND(0.0065)
Diethyl ether	NS	mg/kg	ND(0.012)	ND(0.0082)
Diisopropyl Ether	NS	mg/kg	ND(0.01)	ND(0.0065)
Ethyl-Tert-Butyl-Ether	NS	mg/kg	ND(0.01)	ND(0.0065)
Tertiary-Amyl Methyl Ether	NS	mg/kg	ND(0.01)	ND(0.0065)
1,4-Dioxane	NS	mg/kg	ND(0.1)	ND(0.065)
SUM	NS	mg/kg	0.287	0.499
<b>Total Petroleum Hydrocarbons (TPH)</b>				
TPH	NS	mg/kg	153	146
<b>Volatile Petroleum Hydrocarbons (VPH)</b>				
C5-C8 Aliphatics	NS	mg/kg	ND(12.4)	ND(8.11)
C9-C12 Aliphatics	NS	mg/kg	ND(12.4)	ND(8.11)
C9-C10 Aromatics	NS	mg/kg	ND(12.4)	ND(8.11)
C5-C8 Aliphatics, Adjusted	NS	mg/kg	ND(12.4)	ND(8.11)
C9-C12 Aliphatics, Adjusted	NS	mg/kg	ND(12.4)	ND(8.11)

Notes:

- Units presented in milligrams per kilogram (mg/kg), unless otherwise noted
- For compounds not listed at 310 CMR 40.0996(6), a default UCL of 1,000 mg/kg was used (italicized)
- Freshwater Sediment Screening Criteria obtained from "Revised Sediment Screening Values"
- ND = Not Detected above laboratory reporting limits shown in parentheses
- NA = Not Analyzed
- NS = No Standard
- Bold and highlighted values exceed the applicable standard
- Full analytical results, including QA/QC information and data flags, are detailed in the laboratory analytical report
- Sediment samples collected by The Vertex Companies, Inc.

**TABLE 4 - SUMMARY OF GROUNDWATER ANALYTICAL RESULTS**  
**SUFFOLK DOWNS**  
**525 WILLIAM F. MCCLELLAN HIGHWAY**  
**BOSTON, MASSACHUSETTS 02128**  
**VERTEX PROJECT NO. 43068**

LOCATION	MCP Upper Concentration Limits (UCLs)	MCP Reportable Concentrations RCGW-2	Units	VES-101 (MW)	VES-102 (MW)	VES-103 (MW)	VES-104 (MW)	VES-106 (MW)	VES-108 (MW)	VES-109 (MW)	VES-110 (MW)	VES-111 (MW)	VES-119 (MW)	VES-120 (MW)	
SAMPLING DATE				2/16/2017	2/16/2017	2/16/2017	2/16/2017	2/17/2017	2/17/2017	2/17/2017	2/17/2017	2/17/2017	2/17/2017	2/15/2017	
LAB SAMPLE ID				L1704993-01	L1704993-03	L1704993-04	L1704993-02	L1705151-05	L1705151-03	L1705151-02	L1705151-04	L1705151-07	L1705151-07	L1705151-06	L1704803-05
SAMPLE TYPE				*Groundwater	*Groundwater	*Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	*Groundwater	Groundwater	*Groundwater	Groundwater	
<b>Extractable Petroleum Hydrocarbons (EPH)</b>															
C9-C18 Aliphatics	100000	5000	ug/l	ND(100)											
C19-C36 Aliphatics	100000	50000	ug/l	ND(100)											
C11-C22 Aromatics	100000	5000	ug/l	ND(100)											
C11-C22 Aromatics, Adjusted	100000	5000	ug/l	ND(100)											
Naphthalene	100000	700	ug/l	ND(0.4)	ND(0.4)	ND(0.428)	ND(0.4)	ND(0.4)	ND(0.4)	1.43	ND(0.4)	ND(0.4)	ND(0.4)	ND(0.5)	
2-Methylnaphthalene	100000	2000	ug/l	ND(0.4)	ND(0.4)	ND(0.428)	ND(0.4)	ND(0.5)							
Acenaphthylene	100000	40	ug/l	ND(0.4)	ND(0.4)	ND(0.428)	ND(0.4)	ND(0.5)							
Acenaphthene	100000	10000	ug/l	ND(0.4)	ND(0.4)	ND(0.428)	ND(0.4)	ND(0.4)	ND(0.4)	1.47	ND(0.4)	ND(0.4)	ND(0.4)	ND(0.5)	
Fluorene	400	40	ug/l	ND(0.4)	ND(0.4)	ND(0.428)	ND(0.4)	ND(0.4)	ND(0.4)	0.956	ND(0.4)	ND(0.4)	ND(0.4)	ND(0.5)	
Phenanthrene	100000	10000	ug/l	ND(0.4)	ND(0.4)	ND(0.428)	ND(0.4)	ND(0.4)	ND(0.4)	1.16	ND(0.4)	ND(0.4)	ND(0.4)	ND(0.5)	
Anthracene	600	30	ug/l	ND(0.4)	ND(0.4)	ND(0.428)	ND(0.4)	ND(0.5)							
Fluoranthene	2000	200	ug/l	ND(0.4)	ND(0.4)	ND(0.428)	ND(0.4)	ND(0.4)	ND(0.4)	0.628	ND(0.4)	ND(0.4)	ND(0.4)	ND(0.5)	
Pyrene	600	20	ug/l	ND(0.4)	ND(0.4)	ND(0.428)	ND(0.4)	ND(0.4)	ND(0.4)	0.462	ND(0.4)	ND(0.4)	ND(0.4)	ND(0.5)	
Benzo(a)anthracene	10000	1000	ug/l	ND(0.4)	ND(0.4)	ND(0.428)	ND(0.4)	ND(0.5)							
Chrysene	700	70	ug/l	ND(0.4)	ND(0.4)	ND(0.428)	ND(0.4)	ND(0.5)							
Benzo(b)fluoranthene	4000	400	ug/l	ND(0.4)	ND(0.4)	ND(0.428)	ND(0.4)	ND(0.5)							
Benzo(k)fluoranthene	1000	100	ug/l	ND(0.4)	ND(0.4)	ND(0.428)	ND(0.4)	ND(0.5)							
Benzo(a)pyrene	5000	500	ug/l	ND(0.2)	ND(0.2)	ND(0.1)	ND(0.2)	ND(0.25)							
Indeno(1,2,3-cd)Pyrene	1000	100	ug/l	ND(0.4)	ND(0.4)	ND(0.428)	ND(0.4)	ND(0.5)							
Dibenzo(a,h)anthracene	400	40	ug/l	ND(0.4)	ND(0.4)	ND(0.428)	ND(0.4)	ND(0.5)							
Benzo(ghi)perylene	500	20	ug/l	ND(0.4)	ND(0.4)	ND(0.428)	ND(0.4)	ND(0.5)							
<b>MCP Dissolved Metals</b>															
Antimony, Dissolved	80000	8000	ug/l	ND(4)	ND(4)	ND(4)	NA	NA	NA	NA	ND(4)	NA	ND(4)	NA	
Arsenic, Dissolved	9000	900	ug/l	1.2	1	1	ND(5)	6	7	ND(5)	1.6	7	2.1	ND(5)	
Barium, Dissolved	100000	50000	ug/l	585.1	637.1	664.6	857	1030	54	1240	125.1	29	710.4	527	
Cadmium, Dissolved	50	4	ug/l	ND(0.2)	ND(0.2)	ND(0.2)	ND(4)	ND(4)	ND(4)	ND(4)	ND(0.5)	ND(4)	ND(0.5)	ND(4)	
Chromium, Dissolved	3000	300	ug/l	1	1	ND(1)	ND(10)	ND(10)	ND(10)	ND(10)	ND(1)	ND(10)	ND(1)	ND(10)	
Copper, Dissolved	10000	100000	ug/l	ND(1)	ND(1)	ND(1)	NA	NA	NA	NA	1.7	NA	ND(1)	NA	
Lead, Dissolved	150	10	ug/l	ND(0.5)	ND(0.5)	ND(0.5)	ND(10)	ND(10)	ND(10)	ND(10)	ND(1)	ND(10)	ND(1)	ND(10)	
Mercury, Dissolved	200	20	ug/l	ND(0.2)	ND(0.2)	ND(1)	ND(0.2)								
Nickel, Dissolved	2000	200	ug/l	ND(2)	ND(2)	ND(2)	NA	NA	NA	NA	6.7	NA	ND(2)	NA	
Selenium, Dissolved	1000	100	ug/l	ND(5)	ND(5)	ND(5)	ND(10)	ND(10)	ND(10)	ND(10)	ND(5)	ND(10)	ND(5)	ND(10)	
Silver, Dissolved	1000	7	ug/l	ND(0.4)	ND(0.5)	ND(0.5)	ND(7)	ND(7)	ND(7)	ND(7)	ND(0.5)	ND(7)	ND(0.5)	ND(7)	
Zinc, Dissolved	50000	900	ug/l	ND(10)	ND(10)	ND(10)	NA	NA	NA	NA	31.1	NA	ND(10)	NA	
<b>MCP General Chemistry</b>															
Cyanide, Total	2000	30	ug/l	5	9	6	NA	NA	NA	NA	ND(5)	NA	ND(5)	NA	

**TABLE 4 - SUMMARY OF GROUNDWATER ANALYTICAL RESULTS**  
**SUFFOLK DOWNS**  
**525 WILLIAM F. MCCLELLAN HIGHWAY**  
**BOSTON, MASSACHUSETTS 02128**  
**VERTEX PROJECT NO. 43068**

LOCATION	MCP Upper Concentration Limits (UCLs)	MCP Reportable Concentrations RCGW-2	Units	VES-101 (MW)	VES-102 (MW)	VES-103 (MW)	VES-104 (MW)	VES-106 (MW)	VES-108 (MW)	VES-109 (MW)	VES-110 (MW)	VES-111 (MW)	VES-119 (MW)	VES-120 (MW)
SAMPLING DATE				2/16/2017	2/16/2017	2/16/2017	2/16/2017	2/17/2017	2/17/2017	2/17/2017	2/17/2017	2/17/2017	2/17/2017	2/15/2017
LAB SAMPLE ID				L1704993-01	L1704993-03	L1704993-04	L1704993-02	L1705151-05	L1705151-03	L1705151-02	L1705151-04	L1705151-07	L1705151-06	L1704803-05
SAMPLE TYPE				*Groundwater	*Groundwater	*Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	*Groundwater	Groundwater	*Groundwater	Groundwater
<b>MCP Volatile Organic Compounds (VOCs)</b>														
Methylene chloride	100000	2000	ug/l	ND(2)										
1,1-Dichloroethane	100000	2000	ug/l	ND(1)										
Chloroform	100000	50	ug/l	ND(1)										
Carbon tetrachloride	50000	2	ug/l	ND(1)										
1,2-Dichloropropane	100000	3	ug/l	ND(1)										
Dibromochloromethane	100000	20	ug/l	ND(1)										
1,1,2-Trichloroethane	100000	900	ug/l	ND(1)										
Tetrachloroethene	100000	50	ug/l	ND(1)										
Chlorobenzene	10000	200	ug/l	ND(1)										
Trichlorofluoromethane	10000	100000	ug/l	ND(2)										
1,2-Dichloroethane	100000	5	ug/l	ND(1)										
1,1,1-Trichloroethane	100000	4000	ug/l	ND(1)										
Bromodichloromethane	100000	6	ug/l	ND(1)										
trans-1,3-Dichloropropene	2000	10	ug/l	ND(0.5)										
cis-1,3-Dichloropropene	2000	10	ug/l	ND(0.5)										
1,3-Dichloropropene, Total	2000	10	ug/l	NA	NA	NA	NA	ND(0.5)						
1,1-Dichloropropene	10000	NS	ug/l	ND(2)										
Bromoform	100000	700	ug/l	ND(2)										
1,1,2,2-Tetrachloroethane	100000	9	ug/l	ND(1)										
Benzene	100000	1000	ug/l	ND(0.5)										
Toluene	100000	40000	ug/l	ND(1)	ND(1)	ND(1)	1.3	ND(1)						
Ethylbenzene	100000	5000	ug/l	ND(1)										
Chloromethane	10000	10000	ug/l	ND(2)										
Bromomethane	8000	7	ug/l	ND(2)										
Vinyl chloride	100000	2	ug/l	ND(1)										
Chloroethane	10000	10000	ug/l	ND(2)	ND(2)	ND(2)	7.1	ND(2)						
1,1-Dichloroethene	100000	80	ug/l	ND(1)										
trans-1,2-Dichloroethene	100000	80	ug/l	ND(1)										
Trichloroethene	50000	5	ug/l	ND(1)										
1,2-Dichlorobenzene	80000	2000	ug/l	ND(1)										
1,3-Dichlorobenzene	100000	6000	ug/l	ND(1)										
1,4-Dichlorobenzene	80000	60	ug/l	ND(1)										
Methyl tert butyl ether	100000	5000	ug/l	ND(2)										
p/m-Xylene	100000	3000	ug/l	ND(2)										
o-Xylene	100000	3000	ug/l	ND(1)	ND(1)	ND(1)	1.1	ND(1)						
Xylenes, Total	100000	3000	ug/l	NA	NA	NA	NA	ND(1)						
cis-1,2-Dichloroethene	100000	20	ug/l	ND(1)										
1,2-Dichloroethene, Total	10000	100	ug/l	NA	NA	NA	NA	ND(1)						
Dibromomethane	10000	50000	ug/l	ND(2)										
1,2,3-Trichloropropane	10000	10000	ug/l	ND(2)										
Styrene	60000	100	ug/l	ND(1)										
Dichlorodifluoromethane	10000	100000	ug/l	ND(2)										
Acetone	100000	50000	ug/l	5.8	ND(5)	7.8	33	8.8	7.1	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)
Carbon disulfide	10000	10000	ug/l	ND(2)										
Methyl ethyl ketone	100000	50000	ug/l	ND(5)										
Methyl isobutyl ketone	100000	50000	ug/l	ND(										

**TABLE 4 - SUMMARY OF GROUNDWATER ANALYTICAL RESULTS**  
**SUFFOLK DOWNS**  
**525 WILLIAM F. MCCLELLAN HIGHWAY**  
**BOSTON, MASSACHUSETTS 02128**  
**VERTEX PROJECT NO. 43068**

LOCATION	MCP Upper Concentration Limits (UCLs)	MCP Reportable Concentrations RCGW-2	Units	VES-101 (MW) 2/16/2017	VES-102 (MW) 2/16/2017	VES-103 (MW) 2/16/2017	VES-104 (MW) 2/16/2017	VES-106 (MW) 2/17/2017	VES-108 (MW) 2/17/2017	VES-109 (MW) 2/17/2017	VES-110 (MW) 2/17/2017	VES-111 (MW) 2/17/2017	VES-119 (MW) 2/17/2017	VES-120 (MW) 2/15/2017
SAMPLING DATE				L1704993-01	L1704993-03	L1704993-04	L1704993-02	L1705151-05	L1705151-03	L1705151-02	L1705151-04	L1705151-07	L1705151-06	L1704803-05
LAB SAMPLE ID				*Groundwater	*Groundwater	*Groundwater	Groundwater							
SAMPLE TYPE														
Bromobenzene	10000	10000	ug/l	ND(2)										
n-Butylbenzene	10000	NS	ug/l	ND(2)										
sec-Butylbenzene	10000	NS	ug/l	ND(2)										
tert-Butylbenzene	10000	10000	ug/l	ND(2)										
o-Chlorotoluene	10000	10000	ug/l	ND(2)										
p-Chlorotoluene	10000	NS	ug/l	ND(2)										
1,2-Dibromo-3-chloropropane	10000	1000	ug/l	ND(2)										
Hexachlorobutadiene	30000	50	ug/l	ND(0.6)										
Isopropylbenzene	10000	100000	ug/l	ND(2)										
p-Isopropyltoluene	10000	10000	ug/l	ND(2)										
Naphthalene	100000	700	ug/l	ND(2)	2.8	ND(2)	ND(2)	ND(2)						
n-Propylbenzene	10000	10000	ug/l	ND(2)										
1,2,3-Trichlorobenzene	10000	NS	ug/l	ND(2)										
1,2,4-Trichlorobenzene	100000	200	ug/l	ND(2)										
1,3,5-Trimethylbenzene	10000	1000	ug/l	ND(2)										
1,2,4-Trimethylbenzene	10000	100000	ug/l	ND(2)										
Ethyl ether	10000	10000	ug/l	ND(2)										
Isopropyl Ether	10000	10000	ug/l	ND(2)										
Ethyl-Tert-Butyl-Ether	10000	NS	ug/l	ND(2)										
Tertiary-Amyl Methyl Ether	10000	NS	ug/l	ND(2)										
1,4-Dioxane	100000	6000	ug/l	NA	NA	NA	ND(250)	ND(250)	ND(250)	ND(250)	NA	ND(250)	NA	ND(250)
Tert-Butyl Alcohol	10000	10000	ug/l	ND(10)	ND(10)	ND(10)	NA	NA	NA	NA	ND(10)	NA	ND(10)	NA
SUM	NS	NS	ug/l	5.8	NA	14.9	35.4	8.8	7.1	2.8	NA	NA	NA	NA
<b>Volatile Petroleum Hydrocarbons (VPH)</b>														
C5-C8 Aliphatics	100000	3000	ug/l	ND(50)										
C9-C12 Aliphatics	100000	5000	ug/l	ND(50)										
C9-C10 Aromatics	100000	4000	ug/l	ND(50)										
C5-C8 Aliphatics, Adjusted	100000	3000	ug/l	ND(50)										
C9-C12 Aliphatics, Adjusted	100000	5000	ug/l	ND(50)										

Notes:

- Units presented in micrograms per liter (ug/l), unless otherwise noted
- Upper Concentration Limits (UCLs) obtained from the Massachusetts Contingency Plan (MCP) 310 CMR 40.0996(6) dated April 2014
- For compounds not listed at 310 CMR 40.0996(6), a default UCL of 10,000 ug/l was used (italicized)
- Reportable Concentrations obtained from 310 CMR 40.1600 dated April 2014
- CS = Compound-Specific
- ND = Not Detected above laboratory reporting limits shown in parentheses
- NA = Not Analyzed
- NS = No Standard
- \* = Samples run for additional National Pollutant Discharge Elimination System (NPDES) parameters. Analytical results included on Table 5.
- Bold and highlighted values exceed the applicable standard
- Full analytical results, including QA/QC information and data flags, are detailed in the laboratory analytical report
- Groundwater samples collected by The Vertex Companies, Inc.

**TABLE 4 - SUMMARY OF GROUNDWATER ANALYTICAL RESULTS**  
**SUFFOLK DOWNS**  
**525 WILLIAM F. MCCLELLAN HIGHWAY**  
**BOSTON, MASSACHUSETTS 02128**  
**VERTEX PROJECT NO. 43068**

LOCATION SAMPLING DATE LAB SAMPLE ID SAMPLE TYPE	MCP Upper Concentration Limits (UCLs)	MCP Reportable Concentrations RCGW-2	Units	VES-121 (MW)	VES-123 (MW)	VES-125 (MW)	VES-129 (MW)	VES-132 (MW)	VES-133 (MW)	VES-135 (MW)
				2/16/2017	2/16/2017	2/17/2017	2/15/2017	2/15/2017	2/15/2017	2/15/2017
				L1704993-06	L1704993-05	L1705151-01	L1704803-04	L1704803-01	L1704803-02	L1705305-01
				Groundwater	*Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	*Groundwater
<b>Extractable Petroleum Hydrocarbons (EPH)</b>										
C9-C18 Aliphatics	100000	5000	ug/l	ND(100)						
C19-C36 Aliphatics	100000	50000	ug/l	ND(100)						
C11-C22 Aromatics	100000	5000	ug/l	ND(100)						
C11-C22 Aromatics, Adjusted	100000	5000	ug/l	ND(100)						
Naphthalene	100000	700	ug/l	ND(0.428)	ND(0.4)	ND(0.4)	ND(0.5)	10.4	ND(0.5)	ND(0.5)
2-Methylnaphthalene	100000	2000	ug/l	ND(0.428)	ND(0.4)	ND(0.4)	ND(0.5)	2.11	ND(0.5)	ND(0.5)
Acenaphthylene	100000	40	ug/l	ND(0.428)	ND(0.4)	ND(0.4)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)
Acenaphthene	100000	10000	ug/l	1.08	ND(0.4)	ND(0.4)	ND(0.5)	2.4	0.695	ND(0.5)
Fluorene	400	40	ug/l	0.808	ND(0.4)	ND(0.4)	ND(0.5)	2.16	ND(0.5)	ND(0.5)
Phenanthrene	100000	10000	ug/l	ND(0.428)	0.406	ND(0.4)	ND(0.5)	3.65	0.762	ND(0.5)
Anthracene	600	30	ug/l	ND(0.428)	ND(0.4)	ND(0.4)	ND(0.5)	0.702	ND(0.5)	ND(0.5)
Fluoranthene	2000	200	ug/l	ND(0.428)	ND(0.4)	ND(0.4)	ND(0.5)	0.692	ND(0.5)	ND(0.5)
Pyrene	600	20	ug/l	ND(0.428)	ND(0.4)	ND(0.4)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)
Benzo(a)anthracene	10000	1000	ug/l	ND(0.428)	ND(0.4)	ND(0.4)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)
Chrysene	700	70	ug/l	ND(0.428)	ND(0.4)	ND(0.4)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)
Benzo(b)fluoranthene	4000	400	ug/l	ND(0.428)	ND(0.4)	ND(0.4)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)
Benzo(k)fluoranthene	1000	100	ug/l	ND(0.428)	ND(0.4)	ND(0.4)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)
Benzo(a)pyrene	5000	500	ug/l	ND(0.1)	ND(0.2)	ND(0.2)	ND(0.25)	ND(0.25)	ND(0.25)	ND(0.25)
Indeno(1,2,3-cd)Pyrene	1000	100	ug/l	ND(0.428)	ND(0.4)	ND(0.4)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)
Dibenzo(a,h)anthracene	400	40	ug/l	ND(0.428)	ND(0.4)	ND(0.4)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)
Benzo(ghi)perylene	500	20	ug/l	ND(0.428)	ND(0.4)	ND(0.4)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)
<b>MCP Dissolved Metals</b>										
Antimony, Dissolved	80000	8000	ug/l	NA	ND(4)	ND(4)	NA	NA	NA	ND(4)
Arsenic, Dissolved	9000	900	ug/l	5	6	3.4	6	ND(5)	6	1.3
Barium, Dissolved	100000	50000	ug/l	356	254.2	535.2	520	567	526	625
Cadmium, Dissolved	50	4	ug/l	ND(4)	ND(0.2)	ND(0.5)	ND(4)	ND(4)	ND(4)	ND(0.2)
Chromium, Dissolved	3000	300	ug/l	ND(10)	ND(1)	ND(1)	ND(10)	ND(10)	ND(10)	ND(1)
Copper, Dissolved	10000	100000	ug/l	NA	1.5	ND(1)	NA	NA	NA	ND(1)
Lead, Dissolved	150	10	ug/l	ND(10)	1	ND(1)	ND(10)	ND(10)	ND(10)	ND(0.5)
Mercury, Dissolved	200	20	ug/l	ND(0.2)						
Nickel, Dissolved	2000	200	ug/l	NA	4.8	ND(2)	NA	NA	NA	ND(2)
Selenium, Dissolved	1000	100	ug/l	ND(10)	ND(5)	ND(5)	ND(10)	ND(10)	ND(10)	ND(5)
Silver, Dissolved	1000	7	ug/l	ND(7)	ND(0.5)	ND(0.5)	ND(7)	ND(7)	ND(7)	ND(0.5)
Zinc, Dissolved	50000	900	ug/l	NA	16.1	ND(10)	NA	NA	NA	ND(10)
<b>MCP General Chemistry</b>										
Cyanide, Total	2000	30	ug/l	NA	ND(5)	ND(5)	NA	NA	NA	ND(5)

**TABLE 4 - SUMMARY OF GROUNDWATER ANALYTICAL RESULTS**  
**SUFFOLK DOWNS**  
**525 WILLIAM F. MCCLELLAN HIGHWAY**  
**BOSTON, MASSACHUSETTS 02128**  
**VERTEX PROJECT NO. 43068**

LOCATION SAMPLING DATE LAB SAMPLE ID SAMPLE TYPE	MCP Upper Concentration Limits (UCLs)	MCP Reportable Concentrations RCGW-2	Units	VES-121 (MW)	VES-123 (MW)	VES-125 (MW)	VES-129 (MW)	VES-132 (MW)	VES-133 (MW)	VES-135 (MW)
				2/16/2017	2/16/2017	2/17/2017	2/15/2017	2/15/2017	2/15/2017	2/15/2017
				L1704993-06	L1704993-05	L1705151-01	L1704803-04	L1704803-01	L1704803-02	L1705305-01
				Groundwater	*Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	*Groundwater
<b>MCP Volatile Organic Compounds (VOCs)</b>										
Methylene chloride	100000	2000	ug/l	ND(2)						
1,1-Dichloroethane	100000	2000	ug/l	ND(1)						
Chloroform	100000	50	ug/l	ND(1)						
Carbon tetrachloride	50000	2	ug/l	ND(1)						
1,2-Dichloropropane	100000	3	ug/l	ND(1)						
Dibromochloromethane	100000	20	ug/l	ND(1)						
1,1,2-Trichloroethane	100000	900	ug/l	ND(1)						
Tetrachloroethene	100000	50	ug/l	ND(1)						
Chlorobenzene	10000	200	ug/l	ND(1)						
Trichlorofluoromethane	10000	100000	ug/l	ND(2)						
1,2-Dichloroethane	100000	5	ug/l	ND(1)						
1,1,1-Trichloroethane	100000	4000	ug/l	ND(1)						
Bromodichloromethane	100000	6	ug/l	ND(1)						
trans-1,3-Dichloropropene	2000	10	ug/l	ND(0.5)						
cis-1,3-Dichloropropene	2000	10	ug/l	ND(0.5)						
1,3-Dichloropropene, Total	2000	10	ug/l	NA	NA	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	NA
1,1-Dichloropropene	10000	NS	ug/l	ND(2)						
Bromoform	100000	700	ug/l	ND(2)						
1,1,2,2-Tetrachloroethane	100000	9	ug/l	ND(1)						
Benzene	100000	1000	ug/l	ND(0.5)						
Toluene	100000	40000	ug/l	ND(1)						
Ethylbenzene	100000	5000	ug/l	ND(1)						
Chloromethane	10000	10000	ug/l	ND(2)						
Bromomethane	8000	7	ug/l	ND(2)						
Vinyl chloride	100000	2	ug/l	ND(1)						
Chloroethane	10000	10000	ug/l	ND(2)						
1,1-Dichloroethene	100000	80	ug/l	ND(1)						
trans-1,2-Dichloroethene	100000	80	ug/l	ND(1)						
Trichloroethene	50000	5	ug/l	ND(1)						
1,2-Dichlorobenzene	80000	2000	ug/l	ND(1)						
1,3-Dichlorobenzene	100000	6000	ug/l	ND(1)						
1,4-Dichlorobenzene	80000	60	ug/l	ND(1)						
Methyl tert butyl ether	100000	5000	ug/l	ND(2)						
p/m-Xylene	100000	3000	ug/l	ND(2)						
o-Xylene	100000	3000	ug/l	ND(1)						
Xylenes, Total	100000	3000	ug/l	NA	NA	ND(1)	ND(1)	ND(1)	ND(1)	NA
cis-1,2-Dichloroethene	100000	20	ug/l	ND(1)						
1,2-Dichloroethene, Total	10000	100	ug/l	NA	NA	ND(1)	ND(1)	ND(1)	ND(1)	NA
Dibromomethane	10000	50000	ug/l	ND(2)						
1,2,3-Trichloropropane	10000	10000	ug/l	ND(2)						
Styrene	60000	100	ug/l	ND(1)						
Dichlorodifluoromethane	10000	100000	ug/l	ND(2)						
Acetone	100000	50000	ug/l	ND(5)						
Carbon disulfide	10000	10000	ug/l	ND(2)						
Methyl ethyl ketone	100000	50000	ug/l	ND(5)						
Methyl isobutyl ketone	100000	50000	ug/l	ND(5)						
2-Hexanone	10000	10000	ug/l	ND(5)						
Bromochloromethane	10000	NS	ug/l	ND(2)						
Tetrahydrofuran	10000	50000	ug/l	ND(2)						
2,2-Dichloropropane	10000	NS	ug/l	ND(2)						
1,2-Dibromoethane	100000	2	ug/l	ND(2)						
1,3-Dichloropropane	10000	50000	ug/l	ND(2)						
1,1,1,2-Tetrachloroethane	100000	10	ug/l	ND(1)						

**TABLE 4 - SUMMARY OF GROUNDWATER ANALYTICAL RESULTS**  
**SUFFOLK DOWNS**  
**525 WILLIAM F. MCCLELLAN HIGHWAY**  
**BOSTON, MASSACHUSETTS 02128**  
**VERTEX PROJECT NO. 43068**

LOCATION SAMPLING DATE LAB SAMPLE ID SAMPLE TYPE	MCP Upper Concentration Limits (UCLs)	MCP Reportable Concentrations RCGW-2	Units	VES-121 (MW)	VES-123 (MW)	VES-125 (MW)	VES-129 (MW)	VES-132 (MW)	VES-133 (MW)	VES-135 (MW)
				2/16/2017	2/16/2017	2/17/2017	2/15/2017	2/15/2017	2/15/2017	2/15/2017
				L1704993-06	L1704993-05	L1705151-01	L1704803-04	L1704803-01	L1704803-02	L1705305-01
				Groundwater	*Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	*Groundwater
Bromobenzene	10000	10000	ug/l	ND(2)						
n-Butylbenzene	10000	NS	ug/l	ND(2)						
sec-Butylbenzene	10000	NS	ug/l	ND(2)						
tert-Butylbenzene	10000	10000	ug/l	ND(2)						
o-Chlorotoluene	10000	10000	ug/l	ND(2)						
p-Chlorotoluene	10000	NS	ug/l	ND(2)						
1,2-Dibromo-3-chloropropane	10000	1000	ug/l	ND(2)						
Hexachlorobutadiene	30000	50	ug/l	ND(0.6)						
Isopropylbenzene	10000	100000	ug/l	ND(2)						
p-Isopropyltoluene	10000	10000	ug/l	ND(2)						
Naphthalene	100000	700	ug/l	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	19	ND(2)
n-Propylbenzene	10000	10000	ug/l	ND(2)						
1,2,3-Trichlorobenzene	10000	NS	ug/l	ND(2)						
1,2,4-Trichlorobenzene	100000	200	ug/l	ND(2)						
1,3,5-Trimethylbenzene	10000	1000	ug/l	ND(2)						
1,2,4-Trimethylbenzene	10000	100000	ug/l	ND(2)						
Ethyl ether	10000	10000	ug/l	ND(2)						
Isopropyl Ether	10000	10000	ug/l	ND(2)						
Ethyl-Tert-Butyl-Ether	10000	NS	ug/l	ND(2)						
Tertiary-Amyl Methyl Ether	10000	NS	ug/l	ND(2)						
1,4-Dioxane	100000	6000	ug/l	ND(250)	NA	NA	ND(250)	ND(250)	ND(250)	NA
Tert-Butyl Alcohol	10000	10000	ug/l	NA	ND(10)	ND(10)	NA	NA	NA	ND(10)
SUM	NS	NS	ug/l	NA	NA	NA	NA	19	7.7	NA
<b>Volatile Petroleum Hydrocarbons (VPH)</b>										
C5-C8 Aliphatics	100000	3000	ug/l	ND(50)						
C9-C12 Aliphatics	100000	5000	ug/l	ND(50)						
C9-C10 Aromatics	100000	4000	ug/l	ND(50)						
C5-C8 Aliphatics, Adjusted	100000	3000	ug/l	ND(50)						
C9-C12 Aliphatics, Adjusted	100000	5000	ug/l	ND(50)						

Notes:

- Units presented in micrograms per liter (ug/l), unless otherwise noted
- Upper Concentration Limits (UCLs) obtained from the Massachusetts Contingent CMR 40.0996(6) dated April 2014
- For compounds not listed at 310 CMR 40.0996(6), a default UCL of 10,000 ug/l
- Reportable Concentrations obtained from 310 CMR 40.1600 dated April 2014
- CS = Compound-Specific
- ND = Not Detected above laboratory reporting limits shown in parentheses
- NA = Not Analyzed
- NS = No Standard
- \* = Samples run for additional National Pollutant Discharge Elimination System
- Bold and highlighted values exceed the applicable standard
- Full analytical results, including QA/QC information and data flags, are detailed
- Groundwater samples collected by The Vertex Companies, Inc.

**TABLE 5 - SUMMARY OF NPDES ANALYTICAL RESULTS**  
**SUFFOLK DOWNS**  
**525 WILLIAM F. MCCLELLAN HIGHWAY**  
**BOSTON, MASSACHUSETTS 02128**  
**VERTEX PROJECT NO. 43068**

LOCATION	MCP	EPA Draft NPDES Effluent Limitations for Massachusetts		MCP	Units	VES-101 (MW)	VES-102 (MW)	VES-103 (MW)	VES-110 (MW)	VES-119 (MW)	VES-123 (MW)	VES-125 (MW)	VES-135 (MW)	
SAMPLING DATE	Upper	Reportable	Concentrations	Technology-Based	Water Quality-Based	2/6/2017	2/6/2017	2/6/2017	2/7/2017	2/7/2017	2/17/2017	2/17/2017		
LAB SAMPLE ID	Concentration	Effluent Limitations	Effluent Limitations	RCGW-2	NPDES	NPDES	L1704993-01	L1704993-03	L1704993-04	L1705151-04	L1705151-06	L1704993-05	L1705151-01	L1705305-01
SAMPLE TYPE	Limits	(UCLs)	(TBELs)	(WQBELs)										
<b>Anions by Ion Chromatography</b>														
Chloride	NS	NS	NS	NS	ug/l	113000	71300	483000	194000	195000	27300	488000	456000	
<b>Dissolved Metals</b>														
Iron, Dissolved	NS	NS	NS	NS	ug/l	26000	18000	23000	1900	28000	8600	30000	26000	
<b>Extractable Petroleum Hydrocarbons (EPH)</b>														
C9-C18 Aliphatics	100000	NS	NS	5000	ug/l	ND(100)								
C19-C36 Aliphatics	100000	NS	NS	50000	ug/l	ND(100)								
C11-C22 Aromatics	100000	NS	NS	5000	ug/l	ND(100)								
C11-C22 Aromatics, Adjusted	100000	NS	NS	5000	ug/l	ND(100)								
2-Methylnaphthalene	100000	NS	NS	2000	ug/l	ND(0.4)	ND(0.5)							
Acenaphthene	100000	NS	NS	10000	ug/l	ND(0.4)	ND(0.5)							
Acenaphthylene	100000	NS	NS	40	ug/l	ND(0.4)	ND(0.5)							
Anthracene	600	NS	NS	30	ug/l	ND(0.4)	ND(0.5)							
Benz(a)anthracene	10000	NS	0.0038	1000	ug/l	ND(0.4)	ND(0.5)							
Benz(a)pyrene	5000	NS	0.0038	500	ug/l	ND(0.2)	ND(0.2)	ND(0.1)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.5)	
Benz(b)fluoranthene	4000	NS	0.0038	400	ug/l	ND(0.4)	ND(0.5)							
Benz(g)phenanthrene	500	NS	NS	20	ug/l	ND(0.4)	ND(0.5)							
Chrysene	700	NS	NS	70	ug/l	ND(0.4)	ND(0.5)							
Dibenz(a,h)anthracene	400	NS	0.0038	40	ug/l	ND(0.4)	ND(0.5)							
Fluoranthene	2000	NS	NS	200	ug/l	ND(0.4)	ND(0.5)							
Fluorene	400	NS	NS	40	ug/l	ND(0.4)	ND(0.5)							
Indeno[1,2,3-cd]Pyrene	1000	NS	0.0038	100	ug/l	ND(0.4)	ND(0.5)							
Naphthalene	100000	20	20	700	ug/l	ND(0.4)	ND(0.5)							
Phenanthrene	100000	NS	NS	10000	ug/l	ND(0.4)	ND(0.5)							
Pyrene	600	NS	NS	20	ug/l	ND(0.4)	ND(0.5)							
<b>General Chemistry</b>														
Solids, Total Suspended	NS	30000	30000	NS	ug/l	32000	33000	52000	ND(5000)	48000	19000	52000	20000	
Chlorine, Total Residual	NS	200	7.5	NS	ug/l	ND(20)								
TPH, SGT-HEM	50000	5000	5000	ND(5200)	ug/l	ND(4000)	ND(5200)	ND(4000)	ND(4000)	ND(4400)	ND(4800)	ND(4400)	ND(4000)	
Phenolics, Total	NS	1080	300	NS	ug/l	ND(30)	ND(30)	56	ND(30)	ND(30)	ND(30)	ND(30)	ND(30)	
Chromium, Hexavalent	3000	323	11	300	ug/l	ND(10)								
<b>MCP Dissolved Metals</b>														
Antimony, Dissolved	80000	NS	NS	8000	ug/l	ND(4)								
Arsenic, Dissolved	9000	NS	NS	900	ug/l	1.2	1	1.6	2.1	6	3.4	1.3		
Barium, Dissolved	100000	NS	NS	50000	ug/l	585.1	637.1	664.6	125.1	710.4	254.2	535.2		
Cadmium, Dissolved	50	10.2	0.25	4	ug/l	ND(0.2)	ND(0.2)	ND(0.5)	ND(0.5)	ND(0.2)	ND(0.5)	ND(0.2)		
Chromium, Dissolved	3000	323	74	300	ug/l	1	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)		
Copper, Dissolved	10000	242	3.1	100000	ug/l	ND(1)								
Lead, Dissolved	150	160	2.5	10	ug/l	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(1)	ND(1)	ND(0.5)		
Mercury, Dissolved	200	0.739	0.77	20	ug/l	ND(0.2)	ND(0.2)	NA	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)		
Nickel, Dissolved	2000	1450	8.2	200	ug/l	ND(2)								
Selenium, Dissolved	1000	NS	NS	100	ug/l	ND(5)								
Silver, Dissolved	1000	35.1	1.9	7	ug/l	ND(0.4)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)		
Zinc, Dissolved	50000	420	81	900	ug/l	ND(10)	ND(10)	26.7	48.2	ND(10)	18	ND(10)		
<b>MCP General Chemistry</b>														
Cyanide, Total	2000	178000	1000	30	ug/l	5	9	6	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	
<b>MCP Total Metals</b>														
Antimony, Total	80000	206	640	8000	ug/l	ND(4)								
Arsenic, Total	9000	104	10	900	ug/l	1.2	1	1.6	2.1	6	3.4	1.3		
Cadmium, Total	50	112	0.25	4	ug/l	ND(0.2)	ND(0.2)	ND(0.5)	ND(0.5)	ND(0.2)	ND(0.5)	ND(0.2)		
Chromium, Total	3000	323	74	300	ug/l	ND(1)	1.3	1.1	ND(1)	ND(1)	ND(1)	ND(1)		
Copper, Total	10000	242	3	100000	ug/l	ND(1)								
Lead, Total	150	160	2.5	10	ug/l	ND(1)	1.3	1.4	ND(1)	ND(1)	ND(1)	ND(1)		
Mercury, Total	200	0.739	0.77	20	ug/l	ND(0.2)	ND(0.2)	NA	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)		
Nickel, Total	2000	1450	52	200	ug/l	ND(2)								
Selenium, Total	1900	235.8	5	100	ug/l	ND(5)								
Silver, Total	1000	35.1	3.2	7	ug/l	ND(0.5)								
Zinc, Total	50000	420	120	900	ug/l	ND(10)	26.7	48.2	ND(10)	18	ND(10)	ND(10)		
<b>MCP Volatile Organic Compounds (VOCs)</b>														
1,1,1,2-Tetrachloroethane	100000	NS	NS	10	ug/l	ND(1)								
1,1,1-Trichloroethane	100000	200	200	4000	ug/l	ND(1)								
1,1,2,2-Tetrachloroethane	100000	NS	9	ug/l	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)			
1,1,2-Trichloroethane	100000	5	5	900	ug/l	ND(1)								
1,1-Dichloroethane	100000	70	70	2000	ug/l	ND(1)								
1,1-Dichloropropane	100000	3.2	3.2	80	ug/l	ND(1)								
1,1-Dichloropropene	10000	NS	NS	ND(5)	ug/l	ND(2)								
1,2,3-Trichlorobenzene	10000	NS	NS	NS	ug/l	ND(2)								
1,2,3-Trichloropropane	10000	NS	NS	10000	ug/l	ND(2)								
1,2,4-Trichlorobenzene	100000	NS	NS	200	ug/l	ND(2)								
1,2,4-Trimethylbenzene	100000	NS	NS	1000	ug/l	ND(2)								
1,3-Dichlorobenzene	100000	320	320	6000	ug/l	ND(1)								
1,3-Dichloropropane	100000	NS	NS	50000	ug/l	ND(2)								
1,3-Dichloropropane, Total	2000	NS	NS	10	ug/l	ND(0.5)								
1,4-Dichlorobenzene	80000	5	5	60	ug/l	ND(1)								
2,2-Dichloropropane	10000	NS	NS	10000	ug/l	ND(5)								
2-Hexanone	10000	NS	NS	10000	ug/l	ND(5)								
Acetone	100000	7970	7970	50000	ug/l	5.8	ND(5)	7.8	ND(5)	ND(5)	ND(5)	ND(5)		
Benzene	100000	5	5	1000	ug/l	ND(0.5)								
Bromobenzene	100000	NS	NS	10000	ug/l	ND(2)								
Bromoform	100000	NS	NS	6	ug/l	ND(1)								
Bromomethane	8000	NS	NS	700	ug/l	ND(2)								
Carbon disulfide	10000	NS	NS	10000	ug/l	ND(2)	ND(2)</td							

**TABLE 5 - SUMMARY OF NPDES ANALYTICAL RESULTS  
SUFFOLK DOWNS**

**525 WILLIAM F. MCCLELLAN HIGHWAY  
BOSTON, MASSACHUSETTS 02128  
VERTEX PROJECT NO. 43068**

LOCATION SAMPLING DATE LAB SAMPLE ID SAMPLE TYPE	MCP Upper	EPA Draft NPDES Effluent Limitations for Massachusetts			MCP Reportable	Units	VES-101 (MW)	VES-102 (MW)	VES-103 (MW)	VES-110 (MW)	VES-119 (MW)	VES-123 (MW)	VES-125 (MW)	VES-135 (MW)	
	Concentration	Technology-Based	Water Quality-Based	Concentrations	1/16/2017		2/16/2017	2/16/2017	2/17/2017	2/17/2017	2/16/2017	2/17/2017	2/17/2017	2/15/2017	
	Limits (UCLs)	Effluent Limitations (TBELs)	Effluent Limitations (WGBELs)	RCGW-2	NPDES		NPDES								
Tetrahydrofuran	10000	NS	NS	50000	ug/l	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(1)	
Toluene	100000	NS	NS	40000	ug/l	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	ND(2)	
trans-1,2-Dichloroethene	100000	NS	NS	80	ug/l	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	
trans-1,3-Dichloropropene	2000	NS	NS	10	ug/l	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(1)	
Trichloroethene	5000	5	5	5	ug/l	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	ND(0.5)	
Trichlorofluoromethane	10000	NS	NS	100000	ug/l	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(1)	
Vinyl chloride	100000	2	2	2	ug/l	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	ND(1)	ND(2)	
Xylenes, Total	100000	NS	NS	3000	ug/l	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	NA	
Total BTEX	NS	100	100	NS	ug/l	ND(CS)	ND(CS)	ND(CS)	ND(CS)	ND(CS)	ND(CS)	ND(CS)	ND(CS)	ND(CS)	
SUM	NS	NS	NS	NS	ug/l	ND(CS)	ND(CS)	ND(CS)	ND(CS)	ND(CS)	ND(CS)	ND(CS)	ND(CS)	NA	
<b>MCPP VOCs by SIM</b>															
1,4-Dioxane	100000	200	200	6000	ug/l	ND(3)	ND(3)	ND(3)	ND(3)	ND(3)	ND(3)	ND(3)	ND(3)	ND(3)	ND(3)
<b>Microextructables by GC</b>															
1,2-Dibromoethane	100000	0.05	0.05	2	ug/l	ND(0.01)	ND(0.01)	ND(0.01)	ND(0.01)	ND(0.01)	ND(0.01)	ND(0.01)	ND(0.01)	ND(0.01)	ND(0.01)
<b>Polychlorinated Biphenyls (PCBs)</b>															
Aroclor 1016	NS	NS	NS	NS	ug/l	ND(0.25)	ND(0.25)	ND(0.25)	ND(0.25)	ND(0.25)	ND(0.25)	ND(0.25)	ND(0.25)	ND(0.25)	ND(0.25)
Aroclor 1221	NS	NS	NS	NS	ug/l	ND(0.25)	ND(0.25)	ND(0.25)	ND(0.25)	ND(0.25)	ND(0.25)	ND(0.25)	ND(0.25)	ND(0.25)	ND(0.25)
Aroclor 1232	NS	NS	NS	NS	ug/l	ND(0.25)	ND(0.25)	ND(0.25)	ND(0.25)	ND(0.25)	ND(0.25)	ND(0.25)	ND(0.25)	ND(0.25)	ND(0.25)
Aroclor 1242	NS	NS	NS	NS	ug/l	ND(0.25)	ND(0.25)	ND(0.25)	ND(0.25)	ND(0.25)	ND(0.25)	ND(0.25)	ND(0.25)	ND(0.25)	ND(0.25)
Aroclor 1248	NS	NS	NS	NS	ug/l	ND(0.25)	ND(0.25)	ND(0.25)	ND(0.25)	ND(0.25)	ND(0.25)	ND(0.25)	ND(0.25)	ND(0.25)	ND(0.25)
Aroclor 1254	NS	NS	NS	NS	ug/l	ND(0.25)	ND(0.25)	ND(0.25)	ND(0.25)	ND(0.25)	ND(0.25)	ND(0.25)	ND(0.25)	ND(0.25)	ND(0.25)
Aroclor 1260	NS	NS	NS	NS	ug/l	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.21)
Total PCBs	100	0.000064	0.000064	5	ug/l	ND(0.25)	ND(0.25)	ND(0.25)	ND(0.25)	ND(0.25)	ND(0.25)	ND(0.25)	ND(0.25)	ND(0.25)	ND(0.25)
<b>Semi-Volatile Organic Compounds (SVOCs)</b>															
1,2,4-Trichlorobenzene	100000	NS	NS	200	ug/l	ND(4.9)	ND(4.9)	ND(5)	ND(5)	ND(5)	ND(5)	ND(4.8)	ND(5)	ND(4.8)	ND(4.8)
1,2-Dichlorobenzene	80000	600	600	2000	ug/l	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(1.9)	ND(2)	ND(1.9)	ND(1.9)
1,3-Dichlorobenzene	100000	320	320	6000	ug/l	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(1.9)	ND(2)	ND(1.9)	ND(1.9)
1,4-Dichlorobenzene	80000	5	5	60	ug/l	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(1.9)	ND(2)	ND(1.9)	ND(1.9)
2,4,5-Trichlorophenol	100000	NS	NS	3000	ug/l	ND(4.9)	ND(4.9)	ND(5)	ND(5)	ND(5)	ND(5)	ND(4.8)	ND(5)	ND(4.8)	ND(4.8)
2,4,6-Trichlorophenol	50000	NS	NS	500	ug/l	ND(4.9)	ND(4.9)	ND(5)	ND(5)	ND(5)	ND(5)	ND(4.8)	ND(5)	ND(4.8)	ND(4.8)
2,4-Dichlorophenol	100000	NS	NS	2000	ug/l	ND(4.9)	ND(4.9)	ND(5)	ND(5)	ND(5)	ND(5)	ND(4.8)	ND(5)	ND(4.8)	ND(4.8)
2,4-Dimethylphenol	100000	NS	NS	40000	ug/l	ND(4.9)	ND(4.9)	ND(5)	ND(5)	ND(5)	ND(5)	ND(4.8)	ND(5)	ND(4.8)	ND(4.8)
2,4-Dinitrophenol	100000	NS	NS	20000	ug/l	ND(20)	ND(20)	ND(20)	ND(20)	ND(20)	ND(20)	ND(19)	ND(20)	ND(20)	ND(19)
2,4-Dinitrotoluene	100000	NS	NS	20000	ug/l	ND(4.9)	ND(4.9)	ND(5)	ND(5)	ND(5)	ND(5)	ND(4.8)	ND(5)	ND(4.8)	ND(4.8)
2,6-Dinitrotoluene	100000	NS	NS	10000	ug/l	ND(4.9)	ND(4.9)	ND(5)	ND(5)	ND(5)	ND(5)	ND(4.8)	ND(5)	ND(4.8)	ND(4.8)
2-Chlorophenol	100000	NS	NS	7000	ug/l	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(1.9)	ND(2)	ND(1.9)	ND(1.9)
2-Methylphenol	100000	NS	NS	50000	ug/l	ND(4.9)	ND(4.9)	ND(5)	ND(5)	ND(5)	ND(5)	ND(4.8)	ND(5)	ND(4.8)	ND(4.8)
2-Nitroaniline	100000	NS	NS	NS	ug/l	ND(4.9)	ND(4.9)	ND(5)	ND(5)	ND(5)	ND(5)	ND(4.8)	ND(5)	ND(4.8)	ND(4.8)
2-Nitrophenol	100000	NS	NS	10000	ug/l	ND(9.8)	ND(9.8)	ND(10)	ND(10)	ND(10)	ND(10)	ND(9.6)	ND(10)	ND(9.6)	ND(10)
3,3'-Dichlorobenzidine	20000	NS	NS	2000	ug/l	ND(4.9)	ND(4.9)	ND(5)	ND(5)	ND(5)	ND(5)	ND(4.8)	ND(5)	ND(4.8)	ND(4.8)
3-Methylphenol/4-Methylphenol	100000	NS	NS	50000	ug/l	ND(4.9)	ND(4.9)	18	18	18	18	ND(4.8)	ND(5)	ND(4.8)	ND(4.8)
3-Nitroaniline	100000	NS	NS	NS	ug/l	ND(4.9)	ND(4.9)	ND(5)	ND(5)	ND(5)	ND(5)	ND(4.8)	ND(5)	ND(4.8)	ND(4.8)
4,6-Dinitro-o-cresol	100000	NS	NS	5000	ug/l	ND(9.8)	ND(9.8)	ND(10)	ND(10)	ND(10)	ND(10)	ND(9.6)	ND(10)	ND(9.6)	ND(10)
4-Bromophenyl phenyl ether	100000	NS	NS	10000	ug/l	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(1.9)	ND(2)	ND(1.9)	ND(1.9)
4-Chloroaniline	100000	NS	NS	3000	ug/l	ND(4.9)	ND(4.9)	ND(5)	ND(5)	ND(5)	ND(5)	ND(4.8)	ND(5)	ND(4.8)	ND(4.8)
4-Chlorophenyl phenyl ether	100000	NS	NS	100000	ug/l	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(1.9)	ND(2)	ND(1.9)	ND(1.9)
4-Nitroaniline	100000	NS	NS	10000	ug/l	ND(4.9)	ND(4.9)	ND(5)	ND(5)	ND(5)	ND(5)	ND(4.8)	ND(5)	ND(4.8)	ND(4.8)
4-Nitrophenol	100000	NS	NS	10000	ug/l	ND(3.8)	ND(3.8)	ND(10)	ND(10)	ND(10)	ND(10)	ND(9.6)	ND(10)	ND(9.6)	ND(10)
Aniline	100000	NS	NS	100000	ug/l	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(1.9)	ND(2)	ND(1.9)	ND(1.9)
Azobenzene	100000	NS	NS	5000	ug/l	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(1.9)	ND(2)	ND(1.9)	ND(1.9)
Benzidine	100000	NS	NS	1000	ug/l	ND(20)	ND(20)	ND(20)	ND(20)	ND(20)	ND(20)	ND(19)	ND(20)	ND(19)	ND(19)
Benzic Acid	100000	NS	NS	100000	ug/l	ND(49)	ND(49)	ND(50)	ND(50)	ND(50)	ND(50)	ND(49)	ND(50)	ND(49)	ND(49)
Benzyl Alcohol	100000	NS	NS	NS	ug/l	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(1.9)	ND(2)	ND(1.9)	ND(1.9)
Biphenyl	100000	NS	NS	200	ug/l	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(1.9)	ND(2)	ND(1.9)	ND(1.9)
Bis(2-chloroethoxy)methane	100000	NS	NS	50000	ug/l	ND(4.9)	ND(4.9)	ND(5)	ND(5)	ND(5)	ND(5)	ND(4.8)	ND(5)	ND(4.8)	ND(4.8)
Bis(2-chloroethyl)ether	100000	NS	NS	30	ug/l	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(1.9)	ND(2)	ND(1.9)	ND(1.9)
Bis(2-chloroisopropyl)ether	100000	NS	NS	100	ug/l	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(1.9)	ND(2)	ND(1.9)	ND(1.9)
Bis(2-ethylhexyl)phthalate	100000	101	2.2	50000	ug/l	ND(2.9)	3.6	ND(3)	ND(3)	ND(3)	ND(3)	ND(2.9)	ND(3)	ND(2.9)	ND(2.9)
Butyl benzyl phthalate	100000	NS	NS	10000	ug/l	ND(4.9)	ND(4.9)	ND(5)	ND(5)	ND(5)	ND(5)	ND(4.8)	ND(5)	ND(4.8)	ND(4.8)
Carbazole	100000	NS	NS	NS	ug/l	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(1.9)	ND(2)	ND(1.9)	ND(1.9)
Dibenzofuran	100000	NS	NS	10000	ug/l	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(1.9)	ND(2)	ND(1.9)	ND(1.9)
Diethyl phthalate	100000	NS	NS	9000	ug/l	ND(4.9)	ND(4.9)	ND(5)	ND(5)	ND(5)	ND(5)	ND(4.8)	ND(5)	ND(4.8)	ND(4.8)
Dimethyl phthalate	100000	NS	NS	50000	ug/l	ND(4.9)	ND(4.9)	ND(5)	ND(5)	ND(5)	ND(5)	ND(4.8)	ND(5)	ND(4.8)	ND(4.8)
Di-n-butylphthalate	100000	NS	NS	5000	ug/l	ND(4.9)	ND(4.9)	ND(5)	ND(5)	ND(5)	ND(5)	ND(4.8)	ND(5)	ND(4.8)	ND(4.8)
Di-n-octylphthalate	100000	NS	NS	100000	ug/l	ND(4.9)	ND(4.9)	ND(5)	ND(5)	ND(5)	ND(5)	ND(4.8)	ND(5)	ND(4.8)	ND(4.8)
Hexachlorocyclopentadiene	100000	NS	NS	5000	ug/l	ND(20)	ND(20)	ND(20)	ND(20)	ND(20)	ND(20)	ND(19)	ND(20)	ND(19)	ND(19)
Isophorone	100000	NS	NS	10000	ug/l	ND(4.9)	ND(4.9)	ND(5)	ND(5)	ND(5)	ND(5)	ND(4.8)	ND(5)	ND(4.8)	ND(4.8)
NDPA/DPA	100000	NS	NS	10000	ug/l	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(1.9)	ND(2)	ND(1.9)	ND(1.9)
Nitrobenzene	100000	NS	NS	50000	ug/l	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(1.9)	ND(2)	ND(1.9)	ND(1.9)
p-Nitrosodimethylamine	100000	NS	NS	5000	ug/l	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(1.9)	ND(2)	ND(1.9)	ND(1.9)
p-Nitrosod-n-propylamine	100000	NS	NS	5000	ug/l	ND(4.9)	ND(4.9)	ND(5)	ND(5)	ND(5)	ND(5)	ND(4.8)	ND(5)	ND(4.8)	ND(4.8)
p-Chloro-m-cresol	100000	NS	NS	100000	ug/l	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(2)	ND(1.9)	ND(2)	ND(1.9)	ND(1.9)
Phenol	100000	1080	300	2000	ug/l	ND(4.9)	ND(4.9)	6.2	6.2	6.2	6.2	ND(4.8)	ND(5)	ND(4.8)	ND(4.8)
Pyridine	100000	NS	NS	50000	ug/l	ND(3.4)	ND(3.5)	ND(3.5)	ND(3.5)	ND(3.5)	ND(3.5)	ND(3.4)	ND(3.5)	ND(3.4)	ND(3.4)
Total Phthalates	NS	190	3	NS	ug/l	ND(CS)	3.6	ND(CS)	ND(CS)	ND(CS)	ND(CS)	NA	ND(CS)	ND(CS)	ND(CS)
SUM	NS	NS	NS	NS	ug/l	ND(CS)	3.6	24.2	ND(CS)	ND(CS)	ND(CS)	ND(CS)	ND(CS)	ND(CS)	ND(CS)
<b>Semivolatile Organics by GC/MS-SIM</b>															
1-Methylnaphthalene	100000	NS	NS	NS	ug/l	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)						

#### Notes:

- Units presented in micrograms per liter ( $\mu\text{g/l}$ ), unless otherwise noted
- Upper Concentration Limits (UCLs) obtained from the Massachusetts

- Upper Concentration Limits (UCLs) obtained from the Massachusetts Contingency Plan (MCP) § 310 CMR 40.0996(6) dated April 2014
- For compounds not listed at 310 CMR 40.0996(6), a default UCL of 10,000 ug/l was used (*italicized*) National Pollutant Discharge Elimination System (NPDES) Criteria obtained from the United States Environmental Protection Agency (EPA) website.

- National Pollutant Discharge Elimination System (NPDES) Criteria obtained from the United States Environmental Protection Agency (EPA) Draft National Pollutant Discharge Elimination System (NPDES) General Permit for Remediation Activity Discharges, NPDES Permit No. MG910000 and NHG910000, dated 2016. Where a freshwater and saltwater value is provided, the lower of the two was selected.
- Reportable Concentrations obtained from 310 CMR 40.1600 dated April 2014

- Reportable Concentrations obtained from 310 CMR 40.1600 dated April 2014
- CS = Compound-Specific

- CS = Compound-Specific
- ND = Not Detected above

- ND = Not Detected
- NA = Not Analyzed

- NS = No Standard

- Bold and highlighted values exceed the applicable standard

TBELs  
WQBELs

- Full analytical results, including QA/QC information and data flags, are detailed in the laboratory analytical report.

- Groundwater samples collected by The Vertex Companies, Inc.

TBELs  
WQBELs

**APPENDIX A:**  
**Soil Boring/Monitoring Well Construction Logs**

SOIL BORING/MONITORING WELL CONSTRUCTION LOG							DESIGNATION	VES-101 (MW)		
<b>VERTEX®</b>		PROJECT:	Suffolk Downs Racecourse			PROJECT NO.:	43068			
		LOCATION:	525 William F. McClellan Highway, Boston, MA			DRILLER:	GeoLogic Earth Explorations, Inc.			
		INSTALLATION DATES	2/7/2017			INSPECTOR:	Kristen Sarson			
SAMPLER		CASING		CORE		GROUNDWATER DEPTH MEASUREMENTS				
TYPE	Split Spoon	TYPE	Hollow Stem	BARREL TYPE		ELEVATION INFORMATION	DATE:	2/16/2017		
SIZE (ID)	2"	MATERIAL	Steel	SIZE (ID)		DATUM:	N/A	8:00		
HAMMER (LB.)	140	DIAMETER	6"	DIAMETER		TOC:	N/A	DEPTH (FT):	6.64	
FALL (IN.)	30	LENGTH	5'			GS:	N/A	ELEVATION (FT):	NM	
SAMPLE INFORMATION							WELL CONST	PID (PPM)		
DEPTH ELEVATION	INTERVAL	PEN / REC	BLOWS / 6"	SPT	STRATA CHANGE (Ft/El)	SOIL DESCRIPTION				
0	0-2'	24/6"	11	N/A		0-6" Dark brown fine to coarse SAND, some fine to coarse gravel, dry, no odor.		<1		
			8							
1			5							
			7							
2										
3										
4										
5	5-7'	24/12"	1	N/A		0-8" Dark brown mottled fine to coarse SAND, some fine to coarse gravel, wet, no odor.		6.4		
			1							
6			2			8-12" Brown SILT with organics (roots throughout), wet, no odor.		2.5		
			3							
7										
8										
9										
10	10-12'	24/20"	1	N/A		0-20" Grey SILT, strong sulfur like odor, wet.		104		
			1							
11			1							
			1							
12						End of Boring at 12 feet bgs. Refusal not encountered.				
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										
23										
24										
25										
26										
27										
28										
29										
MODIFIER		SAND AND GRAVEL		SILT AND CLAY		LOCATION:	Barn area.		ELL CONSTRUCTI	
1 - 10%	Trace	Density	Blows (N)	Consistency	Blows (N)	MONITORING WELL CONSTRUCTION DATA				
10 - 20%	Little	Very loose	0 - 4	Very soft	<2	DEPTH:	12'	DEPTH/TYPE PACK:	Sand 1.5-12'	Screen Riser
20 - 35%	Some	Loose	4 - 10	Soft	2 - 4	DIAMETER (inches):	2"	DEPTH/TYPE SEAL:	Bentonite 1.5-2.5'	Concrete
35 - 50%	And	Medium Dense	10 - 30	Medium Stiff	4 - 8	MATERIAL:	PVC	BACKFILL MATERIAL:	Native/Concrete	Bentonite Native Sand Grout
		Dense	30 - 50	Stiff	8 - 15	SLOT SIZE (inches):	0.01	SURFACE SEAL:	Concrete	
		Very Dense	>50	Very Stiff	15 - 30	SCREEN INTERVAL:	2-12'	ROADBOX DESC.:	Standpipe	
				Hard	>30	LENGTH OF RISER:	5'			
NOTES:										
1. Soil are visually classified in general accordance with the Modified Burmister Soil Classification System.										
2. Photoionization detector (PID) field screening conducted with a 10.6 eV Mini Rae 2000 PID calibrated to provide readings of total ionizable volatile organic compounds as isobutylene equivalents.										

SOIL BORING/MONITORING WELL CONSTRUCTION LOG							DESIGNATION	VES-102 (MW)		
<b>VERTEX®</b>		PROJECT:	Suffolk Downs Racecourse			PROJECT NO.:	43068			
		LOCATION:	525 William F. McClellan Highway, Boston, MA			DRILLER:	GeoLogic Earth Explorations, Inc.			
		INSTALLATION DATES	2/7/2017			INSPECTOR:	Benjamin Sivonen			
SAMPLER		CASING		CORE		GROUNDWATER DEPTH MEASUREMENTS				
TYPE	Split Spoon	TYPE	Hollow Stem	BARREL TYPE		ELEVATION INFORMATION	DATE:	2/16/2017		
SIZE (ID)	2"	MATERIAL	Steel	SIZE (ID)		DATUM:	N/A	10:00		
HAMMER (LB.)	140	DIAMETER	6"	DIAMETER		TOC:	N/A	DEPTH (Ft):	8.57	
FALL (IN.)	30	LENGTH	5'			GS:	N/A	ELEVATION (Ft):	NM	
SAMPLE INFORMATION							WELL CONST	PID (PPM)		
DEPTH ELEVATION	INTERVAL	PEN / REC	BLOWS / 6"	SPT	STRATA CHANGE (Ft/El.)	SOIL DESCRIPTION				
0	0-2'	24/15"	11	N/A		0-10" Dark brown fine to medium SAND, some silt and organics (top soil), dry, no odor.		2.0		
			12			10-15" Tan medium SAND, some gravel, dry, no odor.		1.5		
1			11							
			15							
2										
3										
4										
5	5-7'	24/12"	10	N/A		0-12" Black fine SAND, some silt, trace brick and coal ash, moist-wet, no odor.		< 1.0		
			2							
6			3							
			2							
7										
8										
9										
10	10-12'	24/20"	3	N/A		0-20" Grey CLAY, some organics, strong sulfur like odor, wet.		79.2		
			0							
11			0							
			2							
12						End of Boring at 12 feet bgs. Refusal not encountered.				
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										
23										
24										
25										
26										
27										
28										
29										
MODIFIER		SAND AND GRAVEL		SILT AND CLAY		LOCATION:	Barn area.		ELL CONSTRUCTIO	
1 - 10%	Trace	Density	Blows (N)	Consistency	Blows (N)	MONITORING WELL CONSTRUCTION DATA				
10 - 20%	Little	Very loose	0 - 4	Very soft	<2	DEPTH:	12'	DEPTH/TYPE PACK:	Sand 1.5-12'	Screen Riser
20 - 35%	Some	Loose	4 - 10	Soft	2 - 4	DIAMETER (inches):	2"	DEPTH/TYPE SEAL:	Bentonite 1-1.5'	Concrete Bentonite
35 - 50%	And	Medium Dense	10 - 30	Medium Stiff	4 - 8	MATERIAL:	PVC	BACKFILL MATERIAL:	Native/Concrete	Native Sand Grout
		Dense	30 - 50	Stiff	8 - 15	SLOT SIZE (inches):	0.01	SURFACE SEAL:	Concrete	
		Very Dense	>50	Very Stiff	15 - 30	SCREEN INTERVAL:	2-12'	ROADBOX DESC.:	Standpipe	
				Hard	>30	LENGTH OF RISER:	5'			
NOTES:										
1. Soil are visually classified in general accordance with the Modified Burmister Soil Classification System.										
2. Photoionization detector (PID) field screening conducted with a 10.6 eV Mini Rae 2000 PID calibrated to provide readings of total ionizable volatile organic compounds as isobutylene equivalents.										

SOIL BORING/MONITORING WELL CONSTRUCTION LOG								DESIGNATION	VES-103 (MW)		
<b>VERTEX®</b>		PROJECT:	Suffolk Downs Racecourse				PROJECT NO.:	43068			
		LOCATION:	525 William F. McClellan Highway, Boston, MA				DRILLER:	GeoLogic Earth Explorations, Inc.			
		INSTALLATION DATES		2/10/2017		INSPECTOR:	Kristen Sarson				
SAMPLER		CASING		CORE		GROUNDWATER DEPTH MEASUREMENTS					
TYPE	Split Spoon	TYPE	Hollow Stem	BARREL TYPE		ELEVATION INFORMATION	DATE:	2/16/2017			
SIZE (ID)	2"	MATERIAL	Steel	SIZE (ID)		DATUM:	N/A	15:00			
HAMMER (LB.)	140	DIAMETER	6"	DIAMETER		TOC:	N/A	DEPTH (FT):	8.28 bgs		
FALL (IN.)	30	LENGTH	5'			GS:	N/A	ELEVATION (FT):	NM		
SAMPLE INFORMATION								WELL CONST	PID (PPM)		
DEPTH ELEVATION	INTERVAL	PEN / REC	BLOWS / 6"	SPT	STRATA CHANGE (Ft/El)	SOIL DESCRIPTION					
0	0-2'	24/20"	9	N/A		0-10" Dark grey fine to medium SAND, some coarse sand to fine gravel, dry. 10-12" COBBLES.					
			9			12-18" Tan fine to coarse SAND, some fine to coarse gravel, damp, no odor.			<1		
1			11			18-20" Dark brown and black fine to coarse SAND and coarse GRAVEL, damp, no odor.					
			8								
2											
3											
4											
5	5-7'	24/10"	1	N/A		0-10" Dark brown fine to coarse SAND, some debris (glass, ceramic, brick), trace silt, wet, no odor.				1.4	
			2								
6			2								
			2								
7											
8											
9											
10	10-12'	24/22"	W.O.H.			0-22" Tan SILT and ORGANICS (roots), sulfur odor, wet.				609	
			W.O.H.								
11			W.O.H.								
			W.O.H.								
12											
13											
14											
15						End of Boring at 15 feet bgs. Refusal not encountered.					
16											
17											
18											
19											
20											
21											
22											
23											
24											
25											
26											
27											
28											
29											
MODIFIER	SAND AND GRAVEL		SILT AND CLAY		LOCATION:	Barn area.			ELL CONSTRUCTI		
1 - 10%	Trace	Density	Blows (N)	Consistency	Blows (N)	MONITORING WELL CONSTRUCTION DATA					
10 - 20%	Little	Very loose	0 - 4	Very soft	<2	DEPTH:	15'	DEPTH/TYPE PACK:	Sand 4-15'	Screen	Riser
20 - 35%	Some	Loose	4 - 10	Soft	2 - 4	DIAMETER (inches):	2"	DEPTH/TYPE SEAL:	Bentonite 3-4"	Concrete	
35 - 50%	And	Medium Dense	10 - 30	Medium Stiff	4 - 8	MATERIAL:	PVC	BACKFILL MATERIAL:	Native/Concrete	Bentonite	
		Dense	30 - 50	Stiff	8 - 15	SLOT SIZE (inches):	0.01	SURFACE SEAL:	Concrete	Native	
		Very Dense	>50	Very Stiff	15 - 30	SCREEN INTERVAL:	5-15'	ROADBOX DESC.:	Standpipe	Sand	
				Hard	>30	LENGTH OF RISER:	8'			Grout	
NOTES:											
1. Soil are visually classified in general accordance with the Modified Burmister Soil Classification System.											
2. Photoionization detector (PID) field screening conducted with a 10.6 eV Mini Rae 2000 PID calibrated to provide readings of total ionizable volatile organic compounds as isobutylene equivalents.											
3. W.O.H. = weight of hammer.											

SOIL BORING/MONITORING WELL CONSTRUCTION LOG							DESIGNATION	VES-104 (MW)		
<b>VERTEX®</b>		PROJECT:	Suffolk Downs Racecourse			PROJECT NO.:	43068			
		LOCATION:	525 William F. McClellan Highway, Boston, MA			DRILLER:	GeoLogic Earth Explorations, Inc.			
		INSTALLATION DATES	2/14/2017			INSPECTOR:	Kristen Sarson			
SAMPLER		CASING	CORE		GROUNDWATER DEPTH MEASUREMENTS					
TYPE	Split Spoon	TYPE	Hollow Stem	BARREL TYPE	ELEVATION INFORMATION	DATE:	2/16/2017			
SIZE (ID)	2"	MATERIAL	Steel	SIZE (ID)	DATUM:	N/A	13:00			
HAMMER (LB.)	140	DIAMETER	6"	DIAMETER	TOC:	N/A	DEPTH (FT):	8.15		
FALL (IN.)	30	LENGTH	5'		GS:	N/A	ELEVATION (FT):	NM		
SAMPLE INFORMATION							WELL CONST	PID (PPM)		
DEPTH ELEVATION	INTERVAL	PEN / REC	BLOWS / 6"	SPT	STRATA CHANGE (Ft/EL)	SOIL DESCRIPTION				
0	0-2'	24/18"	4	N/A		0-18" Dark brown fine to medium SAND, some silt, gravel and debris (ash, glass, wood, paper), dry, no odor.		1.2		
			5							
1			5							
			7							
2	2-4'	24/10"	4	N/A		0-10" Dark brown fine to medium SAND, some silt, gravel and debris (ash, glass, wood, paper), dry, no odor.		1.5		
			5							
3			5							
			5							
4										
5	5-7'	24/4"	1	N/A		0-4" Dark brown fine to coarse SAND and DEBRIS (glass, brick, ceramic, some gravel), damp, no odor.		2.0		
			1							
6			1							
			1							
7										
8										
9										
10	10-12'	24/0"	1	N/A		No recovery - sleeve wet.				
			1							
11			1							
			1							
12	12-14'	24/24"	1	N/A		0-24" Grey SILT and ORGANICS (roots), trace fine sand, slight sulfur odor.		361		
			1							
13			1							
			1							
14										
15						End of Boring at 15 feet bgs. Refusal not encountered.				
16										
17										
18										
19										
20										
21										
22										
23										
24										
25										
26										
27										
28										
29										
MODIFIER		SAND AND GRAVEL		SILT AND CLAY		LOCATION:	Barn area.		ELL CONSTRUCTI	
1 - 10%	Trace	Density	Blows (N)	Consistency	Blows (N)	MONITORING WELL CONSTRUCTION DATA				
10 - 20%	Little	Very loose	0 - 4	Very soft	<2	DEPTH:	15'	DEPTH/TYPE PACK:	Sand 4-15'	Screen Riser
20 - 35%	Some	Loose	4 - 10	Soft	2 - 4	DIAMETER (inches):	2"	DEPTH/TYPE SEAL:	Bentonite 3-4"	Concrete Bentonite
35 - 50%	And	Medium Dense	10 - 30	Medium Stiff	4 - 8	MATERIAL:	PVC	BACKFILL MATERIAL:	Native/Concrete	Native Sand Grout
		Dense	30 - 50	Stiff	8 - 15	SLOT SIZE (inches):	0.01	SURFACE SEAL:	Concrete	
		Very Dense	>50	Very Stiff	15 - 30	SCREEN INTERVAL:	5-15'	ROADBOX DESC.:	Standpipe	
				Hard	>30	LENGTH OF RISER:	8'			
NOTES:										
1. Soil are visually classified in general accordance with the Modified Burmister Soil Classification System. 2. Photoionization detector (PID) field screening conducted with a 10.6 eV Mini Rae 2000 PID calibrated to provide readings of total ionizable volatile organic compounds as isobutylene equivalents.										

SOIL BORING/MONITORING WELL CONSTRUCTION LOG							DESIGNATION	VES-105	
<b>VERTEX®</b>		PROJECT:	Suffolk Downs Racecourse			PROJECT NO.:	43068		
		LOCATION:	525 William F. McClellan Highway, Boston, MA			DRILLER:	GeoLogic Earth Explorations, Inc.		
		INSTALLATION DATES	2/16/2017			INSPECTOR:	Benjamin Sivonen		
SAMPLER		CASING		CORE		GROUNDWATER DEPTH MEASUREMENTS			
TYPE	Geoprobe	TYPE	N/A	BARREL TYPE		ELEVATION INFORMATION	DATE:	N/A	
SIZE (ID)	2"	MATERIAL	N/A	SIZE (ID)		DATUM:	N/A	N/A	
HAMMER (LB.)	N/A	DIAMETER	N/A	DIAMETER		TOC:	N/A	DEPTH (Ft):	
FALL (IN.)	N/A	LENGTH	N/A			GS:	N/A	ELEVATION (Ft):	
SAMPLE INFORMATION							WELL CONST	PID (PPM)	
DEPTH ELEVATION	INTERVAL	PEN / REC	BLOWS / 6"	SPT	STRATA CHANGE (Ft/El.)	SOIL DESCRIPTION			
0	0-4'	48/20"				0-20" Brown fine to medium SAND, dry, no odor.	< 1.0		
1									
2									
3									
4	4-8'	48/16"				0-16" Brown fine to medium SAND, some gravel and brick, mosit, no odor.	< 1.0		
5									
6									
7									
8	8-12'	48/0"				No recovery.			
9									
10									
11									
12	12-16'	48/40"				0-20" Brown SILT, trace coarse sand, wet, odor of decaying organics.	23.2		
13									
14						20-40" Grey clayey SILT, wet, odor of decaying organics.	36.2		
15									
16						End of Boring at 16 feet bgs. Refusal not encountered.			
17									
18									
19									
20									
21									
22									
23									
24									
25									
26									
27									
28									
29									
MODIFIER		SAND AND GRAVEL		SILT AND CLAY		LOCATION:	Barn area.		ELL CONSTRUCTIO
1 - 10%	Trace	Density	Blows (N)	Consistency	Blows (N)	MONITORING WELL CONSTRUCTION DATA			
10 - 20%	Little	Very loose	0 - 4	Very soft	<2	DEPTH:	DEPTH/TYPE PACK:		Screen
20 - 35%	Some	Loose	4 - 10	Soft	2 - 4	DIAMETER (inches):	DEPTH/TYPE SEAL:		Riser
35 - 50%	And	Medium Dense	10 - 30	Medium Stiff	4 - 8	MATERIAL:	BACKFILL MATERIAL:		Concrete
		Dense	30 - 50	Stiff	8 - 15	SLOT SIZE (inches):	SURFACE SEAL:		Bentonite
		Very Dense	>50	Very Stiff	15 - 30	SCREEN INTERVAL:	ROADBOX DESC.:		Native Sand Grout
				Hard	>30	LENGTH OF RISER:			
<b>NOTES:</b> 1. Soil are visually classified in general accordance with the Modified Burmister Soil Classification System. 2. Photoionization detector (PID) field screening conducted with a 10.6 eV Mini Rae 2000 PID calibrated to provide readings of total ionizable volatile organic compounds as isobutylene equivalents.									

SOIL BORING/MONITORING WELL CONSTRUCTION LOG							DESIGNATION	VES-106 (MW)		
<b>VERTEX®</b>		PROJECT:	Suffolk Downs Racecourse			PROJECT NO.:	43068			
		LOCATION:	525 William F. McClellan Highway, Boston, MA			DRILLER:	GeoLogic Earth Explorations, Inc.			
		INSTALLATION DATES	2/14/2017 - 2/15/2017			INSPECTOR:	Kristen Sarson			
SAMPLER		CASING	CORE		GROUNDWATER DEPTH MEASUREMENTS					
TYPE	Split Spoon	TYPE	Hollow Stem	BARREL TYPE	ELEVATION INFORMATION	DATE:	2/17/2017			
SIZE (ID)	2"	MATERIAL	Steel	SIZE (ID)	DATUM:	N/A	8:00			
HAMMER (LB.)	140	DIAMETER	6"	DIAMETER	TOC:	N/A	DEPTH (FT):	6.63 bgs		
FALL (IN.)	30	LENGTH	5'		GS:	N/A	ELEVATION (FT):	NM		
SAMPLE INFORMATION							WELL CONST	PID (PPM)		
DEPTH ELEVATION	INTERVAL	PEN / REC	BLOWS / 6"	SPT	STRATA CHANGE (FT/EL)	SOIL DESCRIPTION				
0	0-2'	24/12"	12	N/A		0-3" Dark brown fine to medium SAND, some silt, trace coarse gravel, damp.		2.0		
			10			3-12" Dark brown fine to coarse SAND, some debris (coal, ash, glass, wood), trace coarse gravel, dry, no odor.				
1			6							
			5							
2										
3										
4										
5	5-7'	24/8"	4	N/A		0-8" Dark brown and black fine to coarse SAND and fine GRAVEL, some silt and debris (wood, glass, paper, brick), wet, no odor.				
			2							
6			2							
7			2							
8										
9										
10	10-12'	24/8"	1	N/A		0-8" Grey SILT with trace coarse gravel, slight sulfur odor, wet.		5.6		
			1							
11			1							
12			1							
13										
14										
15						End of Boring at 15 feet bgs. Refusal not encountered.				
16										
17										
18										
19										
20										
21										
22										
23										
24										
25										
26										
27										
28										
29										
MODIFIER		SAND AND GRAVEL		SILT AND CLAY		LOCATION:	Northwest parking area.		ELL CONSTRUCTI	
1 - 10%	Trace	Density	Blows (N)	Consistency	Blows (N)	MONITORING WELL CONSTRUCTION DATA				
10 - 20%	Little	Very loose	0 - 4	Very soft	<2	DEPTH:	15'	DEPTH/TYPE PACK:	Sand 4-15'	Screen Riser
20 - 35%	Some	Loose	4 - 10	Soft	2 - 4	DIAMETER (inches):	2"	DEPTH/TYPE SEAL:	Bentonite 3-4"	Concrete
35 - 50%	And	Medium Dense	10 - 30	Medium Stiff	4 - 8	MATERIAL:	PVC	BACKFILL MATERIAL:	Native/Concrete	Bentonite
		Dense	30 - 50	Stiff	8 - 15	SLOT SIZE (inches):	0.01	SURFACE SEAL:	Concrete	Native Sand
		Very Dense	>50	Very Stiff	15 - 30	SCREEN INTERVAL:	5-15'	ROADBOX DESC.:	Standpipe	Grout
				Hard	>30	LENGTH OF RISER:	8'			
NOTES:										
1. Soil are visually classified in general accordance with the Modified Burmister Soil Classification System.										
2. Photoionization detector (PID) field screening conducted with a 10.6 eV Mini Rae 2000 PID calibrated to provide readings of total ionizable volatile organic compounds as isobutylene equivalents.										

SOIL BORING/MONITORING WELL CONSTRUCTION LOG							DESIGNATION	VES-107	
<b>VERTEX®</b>		PROJECT:	Suffolk Downs Racecourse			PROJECT NO.:	43068		
		LOCATION:	525 William F. McClellan Highway, Boston, MA			DRILLER:	GeoLogic Earth Explorations, Inc.		
		INSTALLATION DATES	2/16/2017			INSPECTOR:	Benjamin Sivonen		
SAMPLER		CASING	CORE		GROUNDWATER DEPTH MEASUREMENTS				
TYPE	Geoprobe	TYPE	N/A	BARREL TYPE	ELEVATION INFORMATION	DATE:	N/A		
SIZE (ID)	2"	MATERIAL	N/A	SIZE (ID)	DATUM:	N/A	N/A		
HAMMER (LB.)	N/A	DIAMETER	N/A	DIAMETER	TOC:	N/A	DEPTH (Ft):	N/A	
FALL (IN.)	N/A	LENGTH	N/A		GS:	N/A	ELEVATION (Ft):	N/A	
SAMPLE INFORMATION							WELL CONST	PID (PPM)	
DEPTH ELEVATION	INTERVAL	PEN / REC	BLOWS / 6"	SPT	STRATA CHANGE (Ft/El.)	SOIL DESCRIPTION			
0	0-4'	48/36"				0-6" Tan medium SAND, dry, no odor. 6-36" Brown medium SAND, trace brick and gravel, dry, no odor.		< 1.0	
1								< 1.0	
2									
3									
4	4-8'	48/36"				0-18" Brown fine SAND, trace silt, gravel and wood, dry, no odor.		< 1.0	
5						18-36" Grey SILT, trace fine sand, moist, no odor.		< 1.0	
6									
7									
8	8-12'	48/20"				0-15" Grey SILT, trace fine sand, wet no odor.		< 1.0	
9						15-20" Grey SILT, some wood, wet, no odor.		< 1.0	
10									
11									
12	12-16'	48/48"				0-10" Grey SILT, some fine sand, trace organics, wet, slight odor of decaying organics.		17.1	
13						10-48" Grey SILT, wet, odor of decaying organics.		10.2	
14									
15									
16						End of Boring at 16 feet bgs. Refusal not encountered.			
17									
18									
19									
20									
21									
22									
23									
24									
25									
26									
27									
28									
29									
MODIFIER		SAND AND GRAVEL		SILT AND CLAY		LOCATION:	Northwest corner of race track.		ELL CONSTRUCTIO
1 - 10%	Trace	Density	Blows (N)	Consistency	Blows (N)	MONITORING WELL CONSTRUCTION DATA			
10 - 20%	Little	Very loose	0 - 4	Very soft	<2	DEPTH:	DEPTH/TYPE PACK:		Screen
20 - 35%	Some	Loose	4 - 10	Soft	2 - 4	DIAMETER (inches):	DEPTH/TYPE SEAL:		Riser
35 - 50%	And	Medium Dense	10 - 30	Medium Stiff	4 - 8	MATERIAL:	BACKFILL MATERIAL:		Concrete
		Dense	30 - 50	Stiff	8 - 15	SLOT SIZE (inches):	SURFACE SEAL:		Bentonite
		Very Dense	>50	Very Stiff	15 - 30	SCREEN INTERVAL:	ROADBOX DESC.:		Native Sand Grout
				Hard	>30	LENGTH OF RISER:			
<p><b>NOTES:</b></p> <ol style="list-style-type: none"> <li>Soil are visually classified in general accordance with the Modified Burmister Soil Classification System.</li> <li>Photionization detector (PID) field screening conducted with a 10.6 eV Mini Rae 2000 PID calibrated to provide readings of total ionizable volatile organic compounds as isobutylene equivalents.</li> </ol>									

SOIL BORING/MONITORING WELL CONSTRUCTION LOG							DESIGNATION	VES-108 (MW)				
<b>VERTEX®</b>		PROJECT:	Suffolk Downs Racecourse			PROJECT NO.:	43068					
		LOCATION:	525 William F. McClellan Highway, Boston, MA			DRILLER:	GeoLogic Earth Explorations, Inc.					
		INSTALLATION DATES	2/10/2017			INSPECTOR:	Benjamin Sivonen					
SAMPLER		CASING	CORE		GROUNDWATER DEPTH MEASUREMENTS							
TYPE	Split Spoon	TYPE	Hollow Stem	BARREL TYPE	ELEVATION INFORMATION	DATE:	2/17/2017					
SIZE (ID)	2"	MATERIAL	Steel	SIZE (ID)	DATUM:	N/A	13:00					
HAMMER (LB.)	140	DIAMETER	6"	DIAMETER	TOC:	N/A	DEPTH (FT):	8.53				
FALL (IN.)	30	LENGTH	5'		GS:	N/A	ELEVATION (FT):	NM				
SAMPLE INFORMATION							WELL CONST	PID (PPM)				
DEPTH ELEVATION	INTERVAL	PEN / REC	BLOWS / 6"	SPT	STRATA CHANGE (Ft/El.)	SOIL DESCRIPTION						
0	0-2'	24/10"	2	N/A	SILT	0-8" Brown SILT, some fine sand and organics, dry, no odor. 8-10" Grey clayey SILT, dry, no odor.	< 1.0					
			7				< 1.0					
1			8									
			15									
2	2-4'	24/14"	6	N/A		SAND	0-14" Brown fine to medium SAND, some silt, glass, and wood, dry, no odor.	< 1.0				
			6									
3			4									
			3									
4	4-6'	24/20"	1	N/A			SILT	0-20" Brown SILT, some organics, moist, odor of decaying organics.	21.2			
			1									
5			2									
			1									
6	6-8'	24/24"	2	N/A				SILT	0-24" Brown SILT, some organics, moist, odor of decaying organics.	314.0		
			1									
7			2									
			1									
8	8-10'	24/24"	1	N/A					SILT	0-24" Brown SILT, some organics, moist-wet, odor of decaying organics.	71.3	
			0									
9			0								"	
			2									
10	10-12'	24/24"	1	N/A	SILT					0-24" Grey SILT, trace shells, moist-wet, no odor.	13.3	
			0									
11			1									
			1									
12	12-14'	24/24"	2	N/A		SILT				0-20" Grey SILT, trace shells, moist-wet, no odor. 20-24" Grey SILT, trace shells, wet, no odor.	14.7	
			2									
13			5									13.9
			6									
14	14-16'	24/10"	3	N/A			SAND			0-10" Grey fine SAND, some silt, trace shells, wet, no odor.	6.3	
			3									
15			2									
			2									
16	16-18'	24/20"	3	N/A				SAND		Grey fine SAND, some silt, trace shells, wet, no odor.	5.9	
			2									
17			2									
			4									
18												
19												
20										End of Boring at 20 feet bgs. Refusal not encountered.		
21												
22												
23												
24												
25												
26												
27												
28												
29												
MODIFIER		SAND AND GRAVEL		SILT AND CLAY		LOCATION:	Infield.		ELL CONSTRUCTION			
1 - 10%	Trace	Density	Blows (N)	Consistency	Blows (N)	MONITORING WELL CONSTRUCTION DATA						
10 - 20%	Little	Very loose	0 - 4	Very soft	<2	DEPTH:	20'		DEPTH/TYPE PACK:	Sand 5-20'	Screen Riser	
20 - 35%	Some	Loose	4 - 10	Soft	2 - 4	DIAMETER (inches):	2"		DEPTH/TYPE SEAL:	Bentonite 4-5"	Concrete Bentonite	
35 - 50%	And	Medium Dense	10 - 30	Medium Stiff	4 - 8	MATERIAL:	PVC	BACKFILL MATERIAL:	Native/Concrete	Native Sand Grout		
		Dense	30 - 50	Stiff	8 - 15	SLOT SIZE (inches):	0.01	SURFACE SEAL:	Concrete			
		Very Dense	>50	Very Stiff	15 - 30	SCREEN INTERVAL:	5-20'	ROADBOX DESC.:	Standpipe			
				Hard	>30	LENGTH OF RISER:	8'					
NOTES:												
1. Soil are visually classified in general accordance with the Modified Burmister Soil Classification System.												
2. Photoionization detector (PID) field screening conducted with a 10.6 eV Mini Rae 2000 PID calibrated to provide readings of total ionizable volatile organic compounds as isobutylene equivalents.												

SOIL BORING/MONITORING WELL CONSTRUCTION LOG							DESIGNATION	VES-109 (MW)	
<b>VERTEX®</b>		PROJECT:	Suffolk Downs Racecourse			PROJECT NO.:	43068		
		LOCATION:	525 William F. McClellan Highway, Boston, MA			DRILLER:	GeoLogic Earth Explorations, Inc.		
		INSTALLATION DATES	2/10/2017			INSPECTOR:	Kristen Sarson		
SAMPLER		CASING	CORE		GROUNDWATER DEPTH MEASUREMENTS				
TYPE	Split Spoon	TYPE	Hollow Stem	BARREL TYPE	ELEVATION INFORMATION	DATE:	2/17/2017		
SIZE (ID)	2"	MATERIAL	Steel	SIZE (ID)	DATUM:	N/A	12:00		
HAMMER (LB.)	140	DIAMETER	6"	DIAMETER	TOC:	N/A	DEPTH (FT):	9.85	
FALL (IN.)	30	LENGTH	5'		GS:	N/A	ELEVATION (FT):	NM	
SAMPLE INFORMATION							WELL CONST	PID (PPM)	
DEPTH ELEVATION	INTERVAL	PEN / REC	BLOWS / 6"	SPT	STRATA CHANGE (FT/EL)	SOIL DESCRIPTION			
0	0-2'	24/10"	1	N/A		0-10" Brown fine SAND, trace silt and coarse gravel, dry, no odor.		2.0	
				4					
1				8					
				8					
2									
3									
4									
5	5-7'	24/20"	3	N/A		0-20" Dark brown and black fine to coarse SAND and DEBRIS (concrete, wood, glass, charcoal, ash, ceramic), some silt, damp, no odor.		2.1	
				7					
6				6					
				10					
7									
8									
9									
10	10-12'	24/8"	1	N/A		0-8" Dark brown and black fine to coarse SAND, some silt and debris (brick fibrous materials, glass), wet, no odor.		1.9	
				2					
11				2					
				1					
12									
13									
14									
15						End of Boring at 15 feet bgs. Refusal not encountered.			
16									
17									
18									
19									
20									
21									
22									
23									
24									
25									
26									
27									
28									
29									
MODIFIER		SAND AND GRAVEL		SILT AND CLAY		LOCATION:	Infield	ELL CONSTRUCT	
1 - 10%	Trace	Density	Blows (N)	Consistency	Blows (N)	MONITORING WELL CONSTRUCTION DATA			
10 - 20%	Little	Very loose	0 - 4	Very soft	<2	DEPTH:	15'	DEPTH/TYPE PACK:	Sand 4-15'
20 - 35%	Some	Loose	4 - 10	Soft	2 - 4	DIAMETER (inches):	2"	DEPTH/TYPE SEAL:	Bentonite 3-4"
35 - 50%	And	Medium Dense	10 - 30	Medium Stiff	4 - 8	MATERIAL:	PVC	BACKFILL MATERIAL:	Native/Concrete
		Dense	30 - 50	Stiff	8 - 15	SLOT SIZE (inches):	0.01	SURFACE SEAL:	Concrete
		Very Dense	>50	Very Stiff	15 - 30	SCREEN INTERVAL:	5-15'	ROADBOX DESC.:	Roadbox
				Hard	>30	LENGTH OF RISER:	5'		
<b>NOTES:</b> 1. Soil are visually classified in general accordance with the Modified Burmister Soil Classification System. 2. Photoionization detector (PID) field screening conducted with a 10.6 eV Mini Rae 2000 PID calibrated to provide readings of total ionizable volatile organic compounds as isobutylene equivalents.									

SOIL BORING/MONITORING WELL CONSTRUCTION LOG							DESIGNATION	VES-110 (MW)	
<b>VERTEX®</b>		PROJECT:	Suffolk Downs Racecourse			PROJECT NO.:	43068		
		LOCATION:	525 William F. McClellan Highway, Boston, MA			DRILLER:	GeoLogic Earth Explorations, Inc.		
		INSTALLATION DATES	2/14/2017			INSPECTOR:	Benjamin Sivonen		
SAMPLER		CASING	CORE		GROUNDWATER DEPTH MEASUREMENTS				
TYPE	Split Spoon	TYPE	Hollow Stem	BARREL TYPE	ELEVATION INFORMATION	DATE:	2/17/2017		
SIZE (ID)	2"	MATERIAL	Steel	SIZE (ID)	DATUM:	N/A	11:00		
HAMMER (LB.)	140	DIAMETER	6"	DIAMETER	TOC:	N/A	DEPTH (Ft):	7.99 bgs	
FALL (IN.)	30	LENGTH	5'	GS:	N/A	ELEVATION (Ft):	NM		
SAMPLE INFORMATION							WELL CONST	PID (PPM)	
DEPTH ELEVATION	INTERVAL	PEN / REC	BLOWS / 6"	SPT	STRATA CHANGE (Ft/El.)	SOIL DESCRIPTION			
0	0-2'	24/12"	3	N/A	SILT	0-3" Brown SILT, some fine sand and organic matter, dry, no odor	< 1.0		
			6			3-12" Brown fine to medium SAND, some silt, trace brick, dry, no odor.	< 1.0		
1			7						
			3						
2	2-4'	24/14"	3	N/A		0-14" Brown SILT, some fine to medium sand, trace gravel, dry, no odor.	< 1.0		
			4						
3			3						
			3						
4	4-6'	24/0"	2	N/A		No recovery, fabric substance lodged in spoon. Water observed on spoon.	N/A		
			2						
5			3						
			2						
6	6-8'	24/18"	1	N/A		0-18" Grey SILT, some organics, wet, odor of decaying organics.	8.3		
			1						
7			1						
			1						
8	8-10'	24/24"	1	N/A		0-24" Grey SILT, some organics, wet, odor of decaying organics.	7.9		
			0						
9			0						
			0						
10	10-12'	24/24"	1	N/A		0-24" Grey SILT, some organics, wet, odor of decaying organics.	7.5		
			1						
11			1						
			1						
12	12-14'	24/24"	1	N/A		0-24" Grey SILT, some organics, wet, odor of decaying organics.	18.4		
			1						
13			1						
			1						
14									
15						End of Boring at 15 feet bgs. Refusal not encountered.			
16									
17									
18									
19									
20									
21									
22									
23									
24									
25									
26									
27									
28									
29									
MODIFIER		SAND AND GRAVEL		SILT AND CLAY		LOCATION:	Infield.	ELL CONSTRUCTION	
1 - 10%	Trace	Density	Blows (N)	Consistency	Blows (N)	MONITORING WELL CONSTRUCTION DATA			
10 - 20%	Little	Very loose	0 - 4	Very soft	<2	DEPTH:	15'	DEPTH/TYPE PACK: Sand 5-15'	Screen Riser
20 - 35%	Some	Loose	4 - 10	Soft	2 - 4	DIAMETER (inches):	2"	DEPTH/TYPE SEAL: Bentonite 4-5"	Concrete Bentonite
35 - 50%	And	Medium Dense	10 - 30	Medium Stiff	4 - 8	MATERIAL:	PVC	BACKFILL MATERIAL: Native/Concrete	Native Sand Grout
		Dense	30 - 50	Stiff	8 - 15	SLOT SIZE (inches):	0.01	SURFACE SEAL: Concrete	
		Very Dense	>50	Very Stiff	15 - 30	SCREEN INTERVAL:	5-15'	ROADBOX DESC.: Standpipe	
				Hard	>30	LENGTH OF RISER:	8'		
NOTES:									
1. Soil are visually classified in general accordance with the Modified Burmister Soil Classification System.									
2. Photoionization detector (PID) field screening conducted with a 10.6 eV Mini Rae 2000 PID calibrated to provide readings of total ionizable volatile organic compounds as isobutylene equivalents.									

SOIL BORING/MONITORING WELL CONSTRUCTION LOG							DESIGNATION	VES-111 (MW)		
<b>VERTEX®</b>		PROJECT:	Suffolk Downs Racecourse			PROJECT NO.:	43068			
		LOCATION:	525 William F. McClellan Highway, Boston, MA			DRILLER:	GeoLogic Earth Explorations, Inc.			
		INSTALLATION DATES	2/14/2017			INSPECTOR:	Benjamin Sivonen			
SAMPLER		CASING		CORE		GROUNDWATER DEPTH MEASUREMENTS				
TYPE	Split Spoon	TYPE	Hollow Stem	BARREL TYPE		ELEVATION INFORMATION	DATE:	2/17/2017		
SIZE (ID)	2"	MATERIAL	Steel	SIZE (ID)		DATUM:	N/A	14:00		
HAMMER (LB.)	140	DIAMETER	6"	DIAMETER		TOC:	N/A	DEPTH (FT):	6.57 bgs	
FALL (IN.)	30	LENGTH	5'			GS:	N/A	ELEVATION (FT):	NM	
SAMPLE INFORMATION							SOIL DESCRIPTION	WELL CONST	PID (PPM)	
DEPTH ELEVATION	INTERVAL	PEN / REC	BLOWS / 6"	SPT	STRATA CHANGE (Ft/El.)					
0	0-2'	24/18"	1	N/A	SILT	0-3" Brown SILT and organics, some sand, dry, no odor. 3-18" Brown fine SAND, some silt, dry, no odor.		<1.0		
			3					2.1		
1			4							
			6							
2	2-4'	24/16"	8	N/A		0-16" Brown fine SAND, some silt, dry, no odor.		2.2		
			9							
3			6							
			5							
4										
5	5-7'	24/20"	1	N/A		0-20" Brown SILT, some organics, wet, odor of decaying organics.		0.7		
			1							
6			2							
			2							
7										
8										
9										
10	10-12'	24/24"	1	N/A		0-24" Grey SILT, trace shells, wet, no odor.		<1.0		
			1							
11			1							
			1							
12										
13										
14										
15						End of Boring at 15 feet bgs. Refusal not encountered.				
16										
17										
18										
19										
20										
21										
22										
23										
24										
25										
26										
27										
28										
29										
MODIFIER		SAND AND GRAVEL		SILT AND CLAY		LOCATION:	Infield.	ELL CONSTRUCTION		
1 - 10%	Trace	Density	Blows (N)	Consistency	Blows (N)	MONITORING WELL CONSTRUCTION DATA				
10 - 20%	Little	Very loose	0 - 4	Very soft	<2	DEPTH:	15'	DEPTH/TYPE PACK:	Sand 5-15'	Screen
20 - 35%	Some	Loose	4 - 10	Soft	2 - 4	DIAMETER (inches):	2"	DEPTH/TYPE SEAL:	Bentonite 4-5"	Riser
35 - 50%	And	Medium Dense	10 - 30	Medium Stiff	4 - 8	MATERIAL:	PVC	BACKFILL MATERIAL:	Native/Concrete	Concrete
		Dense	30 - 50	Stiff	8 - 15	SLOT SIZE (inches):	0.01	SURFACE SEAL:	Concrete	Bentonite
		Very Dense	>50	Very Stiff	15 - 30	SCREEN INTERVAL:	5-15'	ROADBOX DESC.:	Standpipe	Native
				Hard	>30	LENGTH OF RISER:	8'		Sand Grout	
NOTES:										
1. Soil are visually classified in general accordance with the Modified Burmister Soil Classification System.										
2. Photoionization detector (PID) field screening conducted with a 10.6 eV Mini Rae 2000 PID calibrated to provide readings of total ionizable volatile organic compounds as isobutylene equivalents.										

SOIL BORING/MONITORING WELL CONSTRUCTION LOG							DESIGNATION	VES-112	
<b>VERTEX®</b>		PROJECT:	Suffolk Downs Racetrack			PROJECT NO.:	43068		
		LOCATION:	525 William F. McClellan Highway, Boston, MA			DRILLER:	GeoLogic Earth Explorations, Inc.		
		INSTALLATION DATES	2/17/2017			INSPECTOR:	Kristen Sarson		
SAMPLER		CASING	CORE		GROUNDWATER DEPTH MEASUREMENTS				
TYPE	Split Spoon	TYPE	Hollow Stem	BARREL TYPE	ELEVATION INFORMATION	DATE:	N/A		
SIZE (ID)	2"	MATERIAL	Steel	SIZE (ID)	DATUM:	N/A	TIME:	N/A	
HAMMER (LB.)	140	DIAMETER	6"	DIAMETER	TOC:	N/A	DEPTH (Ft):	N/A	
FALL (IN.)	30	LENGTH	5'		GS:	N/A	ELEVATION (Ft):	N/A	
SAMPLE INFORMATION							WELL CONST	PID (PPM)	
DEPTH ELEVATION	INTERVAL	PEN / REC	BLOWS / 6"	SPT	STRATA CHANGE (Ft/EL)	SOIL DESCRIPTION			
0	0-2'	24/18"	31	N/A		0-18" Tan fine to coarse SAND, some fine to coarse gravel, trace silt and cobbles, damp, no odor.		1.5	
			24						
1			23						
			20						
2									
3									
4									
5	5-7'	24/0"	8	N/A		No recovery.			
			4						
6			3						
			3						
7									
8									
9									
10	10-12'	24/0"	6	N/A		No recovery.			
			2						
11			1						
			2						
12									
13									
14									
15	15-17'	24/0"	NM	N/A		No recovery.			
16									
17									
18									
19									
...									
...									
...									
...									
55						Refusal encountered at 55' bgs. Boring terminated.			
56									
57									
58									
59									
MODIFIER		SAND AND GRAVEL		SILT AND CLAY		LOCATION:	East service road.		ELL CONSTRUCT
1 - 10%	Trace	Density	Blows (N)	Consistency	Blows (N)	MONITORING WELL CONSTRUCTION DATA			
10 - 20%	Little	Very loose	0 - 4	Very soft	<2	DEPTH:	DEPTH/TYPE PACK:		Screen Riser
20 - 35%	Some	Loose	4 - 10	Soft	2 - 4	DIAMETER (inches):	DEPTH/TYPE SEAL:		Concrete
35 - 50%	And	Medium Dense	10 - 30	Medium Stiff	4 - 8	MATERIAL:	BACKFILL MATERIAL:		Bentonite
		Dense	30 - 50	Stiff	8 - 15	SLOT SIZE (inches):	SURFACE SEAL:		Native
		Very Dense	>50	Very Stiff	15 - 30	SCREEN INTERVAL:	ROADBOX DESC.:		Sand
				Hard	>30	LENGTH OF RISER:			Grout
NOTES:									
1. Soil are visually classified in general accordance with the Modified Burmister Soil Classification System.									
2. Photoionization detector (PID) field screening conducted with a 10.6 eV Mini Rae 2000 PID calibrated to provide readings of total ionizable volatile organic compounds as isobutylene equivalents.									

SOIL BORING/MONITORING WELL CONSTRUCTION LOG							DESIGNATION	VES-113	
<b>VERTEX®</b>		PROJECT:	Suffolk Downs Racecourse			PROJECT NO.:	43068		
		LOCATION:	525 William F. McClellan Highway, Boston, MA			DRILLER:	GeoLogic Earth Explorations, Inc.		
		INSTALLATION DATES	2/15/2017			INSPECTOR:	Benjamin Sivonen		
SAMPLER		CASING		CORE		GROUNDWATER DEPTH MEASUREMENTS			
TYPE	Geoprobe	TYPE	N/A	BARREL TYPE		ELEVATION INFORMATION	DATE:	N/A	
SIZE (ID)	2"	MATERIAL	N/A	SIZE (ID)		DATUM:	N/A	TIME:	N/A
HAMMER (LB.)	N/A	DIAMETER	N/A	DIAMETER		TOC:	N/A	DEPTH (FT):	N/A
FALL (IN.)	N/A	LENGTH	N/A			GS:	N/A	ELEVATION (FT):	N/A
SAMPLE INFORMATION							SOIL DESCRIPTION		
DEPTH ELEVATION	INTERVAL	PEN / REC	BLOWS / 6"	SPT	STRATA CHANGE (Ft/EL)		WELL CONST	PID (PPM)	
0	0-4'	48/38"			ASPHALT	0-2" ASPHALT. 2-38" Brown medium to coarse SAND, some brick, trace glass (white and blue), dry, no odor.		2.1	
1									
2									
3									
4	4-8'	48/24"				0-24" Brown medium to coarse SAND, some brick, trace wood, moist, no odor.		1.9	
5									
6									
7									
8	8-12'	48/24"				0-24" Grey fine to medium SAND, some gravel, trace brick, wet, no odor.		1.8	
9									
10									
11									
12	12-16'	48/30"				0-30" Grey SILT, trace sand and shells, wet, slight odor of decaying organics.		43.3	
13									
14									
15									
16						End of Boring at 16 feet bgs. Refusal not encountered.			
17									
18									
19									
20									
21									
22									
23									
24									
25									
26									
27									
28									
29									
MODIFIER		(DENSITY IN GRAINS)		(CONSISTENCY)		LOCATION:	South of maintenance building.		WELL CONSTRUCTION
1 - 10%	Trace	Density	Blows (N)	Consistency	Blows (N)	MONITORING WELL CONSTRUCTION DATA			
10 - 20%	Little	Very loose	0 - 4	Very soft	<2	DEPTH:	DEPTH/TYPE PACK:		Screen Riser
20 - 35%	Some	Loose	4 - 10	Soft	2 - 4	DIAMETER (inches):	DEPTH/TYPE SEAL:		Concrete Bentonite
35 - 50%	And	Medium Dense	10 - 30	Medium Stiff	4 - 8	MATERIAL:	BACKFILL MATERIAL:		Native Sand Grout
		Dense	30 - 50	Stiff	8 - 15	SLOT SIZE (inches):	SURFACE SEAL:		
		Very Dense	>50	Very Stiff	15 - 30	SCREEN INTERVAL:	ROADBOX DESC.:		
				Hard	>30	LENGTH OF RISER:			
NOTES:									
1. Soil are visually classified in general accordance with the Modified Burmister Soil Classification System.									
2. Photoionization detector (PID) field screening conducted with a 10.6 eV Mini Rae 2000 PID calibrated to provide readings of total ionizable volatile organic compounds as isobutylene equivalents.									

SOIL BORING/MONITORING WELL CONSTRUCTION LOG							DESIGNATION	VES-114			
<b>VERTEX®</b>		PROJECT:	Suffolk Downs Racecourse			PROJECT NO.:	43068				
		LOCATION:	525 William F. McClellan Highway, Boston, MA			DRILLER:	GeoLogic Earth Explorations, Inc.				
		INSTALLATION DATES	2/15/2017			INSPECTOR:	Benjamin Sivonen				
SAMPLER		CASING		CORE		GROUNDWATER DEPTH MEASUREMENTS					
TYPE	Geoprobe	TYPE	N/A	BARREL TYPE		ELEVATION INFORMATION	DATE:	N/A			
SIZE (ID)	2"	MATERIAL	N/A	SIZE (ID)		DATUM:	N/A	TIME:	N/A		
HAMMER (LB.)	N/A	DIAMETER	N/A	DIAMETER		TOC:	N/A	DEPTH (FT):	N/A		
FALL (IN.)	N/A	LENGTH	N/A			GS:	N/A	ELEVATION (FT):	N/A		
SAMPLE INFORMATION							SOIL DESCRIPTION			WELL CONST	PID (PPM)
DEPTH ELEVATION	INTERVAL	PEN / REC	BLOWS / 6"	SPT	STRATA CHANGE (Ft/El.)						
0	0-4'	48/24"				0-4" Tan SAND, some silt and organics (top soil), dry, no odor. 4-24" Brown fine to medium SAND, trace brick, dry, no odor.				< 1.0	
1										1.2	
2											
3											
4	4-8'	48/0"				No recovery.				N/A	
5											
6											
7											
8	8-12'	48/0"				No recovery.				N/A	
9											
10											
11											
12	12-16'	48/48"				0-48" Grey SILT, some fine sand and shells, wet, no odor.				41.3	
13											
14											
15											
16						End of Boring at 16 feet bgs. Refusal not encountered.					
17											
18											
19											
20											
21											
22											
23											
24											
25											
26											
27											
28											
29											
MODIFIER		GRANULAR SOILS		COHESIVE SOILS		LOCATION:	Infield.			WELL CONSTRUCTION	
1 - 10%	Trace	Density	Blows (N)	Consistency	Blows (N)	MONITORING WELL CONSTRUCTION DATA					
10 - 20%	Little	Very loose	0 - 4	Very soft	<2	DEPTH:		DEPTH/TYPE PACK:			Screen Riser
20 - 35%	Some	Loose	4 - 10	Soft	2 - 4	DIAMETER (inches):		DEPTH/TYPE SEAL:			Concrete Bentomite
35 - 50%	And	Medium Dense	10 - 30	Medium Stiff	4 - 8	MATERIAL:		BACKFILL MATERIAL:			Native Sand Grout
		Dense	30 - 50	Stiff	8 - 15	SLOT SIZE (inches):		SURFACE SEAL:			Native Sand Grout
		Very Dense	>50	Very Stiff	15 - 30	SCREEN INTERVAL:		ROADBOX DESC.:			Native Sand Grout
				Hard	>30	LENGTH OF RISER:					
NOTES:											
1. Soil are visually classified in general accordance with the Modified Burmister Soil Classification System.											
2. Photoionization detector (PID) field screening conducted with a 10.6 eV Mini Rae 2000 PID calibrated to provide readings of total ionizable volatile organic compounds as isobutylene equivalents.											

SOIL BORING/MONITORING WELL CONSTRUCTION LOG							DESIGNATION	VES-115			
<b>VERTEX®</b>		PROJECT:	Suffolk Downs Racecourse			PROJECT NO.:	43068				
		LOCATION:	525 William F. McClellan Highway, Boston, MA			DRILLER:	GeoLogic Earth Explorations, Inc.				
		INSTALLATION DATES	2/15/2017			INSPECTOR:	Benjamin Sivonen				
SAMPLER		CASING		CORE		GROUNDWATER DEPTH MEASUREMENTS					
TYPE	Geoprobe	TYPE	N/A	BARREL TYPE		ELEVATION INFORMATION	DATE:	N/A			
SIZE (ID)	2"	MATERIAL	N/A	SIZE (ID)		DATUM:	N/A	N/A			
HAMMER (LB.)	N/A	DIAMETER	N/A	DIAMETER		TOC:	N/A	DEPTH (FT):	N/A		
FALL (IN.)	N/A	LENGTH	N/A			GS:	N/A	ELEVATION (FT):	N/A		
SAMPLE INFORMATION							SOIL DESCRIPTION			WELL CONST	PID (PPM)
DEPTH ELEVATION	INTERVAL	PEN / REC	BLOWS / 6"	SPT	STRATA CHANGE (Ft/El.)						
0	0-4'	48/40"			SAND	0-8' Tan fine SAND and organics, dry, no odor. 8-40" Brown fine to medium SAND, dry, no odor.				< 1.0	
1										< 1.0	
2											
3											
4	4-8'	48/24"			SILT	Grey SILT, some fine sand, wet, no odor.				0.4	
5											
6											
7											
8	8-12'	48/0"				SILT	No recovery.				N/A
9											
10											
11											
12	12-16'	48/36"			SAND		0-10" Grey fine to medium SAND, trace silt, wet, slight odor of decaying organics. 10-36" Grey clayey SILT, some shells, wet, odor of decaying organics.				19.7
13											
14											
15											
16							End of Boring at 16 feet bgs. Refusal not encountered.				
17											
18											
19											
20											
21											
22											
23											
24											
25											
26											
27											
28											
29											
MODIFIER	SOIL AND MINERAL		SOIL AND CLAY		LOCATION:	Infield.			WELL CONSTRUCTION		
	(GRANULAR SOILS)		(COHESIVE SOILS)			MONITORING WELL CONSTRUCTION DATA					
1 - 10%	Trace	Density	Blows (N)	Consistency	Blows (N)	DEPTH:		DEPTH/TYPE PACK:		Screen	
10 - 20%	Little	Very loose	0 - 4	Very soft	<2	DIAMETER (inches):		DEPTH/TYPE SEAL:		Riser	
20 - 35%	Some	Loose	4 - 10	Soft	2 - 4	MATERIAL:		BACKFILL MATERIAL:		Concrete	
35 - 50%	And	Medium Dense	10 - 30	Medium Stiff	4 - 8	SLOT SIZE (inches):		SURFACE SEAL:		Bentonite	
		Dense	30 - 50	Stiff	8 - 15	SCREEN INTERVAL:		ROADBOX DESC.:		Native	
		Very Dense	>50	Very Stiff	15 - 30	LENGTH OF RISER:				Sand	
										Grout	
NOTES:											
1. Soil are visually classified in general accordance with the Modified Burmister Soil Classification System.											
2. Photoionization detector (PID) field screening conducted with a 10.6 eV Mini Rae 2000 PID calibrated to provide readings of total ionizable volatile organic compounds as isobutylene equivalents.											

SOIL BORING/MONITORING WELL CONSTRUCTION LOG							DESIGNATION	VES-116		
<b>VERTEX®</b>		PROJECT: Suffolk Downs Racecourse				PROJECT NO.:	43068			
		LOCATION: 525 William F. McClellan Highway, Boston, MA				DRILLER:	GeoLogic Earth Explorations, Inc.			
		INSTALLATION DATES		2/15/2017		INSPECTOR:	Benjamin Sivonen			
SAMPLER		CASING		CORE		GROUNDWATER DEPTH MEASUREMENTS				
TYPE	Geoprobe	TYPE	N/A	BARREL TYPE		ELEVATION INFORMATION	DATE:	N/A		
SIZE (ID)	2"	MATERIAL	N/A	SIZE (ID)		DATUM:	N/A	N/A		
HAMMER (LB.)	N/A	DIAMETER	N/A	DIAMETER		TOC:	N/A	DEPTH (FT):	N/A	
FALL (IN.)	N/A	LENGTH	N/A			GS:	N/A	ELEVATION (FT):	N/A	
SAMPLE INFORMATION							SOIL DESCRIPTION		WELL CONST	PID (PPM)
DEPTH ELEVATION	INTERVAL	PEN / REC	BLOWS / 6"	SPT	STRATA CHANGE (Ft/El.)					
0	0-4'	48/40"				0-40" Tan medium SAND, some gravel, dry, no odor.			< 1.0	
1										
2										
3										
4	4-8'	48/36"				0-6" Tan medium SAND, dry, no odor. 6-36" Grey medium SAND, some glass and brick, moist, no odor.			< 1.0	
5									< 1.0	
6										
7										
8	8-12'	48/36				0-36" Grey medium SAND, some gravel, trace brick, glass, and wood, wet, no odor.			< 1.0	
9										
10										
11										
12	12-16'	48/0				No recovery.				
13										
14										
15										
16	16-20'	48/24"				0-24" Grey SILT, some fine sand, trace shells, wet, odor of decaying organics.			19.1	
17										
18										
19										
20						End of Boring at 20 feet bgs. Refusal not encountered.				
21										
22										
23										
24										
25										
26										
27										
28										
29										
MODIFIER	SOIL AND MINERAL		SOIL AND CLAY		LOCATION:	MONITORING WELL CONSTRUCTION DATA		WELL CONSTRUCTION		
1 - 10%	Trace	(GRANULAR SOILS)	Density	Blows (N)	Consistency	Blows (N)	DEPTH:	DEPTH/TYPE PACK:	Screen	
10 - 20%	Little	Very loose	0 - 4	Very soft	<2		DIAMETER (inches):	DEPTH/TYPE SEAL:	Riser	
20 - 35%	Some	Loose	4 - 10	Soft	2 - 4		MATERIAL:	BACKFILL MATERIAL:	Concrete	
35 - 50%	And	Medium Dense	10 - 30	Medium Stiff	4 - 8		SLOT SIZE (inches):	SURFACE SEAL:	Bentonite	
		Dense	30 - 50	Stiff	8 - 15		SCREEN INTERVAL:	ROADBOX DESC.:	Native	
		Very Dense	>50	Very Stiff	15 - 30		LENGTH OF RISER:		Sand	
				Hard	>30			Grout		
NOTES:										
1. Soil are visually classified in general accordance with the Modified Burmister Soil Classification System.										
2. Photoionization detector (PID) field screening conducted with a 10.6 eV Mini Rae 2000 PID calibrated to provide readings of total ionizable volatile organic compounds as isobutylene equivalents.										

SOIL BORING/MONITORING WELL CONSTRUCTION LOG							DESIGNATION	VES-117	
<b>VERTEX®</b>		PROJECT: Suffolk Downs Racecourse				PROJECT NO.:	43068		
		LOCATION: 525 William F. McClellan Highway, Boston, MA				DRILLER:	GeoLogic Earth Explorations, Inc.		
		INSTALLATION DATES		2/15/2017		INSPECTOR:	Benjamin Sivonen		
SAMPLER		CASING		CORE		GROUNDWATER DEPTH MEASUREMENTS			
TYPE	Geoprobe	TYPE	N/A	BARREL TYPE		ELEVATION INFORMATION	DATE:	N/A	
SIZE (ID)	2"	MATERIAL	N/A	SIZE (ID)		DATUM:	N/A	N/A	
HAMMER (LB.)	N/A	DIAMETER	N/A	DIAMETER		TOC:	N/A	DEPTH (FT):	N/A
FALL (IN.)	N/A	LENGTH	N/A			GS:	N/A	ELEVATION (FT):	N/A
SAMPLE INFORMATION							SOIL DESCRIPTION	WELL CONST	PID (PPM)
DEPTH ELEVATION	INTERVAL	PEN / REC	BLOWS / 6"	SPT	STRATA CHANGE (Ft/El.)				
0	0-4'	48/38			ASPHALT	0-2" ASPHALT. 2-38" Brown medium to coarse SAND, some gravel, trace brick, dry, no odor.			1.6
1									
2									
3									
4	4-8'	48/6"			SAND	0-6" Brown medium to coarse SAND, trace gravel and brick, moist, no odor.			1.3
5									
6									
7									
8	8-12'	48/0				No recovery.			
9									
10									
11									
12	12-16'	48/0				No recovery.			
13									
14									
15									
16	16-20'	48/0				No recovery.			
17									
18									
19									
20						End of Boring at 20 feet bgs. Refusal not encountered.			
21									
22									
23									
24									
25									
26									
27									
28									
29									
MODIFIER	SOIL AND MINERAL		SOIL AND CLAY		LOCATION:	North of grandstand.		WELL CONSTRUCTION	
	(GRANULAR SOILS)		(COHESIVE SOILS)			MONITORING WELL CONSTRUCTION DATA			
1 - 10%	Trace	Density	Blows (N)	Consistency	Blows (N)	DEPTH:	DEPTH/TYPE PACK:		Screen
10 - 20%	Little	Very loose	0 - 4	Very soft	<2	DIAMETER (inches):	DEPTH/TYPE SEAL:		Riser
20 - 35%	Some	Loose	4 - 10	Soft	2 - 4	MATERIAL:	BACKFILL MATERIAL:		Concrete
35 - 50%	And	Medium Dense	10 - 30	Medium Stiff	4 - 8	SLOT SIZE (inches):	SURFACE SEAL:		Bentonite
		Dense	30 - 50	Stiff	8 - 15	SCREEN INTERVAL:	ROADBOX DESC.:		Native
		Very Dense	>50	Very Stiff	15 - 30	LENGTH OF RISER:			Sand
				Hard	>30				Grout
NOTES:									
1. Soil are visually classified in general accordance with the Modified Burmister Soil Classification System.									
2. Photoionization detector (PID) field screening conducted with a 10.6 eV Mini Rae 2000 PID calibrated to provide readings of total ionizable volatile organic compounds as isobutylene equivalents.									

SOIL BORING/MONITORING WELL CONSTRUCTION LOG							DESIGNATION	VES-118		
<b>VERTEX®</b>		PROJECT: Suffolk Downs Racecourse			PROJECT NO.:		43068			
		LOCATION: 525 William F. McClellan Highway, Boston, MA			DRILLER:		GeoLogic Earth Explorations, Inc.			
		INSTALLATION DATES		2/15/2017		INSPECTOR:		Benjamin Sivonen		
SAMPLER		CASING		CORE		GROUNDWATER DEPTH MEASUREMENTS				
TYPE	Geoprobe	TYPE	N/A	BARREL TYPE		ELEVATION INFORMATION	DATE:	N/A		
SIZE (ID)	2"	MATERIAL	N/A	SIZE (ID)		DATUM:	N/A	N/A		
HAMMER (LB.)	N/A	DIAMETER	N/A	DIAMETER		TOC:	N/A	DEPTH (FT):	N/A	
FALL (IN.)	N/A	LENGTH	N/A			GS:	N/A	ELEVATION (FT):	N/A	
SAMPLE INFORMATION							SOIL DESCRIPTION			
DEPTH ELEVATION	INTERVAL	PEN / REC	BLOWS / 6"	SPT	STRATA CHANGE (Ft/El.)				WELL CONST	PID (PPM)
0	0-4'	48/30"				0-3" Brown SILT and organics (top soil), dry, no odor. 3-30" Brown fine to medium SAND, dry, no odor.				< 1.0
1										1.1
2										
3										
4	4-8'	48/36"				0-36" Brown fine to medium SAND, some silt and gravel, trace brick, dry, no odor.				< 1.0
5										
6										
7										
8	8-12'	48/12"				0-12" Grey fine to medium SAND, trace gravel, moist, no odor.				< 1.0
9										
10										
11										
12	12-16'	48/10"				0-10" Grey medium to coarse SAND, some gravel, wet, no odor.				< 1.0
13										
14										
15										
16	16-20'	48/0"				No recovery, wood lodged in spoon.				N/A
17										
18										
19										
20	20-24'	48/12"				0-12" Grey fine SAND, trace shells, wet, no odor.				1.4
21										
22										
23										
24						End of Boring at 24 feet bgs. Refusal not encountered.				
25										
26										
27										
28										
29										
MODIFIER		(GRANULAR SOILS)		(CONCRETE SOILS)		LOCATION:	Infield.		WELL CONSTRUCTION	
1 - 10%	Trace	Density	Blows (N)	Consistency	Blows (N)	MONITORING WELL CONSTRUCTION DATA				
10 - 20%	Little	Very loose	0 - 4	Very soft	<2	DEPTH:		DEPTH/TYPE PACK:		Screen Riser
20 - 35%	Some	Loose	4 - 10	Soft	2 - 4	DIAMETER (inches):		DEPTH/TYPE SEAL:		Concrete Bentonite
35 - 50%	And	Medium Dense	10 - 30	Medium Stiff	4 - 8	MATERIAL:		BACKFILL MATERIAL:		Native Sand Grout
		Dense	30 - 50	Stiff	8 - 15	SLOT SIZE (inches):		SURFACE SEAL:		
		Very Dense	>50	Very Stiff	15 - 30	SCREEN INTERVAL:		ROADBOX DESC.:		
				Hard	>30	LENGTH OF RISER:				

**NOTES:**

- Soil are visually classified in general accordance with the Modified Burmister Soil Classification System.
- Photoionization detector (PID) field screening conducted with a 10.6 eV Mini Rae 2000 PID calibrated to provide readings of total ionizable volatile organic compounds as isobutylene equivalents.

SOIL BORING/MONITORING WELL CONSTRUCTION LOG							DESIGNATION	VES-119 (MW)	
<b>VERTEX®</b>		PROJECT:	Suffolk Downs Racecourse				PROJECT NO.:	43068	
		LOCATION:	525 William F. McClellan Highway, Boston, MA				DRILLER:	GeoLogic Earth Explorations, Inc.	
		INSTALLATION DATES		2/10/2017		INSPECTOR:	Kristen Sarson		
SAMPLER		CASING		CORE		GROUNDWATER DEPTH MEASUREMENTS			
TYPE	Split Spoon	TYPE	Hollow Stem	BARREL TYPE		ELEVATION INFORMATION	DATE:	2/17/2017	
SIZE (ID)	2"	MATERIAL	Steel	SIZE (ID)		DATUM:	N/A	TIME:	11:00
HAMMER (LB.)	140	DIAMETER	6"	DIAMETER		TOC:	N/A	DEPTH (Ft):	9.23 bgs
FALL (IN.)	30	LENGTH	5'			GS:	N/A	ELEVATION (Ft):	NM
SAMPLE INFORMATION							WELL CONST	PID (PPM)	
DEPTH ELEVATION	INTERVAL	PEN / REC	BLOWS / 6"	SPT	STRATA CHANGE (Ft/El)	SOIL DESCRIPTION			
0	0-2'	24/12"	2	N/A		0-3" Dark brown fine SAND and SILT, dry, no odor.		2.0	
			4			3-12" Dark brown fine to medium SAND, some debris (coal, brick, ash, glass), dry, no odor.		2.2	
1			3						
			6						
2									
3									
4									
5	5-7'	24/23"	5	N/A		0-23" Dark brown fine to medium SAND and DEBRIS (bricks, coal, charred wood, ceramic, glass, ash, wood), trace silt, damp, no odor.		1.2	
			8						
6			16						
			12						
7									
8									
9									
10	10-12'	24/8"	1	N/A		0-8" Dark brown and black fine to coarse SAND and DEBRIS (wood, charred wood, ash, glass, brick, ceramic), some silt, wet, no odor.		1.4	
			1						
11			1						
			2						
12									
13									
14									
15						End of Boring at 15 feet bgs. Refusal not encountered.			
16									
17									
18									
19									
20									
21									
22									
23									
24									
25									
26									
27									
28									
29									
MODIFIER		SAND AND GRAVEL		SILT AND CLAY		LOCATION:	Infield	ELL CONSTRUCTI	
1 - 10%	Trace	Density	Blows (N)	Consistency	Blows (N)	MONITORING WELL CONSTRUCTION DATA			
10 - 20%	Little	Very loose	0 - 4	Very soft	<2	DEPTH:	15'	DEPTH/TYPE PACK:	Sand 4-15'
20 - 35%	Some	Loose	4 - 10	Soft	2 - 4	DIAMETER (inches):	2"	DEPTH/TYPE SEAL:	Bentonite 3-4"
35 - 50%	And	Medium Dense	10 - 30	Medium Stiff	4 - 8	MATERIAL:	PVC	BACKFILL MATERIAL:	Native/Concrete
		Dense	30 - 50	Stiff	8 - 15	SLOT SIZE (inches):	0.01	SURFACE SEAL:	Concrete
		Very Dense	>50	Very Stiff	15 - 30	SCREEN INTERVAL:	5-15'	ROADBOX DESC.:	Roadbox
				Hard	>30	LENGTH OF RISER:	5'		
<b>NOTES:</b> 1. Soil are visually classified in general accordance with the Modified Burmister Soil Classification System. 2. Photoionization detector (PID) field screening conducted with a 10.6 eV Mini Rae 2000 PID calibrated to provide readings of total ionizable volatile organic compounds as isobutylene equivalents.									

SOIL BORING/MONITORING WELL CONSTRUCTION LOG							DESIGNATION	VES-120 (MW)	
<b>VERTEX®</b>		PROJECT:	Suffolk Downs Racecourse				PROJECT NO.:	43068	
		LOCATION:	525 William F. McClellan Highway, Boston, MA				DRILLER:	GeoLogic Earth Explorations, Inc.	
		INSTALLATION DATES		2/7/2017		INSPECTOR:	Kristen Sarson		
SAMPLER		CASING		CORE		GROUNDWATER DEPTH MEASUREMENTS			
TYPE	Split Spoon	TYPE	Hollow Stem	BARREL TYPE		ELEVATION INFORMATION	DATE:	2/15/2017	
SIZE (ID)	2"	MATERIAL	Steel	SIZE (ID)		DATUM:	N/A	13:30	
HAMMER (LB.)	140	DIAMETER	6"	DIAMETER		TOC:	N/A	DEPTH (Ft):	3.03 bgs
FALL (IN.)	30	LENGTH	5'			GS:	N/A	ELEVATION (Ft):	NM
SAMPLE INFORMATION							SOIL DESCRIPTION		
DEPTH ELEVATION	INTERVAL	PEN / REC	BLOWS / 6"	SPT	STRATA CHANGE (Ft/EL)		WELL CONST	PID (PPM)	
0	0-2'	24/20"	4	N/A	ASPHALT	0-2" ASPHALT.		1.6	
			7			2-12" Dark brown fine to medium SAND, some silt and debris (coal, ash, glass), dry, no odor.		3.5	
1			9			12-20" Grey fine SAND with lenses of grey silt, dry, no odor.			
2			7						
3									
4									
5	5-7'	24/2"	2	N/A		0-2" Dark brown and black fine to medium SAND and DEBRIS (coal, ceramic, shells), some coarse gravel, wet, no odor.		3.2	
			1						
6			1						
7			2						
8									
9									
10	10-12'	24/8"	1	N/A		0-8" Dark brown and black fine to medium SAND and DEBRIS (coal, ceramic rubber, wood), some coarse gravel, wet, no odor.		3.1	
11			1						
12			1			End of Boring at 12 feet bgs. Refusal not encountered.			
13									
14									
15									
16									
17									
18									
19									
20									
21									
22									
23									
24									
25									
26									
27									
28									
29									
MODIFIER	SAND AND GRAVEL		SILT AND CLAY		LOCATION:	Southwest parking area.		ELL CONSTRUCT	
1 - 10%	Trace	Density	Blows (N)	Consistency	Blows (N)	MONITORING WELL CONSTRUCTION DATA			
10 - 20%	Little	Very loose	0 - 4	Very soft	<2	DEPTH:	12'	DEPTH/TYPE PACK:	Sand 1.5-12'
20 - 35%	Some	Loose	4 - 10	Soft	2 - 4	DIAMETER (inches):	2"	DEPTH/TYPE SEAL:	Bentonite 1.5-2.5'
35 - 50%	And	Medium Dense	10 - 30	Medium Stiff	4 - 8	MATERIAL:	PVC	BACKFILL MATERIAL:	Native/Concrete
		Dense	30 - 50	Stiff	8 - 15	SLOT SIZE (inches):	0.01	SURFACE SEAL:	Concrete
		Very Dense	>50	Very Stiff	15 - 30	SCREEN INTERVAL:	2-12'	ROADBOX DESC.:	Roadbox
				Hard	>30	LENGTH OF RISER:	2'		Screen Riser Concrete Bentonite Native Sand Grout
NOTES:									
1. Soil are visually classified in general accordance with the Modified Burmister Soil Classification System.									
2. Photoionization detector (PID) field screening conducted with a 10.6 eV Mini Rae 2000 PID calibrated to provide readings of total ionizable volatile organic compounds as isobutylene equivalents.									

SOIL BORING/MONITORING WELL CONSTRUCTION LOG							DESIGNATION	VES-121 (MW)		
<b>VERTEX®</b>		PROJECT:	Suffolk Downs Racecourse			PROJECT NO.:	43068			
		LOCATION:	525 William F. McClellan Highway, Boston, MA			DRILLER:	GeoLogic Earth Explorations, Inc.			
		INSTALLATION DATES	2/7/2017			INSPECTOR:	Kristen Sarson			
<b>SAMPLER</b>		<b>CASING</b>		<b>CORE</b>		<b>GROUNDWATER DEPTH MEASUREMENTS</b>				
TYPE	Split Spoon	TYPE	Hollow Stem	BARREL TYPE		ELEVATION INFORMATION	DATE:	2/16/2017		
SIZE (ID)	2"	MATERIAL	Steel	SIZE (ID)		DATUM:	N/A	8:00		
HAMMER (LB.)	140	DIAMETER	6"	DIAMETER		TOC:	N/A	DEPTH (Ft):	2.91 bgs	
FALL (IN.)	30	LENGTH	5'			GS:	N/A	ELEVATION (Ft):	NM	
<b>SAMPLE INFORMATION</b>							<b>WELL CONST</b>	<b>PID (PPM)</b>		
DEPTH ELEVATION	INTERVAL	PEN / REC	BLOWS / 6"	SPT	STRATA CHANGE (Ft/EL)	SOIL DESCRIPTION				
0	0-2'	24/11"	6	N/A	ASPHALT	0-1" ASPHALT.				
			10		SAND	1-3" Dark black and brown medium to coarse SAND, little fine to coarse gravel, dry, no odor.				
1			12			3-5" Dark brown fine to coarse SAND, little debris (brick and wood), trace coarse gravel, no odor.				
2			17			5-11" Grey fine SAND and SILT, little coarse gravel and cobbles, no odor.				
3									2.1	
4										
5	5-7'	24/3"	1	N/A		0-3" Dark grey fine SAND and SILT, some coarse gravel, damp, no odor.			3.2	
			1							
6			1							
7			1							
8										
9										
10	10-12'	24/4"	1	N/A		0-4" Dark grey fine to medium SAND, some coarse sand and organics (wood leaves), wet, no odor.			3.5	
			1							
11			1							
12			4							
13										
14										
15	15-17'	24/0"	1	N/A		No recovery.				
			1							
16			1							
			1							
17						End of Boring at 17 feet bgs. Refusal not encountered.				
18										
19										
20										
21										
22										
23										
24										
25										
26										
27										
28										
29										
<b>MODIFIER</b>		<b>SAND AND GRAVEL</b>		<b>SILT AND CLAY</b>		LOCATION:	Southwest parking area.			<b>ELL CONSTRUCT</b>
1 - 10%	Trace	Density	Blows (N)	Consistency	Blows (N)	MONITORING WELL CONSTRUCTION DATA				Screen
10 - 20%	Little	Very loose	0 - 4	Very soft	<2	DEPTH:	15'	DEPTH/TYPE PACK:	Sand 4-15'	Riser
20 - 35%	Some	Loose	4 - 10	Soft	2 - 4	DIAMETER (inches):	2"	DEPTH/TYPE SEAL:	Bentonite 3-4"	Concrete
35 - 50%	And	Medium Dense	10 - 30	Medium Stiff	4 - 8	MATERIAL:	PVC	BACKFILL MATERIAL:	Native/Concrete	Bentonite
		Dense	30 - 50	Stiff	8 - 15	SLOT SIZE (inches):	0.01	SURFACE SEAL:	Concrete	Native
		Very Dense	>50	Very Stiff	15 - 30	SCREEN INTERVAL:	5-15'	ROADBOX DESC.:	Roadbox	Sand
				Hard	>30	LENGTH OF RISER:	5'		Grout	
<b>NOTES:</b>										
1. Soil are visually classified in general accordance with the Modified Burmister Soil Classification System.										
2. Photoionization detector (PID) field screening conducted with a 10.6 eV Mini Rae 2000 PID calibrated to provide readings of total ionizable volatile organic compounds as isobutylene equivalents.										

SOIL BORING/MONITORING WELL CONSTRUCTION LOG							DESIGNATION	VES-122			
<b>VERTEX®</b>		PROJECT: Suffolk Downs Racecourse			LOCATION: 525 William F. McClellan Highway, Boston, MA		PROJECT NO.:	43068			
INSTALLATION DATES			2/15/2017		DRILLER:	GeoLogic Earth Explorations, Inc.					
SAMPLER			CASING		CORE	GROUNDWATER DEPTH MEASUREMENTS					
TYPE	Geoprobe	TYPE	N/A	BARREL TYPE		ELEVATION INFORMATION	DATE:	N/A			
SIZE (ID)	2"	MATERIAL	N/A	SIZE (ID)		DATUM:	N/A	N/A			
HAMMER (LB.)	N/A	DIAMETER	N/A	DIAMETER		TOC:	N/A	DEPTH (FT):	N/A		
FALL (IN.)	N/A	LENGTH	N/A			GS:	N/A	ELEVATION (FT):	N/A		
SAMPLE INFORMATION							SOIL DESCRIPTION			WELL CONST	PID (PPM)
DEPTH ELEVATION	INTERVAL	PEN / REC	BLOWS / 6"	SPT	STRATA CHANGE (Ft/EL)						
0	0-4'	48/20"			ASPHALT	0-2" ASPHALT. 2-20" Brown medium to coarse SAND, some gravel, trace brick, dry, no odor.				1.9	
1											
2											
3											
4	4-8'	48/14"				0-14" Brown medium to coarse SAND, some gravel, trace brick, dry, no odor.				1.8	
5											
6											
7											
8	8-12'	48/20"				0-20" Brown medium to coarse SAND, some gravel, trace brick, wet, no odor.				1.3	
9											
10											
11											
12	12-16'	48/16"				0-16" Grey SILT, some organics, wet, odor of decaying organics.				17.1	
13											
14											
15											
16						End of Boring at 16 feet bgs. Refusal not encountered.					
17											
18											
19											
20											
21											
22											
23											
24											
25											
26											
27											
28											
29											
MODIFIER	GRANULAR SOILS		COHESIVE SOILS		LOCATION:	MONITORING WELL CONSTRUCTION DATA			WELL CONSTRUCTION		
1 - 10%	Trace	Density	Blows (N)	Consistency	Blows (N)	DEPTH:	DEPTH/TYPE PACK:			Screen Riser	
10 - 20%	Little	Very loose	0 - 4	Very soft	<2	DIAMETER (inches):	DEPTH/TYPE SEAL:			Concrete Bentomite Native Sand Grout	
20 - 35%	Some	Loose	4 - 10	Soft	2 - 4	MATERIAL:	BACKFILL MATERIAL:				
35 - 50%	And	Medium Dense	10 - 30	Medium Stiff	4 - 8	SLOT SIZE (inches):	SURFACE SEAL:				
		Dense	30 - 50	Stiff	8 - 15	SCREEN INTERVAL:	ROADBOX DESC.:				
		Very Dense	>50	Very Stiff	15 - 30	LENGTH OF RISER:					
<b>NOTES:</b> 1. Soil are visually classified in general accordance with the Modified Burmister Soil Classification System. 2. Photoionization detector (PID) field screening conducted with a 10.6 eV Mini Rae 2000 PID calibrated to provide readings of total ionizable volatile organic compounds as isobutylene equivalents.											

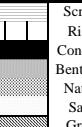
SOIL BORING/MONITORING WELL CONSTRUCTION LOG							DESIGNATION	VES-123 (MW)	
<b>VERTEX®</b>		PROJECT:	Suffolk Downs Racecourse				PROJECT NO.:	43068	
		LOCATION:	525 William F. McClellan Highway, Boston, MA				DRILLER:	GeoLogic Earth Explorations, Inc.	
		INSTALLATION DATES		2/10/2017		INSPECTOR:	Kristen Sarson		
SAMPLER		CASING		CORE		GROUNDWATER DEPTH MEASUREMENTS			
TYPE	Split Spoon	TYPE	Hollow Stem	BARREL TYPE		ELEVATION INFORMATION	DATE:	2/16/2017	
SIZE (ID)	2"	MATERIAL	Steel	SIZE (ID)		DATUM:	N/A	TIME:	16:00
HAMMER (LB.)	140	DIAMETER	6"	DIAMETER		TOC:	N/A	DEPTH (FT):	4.93 bgs
FALL (IN.)	30	LENGTH	5'			GS:	N/A	ELEVATION (FT):	NM
SAMPLE INFORMATION							WELL CONST	PID (PPM)	
DEPTH ELEVATION	INTERVAL	PEN / REC	BLOWS / 6"	SPT	STRATA CHANGE (FT/EL)	SOIL DESCRIPTION			
0	0-2'	24/18"	1	N/A		0-14" Dark brown fine to medium SAND, dry, no odor. 14-18" Tan fine to coarse SAND, some fine to coarse gravel and cobbles, dry, no odor.		<1	
				4				3.6	
1				9					
				24					
2									
3									
4									
5	5-7'	24/13"	2	N/A		0-13" Grey SILT, trace coarse gravel, wet, no odor.		<1	
				6					
6				4					
				4					
7									
8									
9									
10	10-12'	24/10"	1	N/A		0-10" Grey SILT, trace coarse gravel, wet, no odor.		5.9	
				1					
11				1					
				1					
12						End of Boring at 12 feet bgs. Refusal not encountered.			
13									
14									
15									
16									
17									
18									
19									
20									
21									
22									
23									
24									
25									
26									
27									
28									
29									
MODIFIER	SAND AND GRAVEL		SILT AND CLAY		LOCATION:	Infield		ELL CONSTRUCTI	
1 - 10%	Trace	Density	Blows (N)	Consistency	Blows (N)	MONITORING WELL CONSTRUCTION DATA			
10 - 20%	Little	Very loose	0 - 4	Very soft	<2	DEPTH:	12'	DEPTH/TYPE PACK:	Sand 1.5-12'
20 - 35%	Some	Loose	4 - 10	Soft	2 - 4	DIAMETER (inches):	2"	DEPTH/TYPE SEAL:	Bentonite 1.5-2.5'
35 - 50%	And	Medium Dense	10 - 30	Medium Stiff	4 - 8	MATERIAL:	PVC	BACKFILL MATERIAL:	Native/Concrete
		Dense	30 - 50	Stiff	8 - 15	SLOT SIZE (inches):	0.01	SURFACE SEAL:	Concrete
		Very Dense	>50	Very Stiff	15 - 30	SCREEN INTERVAL:	2-12'	ROADBOX DESC.:	Roadbox
				Hard	>30	LENGTH OF RISER:	2'		
<b>NOTES:</b> 1. Soil are visually classified in general accordance with the Modified Burmister Soil Classification System. 2. Photoionization detector (PID) field screening conducted with a 10.6 eV Mini Rae 2000 PID calibrated to provide readings of total ionizable volatile organic compounds as isobutylene equivalents.									

SOIL BORING/MONITORING WELL CONSTRUCTION LOG							DESIGNATION	VES-124		
<b>VERTEX®</b>		PROJECT: Suffolk Downs Racecourse				PROJECT NO.:	43068			
		LOCATION: 525 William F. McClellan Highway, Boston, MA				DRILLER:	GeoLogic Earth Explorations, Inc.			
		INSTALLATION DATES		2/15/2017		INSPECTOR:	Benjamin Sivonen			
SAMPLER		CASING		CORE		GROUNDWATER DEPTH MEASUREMENTS				
TYPE	Geoprobe	TYPE	N/A	BARREL TYPE		ELEVATION INFORMATION	DATE:	N/A		
SIZE (ID)	2"	MATERIAL	N/A	SIZE (ID)		DATUM:	N/A	N/A		
HAMMER (LB.)	N/A	DIAMETER	N/A	DIAMETER		TOC:	N/A	DEPTH (FT):	N/A	
FALL (IN.)	N/A	LENGTH	N/A			GS:	N/A	ELEVATION (FT):	N/A	
SAMPLE INFORMATION							SOIL DESCRIPTION		WELL CONST	PID (PPM)
DEPTH ELEVATION	INTERVAL	PEN / REC	BLOWS / 6"	SPT	STRATA CHANGE (Ft/El.)					
0	0-4'	48/30"				0-15" Tan medium SAND, trace gravel, dry, no odor.			< 1.0	
1						15-30" Brown medium SAND, some brick, galss, and wood, dry, no odor.			< 1.0	
2										
3										
4	4-8'	48/6"				0-6" Brown SAND, some brick and glass, moist, no odor.			< 1.0	
5										
6										
7										
8	8-12'	48/4"				0-4" Brown fine SAND, some silt, brick, and wood, wet, no odor.			< 1.0	
9										
10										
11										
12	12-16'	48/0"				No recovery.				
13										
14										
15										
16	16-20'	48/24"				0-24" Grey SILT, some fine sand and shells, wet, slight odor of decaying organics.			18.7	
17										
18										
19										
20						End of Boring at 20 feet bgs. Refusal not encountered.				
21										
22										
23										
24										
25										
26										
27										
28										
29										
MODIFIER	SOIL AND MINERAL		SOIL AND CLAY		LOCATION:	East service road.			WELL CONSTRUCTIO	
	(GRANULAR SOILS)		(COHESIVE SOILS)			MONITORING WELL CONSTRUCTION DATA				
1 - 10%	Trace	Density	Blows (N)	Consistency	Blows (N)	DEPTH:	DEPTH/TYPE PACK:		Screen	
10 - 20%	Little	Very loose	0 - 4	Very soft	<2	DIAMETER (inches):	DEPTH/TYPE SEAL:		Riser	
20 - 35%	Some	Loose	4 - 10	Soft	2 - 4	MATERIAL:	BACKFILL MATERIAL:		Concrete	
35 - 50%	And	Medium Dense	10 - 30	Medium Stiff	4 - 8	SLOT SIZE (inches):	SURFACE SEAL:		Bentonite	
		Dense	30 - 50	Stiff	8 - 15	SCREEN INTERVAL:	ROADBOX DESC.:		Native	
		Very Dense	>50	Very Stiff	15 - 30	LENGTH OF RISER:			Sand	
				Hard	>30				Grout	
NOTES:										
1. Soil are visually classified in general accordance with the Modified Burmister Soil Classification System.										
2. Photoionization detector (PID) field screening conducted with a 10.6 eV Mini Rae 2000 PID calibrated to provide readings of total ionizable volatile organic compounds as isobutylene equivalents.										

SOIL BORING/MONITORING WELL CONSTRUCTION LOG							DESIGNATION	VES-125 (MW)		
<b>VERTEX®</b>		PROJECT:	Suffolk Downs Racecourse			PROJECT NO.:	43068			
		LOCATION:	525 William F. McClellan Highway, Boston, MA			DRILLER:	GeoLogic Earth Explorations, Inc.			
		INSTALLATION DATES	2/14/2017			INSPECTOR:	Benjamin Sivonen			
SAMPLER		CASING		CORE		GROUNDWATER DEPTH MEASUREMENTS				
TYPE	Split Spoon	TYPE	Hollow Stem	BARREL TYPE		ELEVATION INFORMATION	DATE:	2/17/2017		
SIZE (ID)	2"	MATERIAL	Steel	SIZE (ID)		DATUM:	N/A	9:00		
HAMMER (LB.)	140	DIAMETER	6"	DIAMETER		TOC:	N/A	DEPTH (FT):	8.02	
FALL (IN.)	30	LENGTH	5'			GS:	N/A	ELEVATION (FT):	NM	
SAMPLE INFORMATION							SOIL DESCRIPTION	WELL CONST	PID (PPM)	
DEPTH ELEVATION	INTERVAL	PEN / REC	BLOWS / 6"	SPT	STRATA CHANGE (Ft/El.)					
0	0-2'	24/17"	10	N/A	ASPHALT	0-3" ASPHALT. 3-17" Tan-Brown fine to medium SAND, dry, no odor.	< 1.0			
						No recovery, gravel lodged in spoon. Moisture observed on spoon.	N/A			
1										
2										
3										
4										
5	5-7'	24/0"	1	N/A						
6										
7										
8										
9										
10	10-12'	24/6"	1	N/A		0-6" Brown medium to coarse SAND, some shells, wet, no odor.	< 1.0			
11										
12										
13										
14										
15						End of Boring at 15 feet bgs. Refusal not encountered.				
16										
17										
18										
19										
20										
21										
22										
23										
24										
25										
26										
27										
28										
29										
MODIFIER		SAND AND GRAVEL		SILT AND CLAY		LOCATION:	East of administration building.			ELL CONSTRUCTIO
1 - 10%	Trace	Density	Blows (N)	Consistency	Blows (N)	MONITORING WELL CONSTRUCTION DATA				
10 - 20%	Little	Very loose	0 - 4	Very soft	<2	DEPTH:	15'	DEPTH/TYPE PACK:	Sand 5-15'	Screen
20 - 35%	Some	Loose	4 - 10	Soft	2 - 4	DIAMETER (inches):	2"	DEPTH/TYPE SEAL:	Bentonite 4-5"	Riser
35 - 50%	And	Medium Dense	10 - 30	Medium Stiff	4 - 8	MATERIAL:	PVC	BACKFILL MATERIAL:	Native/Concrete	Concrete
		Dense	30 - 50	Stiff	8 - 15	SLOT SIZE (inches):	0.01	SURFACE SEAL:	Concrete	Bentonite
		Very Dense	>50	Very Stiff	15 - 30	SCREEN INTERVAL:	5-15'	ROADBOX DESC.:	Roadbox	Native
				Hard	>30	LENGTH OF RISER:	5'			Sand
										Grout
NOTES:										
1. Soil are visually classified in general accordance with the Modified Burmister Soil Classification System.										
2. Photoionization detector (PID) field screening conducted with a 10.6 eV Mini Rae 2000 PID calibrated to provide readings of total ionizable volatile organic compounds as isobutylene equivalents.										

SOIL BORING/MONITORING WELL CONSTRUCTION LOG							DESIGNATION	VES-126			
<b>VERTEX®</b>		PROJECT:	Suffolk Downs Racecourse			PROJECT NO.:	43068				
		LOCATION:	525 William F. McClellan Highway, Boston, MA			DRILLER:	GeoLogic Earth Explorations, Inc.				
		INSTALLATION DATES		2/15/2017		INSPECTOR:	Benjamin Sivonen				
SAMPLER		CASING		CORE		GROUNDWATER DEPTH MEASUREMENTS					
TYPE	Geoprobe	TYPE	N/A	BARREL TYPE		ELEVATION INFORMATION	DATE:	N/A			
SIZE (ID)	2"	MATERIAL	N/A	SIZE (ID)		DATUM:	N/A	N/A			
HAMMER (LB.)	N/A	DIAMETER	N/A	DIAMETER		TOC:	N/A	DEPTH (FT):	N/A		
FALL (IN.)	N/A	LENGTH	N/A			GS:	N/A	ELEVATION (FT):	N/A		
SAMPLE INFORMATION							SOIL DESCRIPTION				
DEPTH ELEVATION	INTERVAL	PEN / REC	BLOWS / 6"	SPT	STRATA CHANGE (Ft/El.)				WELL CONST	PID (PPM)	
0	0-4'	48/16"			ASPHALT	0-2" ASPHALT. 2-16" Brown medium to coarse SAND, some gravel, dry, no odor.				< 1.0	
1											
2											
3											
4	4-8'	48/12"				0-12" Brown medium to coarse SAND, trace gravel, dry, no odor.				< 1.0	
5											
6											
7											
8	8-12'	48/12"				0-12" Brown fine to medium SAND, some gravel, wet, no odor.				< 1.0	
9											
10											
11											
12	12-16'	48/0"				No recovery.					
13											
14											
15											
16	16-20'	48/0"				No recovery.					
17											
18											
19											
20	20-24'	48/0"				No recovery.					
21											
22											
23											
24						End of Boring at 24 feet bgs. Refusal not encountered.					
25											
26											
27											
28											
29											
MODIFIER		(GRANULAR SOILS)		(CONCRETE SOILS)		LOCATION:	East of grandstand.			WELL CONSTRUCTION	
1 - 10%	Trace	Density	Blows (N)	Consistency	Blows (N)	MONITORING WELL CONSTRUCTION DATA					
10 - 20%	Little	Very loose	0 - 4	Very soft	<2	DEPTH:		DEPTH/TYPE PACK:			Screen Riser
20 - 35%	Some	Loose	4 - 10	Soft	2 - 4	DIAMETER (inches):		DEPTH/TYPE SEAL:			Concrete Bentonite
35 - 50%	And	Medium Dense	10 - 30	Medium Stiff	4 - 8	MATERIAL:		BACKFILL MATERIAL:			Native Sand Grout
		Dense	30 - 50	Stiff	8 - 15	SLOT SIZE (inches):		SURFACE SEAL:			Native Sand Grout
		Very Dense	>50	Very Stiff	15 - 30	SCREEN INTERVAL:		ROADBOX DESC.:			Native Sand Grout
				Hard	>30	LENGTH OF RISER:					
NOTES:											
1. Soil are visually classified in general accordance with the Modified Burmister Soil Classification System.											
2. Photoionization detector (PID) field screening conducted with a 10.6 eV Mini Rae 2000 PID calibrated to provide readings of total ionizable volatile organic compounds as isobutylene equivalents.											

SOIL BORING/MONITORING WELL CONSTRUCTION LOG							DESIGNATION	VES-127			
<b>VERTEX®</b>		PROJECT: Suffolk Downs Racecourse			LOCATION: 525 William F. McClellan Highway, Boston, MA		PROJECT NO.:	43068			
INSTALLATION DATES			2/15/2017		DRILLER:	GeoLogic Earth Explorations, Inc.					
					INSPECTOR:	Benjamin Sivonen					
SAMPLER		CASING		CORE		GROUNDWATER DEPTH MEASUREMENTS					
TYPE	Geoprobe	TYPE	N/A	BARREL TYPE		ELEVATION INFORMATION	DATE:	N/A			
SIZE (ID)	2"	MATERIAL	N/A	SIZE (ID)		DATUM:	N/A	N/A			
HAMMER (LB.)	N/A	DIAMETER	N/A	DIAMETER		TOC:	N/A	DEPTH (FT):	N/A		
FALL (IN.)	N/A	LENGTH	N/A			GS:	N/A	ELEVATION (FT):	N/A		
SAMPLE INFORMATION							SOIL DESCRIPTION			WELL CONST	PID (PPM)
DEPTH ELEVATION	INTERVAL	PEN / REC	BLOWS / 6"	SPT	STRATA CHANGE (Ft/El.)						
0	0-4'	48/40"				0-2" Brown SILT and organics (top soil), dry, no odor. 2-40" Brown SILT, some fine to medium SAND, dry, no odor.				< 1.0	
1										< 1.0	
2											
3											
4	4-8'	48/0"				No recovery.				N/A	
5											
6											
7											
8	8-12'	48/0"				No recovery.				N/A	
9											
10											
11											
12	12-16'	48/0"				No recovery.				N/A	
13											
14											
15											
16	16-20'	48/30"				0-4" Black SAND, some gravel, wet, no odor. 4-30" Black-Grey clayey SILT, trace shells and organics, wet, odor of decaying organics.				< 1.0 247	
17											
18											
19											
20						End of Boring at 20 feet bgs. Refusal not encountered.					
21											
22											
23											
24											
25											
26											
27											
28											
29											
MODIFIER	GRANULAR SOILS		COHESIVE SOILS		LOCATION:	Infield.			WELL CONSTRUCTION		
1 - 10%	Trace	Density	Blows (N)	Consistency	Blows (N)	MONITORING WELL CONSTRUCTION DATA					Screen
10 - 20%	Little	Very loose	0 - 4	Very soft	<2	DEPTH:	DEPTH/TYPE PACK:			Riser	
20 - 35%	Some	Loose	4 - 10	Soft	2 - 4	DIAMETER (inches):	DEPTH/TYPE SEAL:			Concrete	
35 - 50%	And	Medium Dense	10 - 30	Medium Stiff	4 - 8	MATERIAL:	BACKFILL MATERIAL:			Bentonite	
		Dense	30 - 50	Stiff	8 - 15	SLOT SIZE (inches):	SURFACE SEAL:			Native	
		Very Dense	>50	Very Stiff	15 - 30	SCREEN INTERVAL:	ROADBOX DESC.:			Sand	
				Hard	>30	LENGTH OF RISER:				Grout	
NOTES:											
1. Soil are visually classified in general accordance with the Modified Burmister Soil Classification System.											
2. Photoionization detector (PID) field screening conducted with a 10.6 eV Mini Rae 2000 PID calibrated to provide readings of total ionizable volatile organic compounds as isobutylene equivalents.											

SOIL BORING/MONITORING WELL CONSTRUCTION LOG							DESIGNATION	VES-128		
<b>VERTEX®</b>		PROJECT:	Suffolk Downs Racetrack			PROJECT NO.:	43068			
		LOCATION:	525 William F. McClellan Highway, Boston, MA			DRILLER:	GeoLogic Earth Explorations, Inc.			
		INSTALLATION DATES	2/16/2017			INSPECTOR:	Kristen Sarson			
<b>SAMPLER</b>		<b>CASING</b>		<b>CORE</b>		<b>GROUNDWATER DEPTH MEASUREMENTS</b>				
TYPE	Split Spoon	TYPE	Hollow Stem	BARREL TYPE		ELEVATION INFORMATION	DATE:	N/A		
SIZE (ID)	2"	MATERIAL	Steel	SIZE (ID)		DATUM:	N/A	N/A		
HAMMER (LB.)	140	DIAMETER	4.25"	DIAMETER		TOC:	N/A	DEPTH (Ft):		
FALL (IN.)	30	LENGTH	5'			GS:	N/A	ELEVATION (Ft):		
<b>SAMPLE INFORMATION</b>							<b>WELL CONST</b>	<b>PID (PPM)</b>		
DEPTH ELEVATION	INTERVAL	PEN / REC	BLOWS / 6"	SPT	STRATA CHANGE (Ft/EL)	<b>SOIL DESCRIPTION</b>				
0	0'-2'	24/20"	6	N/A	SAND and DEBRIS	0-5" Tan fine to coarse SAND, trace coarse gravel, damp, no odor. 5-6" Dark brown fine SAND and SILT, some coarse gravel, damp, no odor. 6-20" Dark brown fine SAND, some silt and debris (coal, glass, charcoal, ash wood), trace coarse gravel, damp, no odor.		0.2		
			10						0.3	
1			9						1.5	
			10							
2										
3										
4										
5	5-7'	24/1"	2	N/A			0-1" Dark brown fine to coarse SAND and DEBRIS (glass, wood), wet, no odor.		1.3	
			1							
6			2							
7			2							
8										
9										
10	10-12'	24/14"	3	N/A			0-14" Dark grey SILT and ORGANICS, sulfur odor, wet.		449.0	
			1						<1	
11			1							
12			2							
13										
14										
15	15-17'	24/22"	NM	N/A	SILT	0-22" Dark grey SILT and ORGANICS, sulfur odor, wet.				
16										
17										
18										
19										
...										
...										
...										
...										
90										
91										
92										
93										
94										
<b>MODIFIER</b>	<b>SAND AND GRAVEL</b>		<b>SILT AND CLAY</b>			LOCATION:	East service road.			<b>ELL CONSTRUCT</b>
1 - 10%	Trace	Density	Blows (N)	Consistency		Blows (N)	<b>MONITORING WELL CONSTRUCTION DATA</b>			
10 - 20%	Little	Very loose	0 - 4	Very soft		<2	DEPTH:	DEPTH/TYPE PACK:		
20 - 35%	Some	Loos	4 - 10	Soft		2 - 4	DIAMETER (inches):	DEPTH/TYPE SEAL:		
35 - 50%	And	Medium Dense	10 - 30	Medium Stiff		4 - 8	MATERIAL:	BACKFILL MATERIAL:		
		Dense	30 - 50	Stiff	8 - 15	SLOT SIZE (inches):	SURFACE SEAL:			
		Very Dense	>50	Very Stiff	15 - 30	SCREEN INTERVAL:	ROADBOX DESC.:			
				Hard	>30	LENGTH OF RISER:				
<b>NOTES:</b>										
1. Soil are visually classified in general accordance with the Modified Burmister Soil Classification System.										
2. Photoionization detector (PID) field screening conducted with a 10.6 eV Mini Rae 2000 PID calibrated to provide readings of total ionizable volatile organic compounds as isobutylene equivalents.										
3. W.O.H. = Weight of Hammer.										

SOIL BORING/MONITORING WELL CONSTRUCTION LOG							DESIGNATION	VES-129 (MW)	
<b>VERTEX®</b>		PROJECT:	Suffolk Downs Racecourse				PROJECT NO.:	43068	
		LOCATION:	525 William F. McClellan Highway, Boston, MA				DRILLER:	GeoLogic Earth Explorations, Inc.	
		INSTALLATION DATES		2/6/2017		INSPECTOR:	Kristen Sarson		
SAMPLER		CASING		CORE		GROUNDWATER DEPTH MEASUREMENTS			
TYPE	Split Spoon	TYPE	Hollow Stem	BARREL TYPE		ELEVATION INFORMATION	DATE:	2/15/2017	
SIZE (ID)	2"	MATERIAL	Steel	SIZE (ID)		DATUM:	N/A	TIME:	10:00
HAMMER (LB.)	140	DIAMETER	6"	DIAMETER		TOC:	N/A	DEPTH (FT):	4.00
FALL (IN.)	30	LENGTH	5'			GS:	N/A	ELEVATION (FT):	NM
SAMPLE INFORMATION							SOIL DESCRIPTION		
DEPTH ELEVATION	INTERVAL	PEN / REC	BLOWS / 6"	SPT	STRATA CHANGE (Fe/El)		WELL CONST	PID (PPM)	
0	0'-2'	24/11"	3	N/A		0-1" ASPHALT. 1-11" Dark grey and black fine to coarse SAND, some debris (coal, asphalt, ash, wood, paper), trace cobbles, damp, no odor.		6.7	
			5						
1			5						
			3						
2									
3									
4									
5	5-7'	24/9"	1	N/A		0-9" Dark brown fine to coarse SAND and DEBRIS (crushed shells, glass, brick, wood), trace coarse gravel, wet, no odor.		5.8	
			1						
6			1						
			1						
7									
8									
9									
10	10-12'	24/14"	1	N/A		0-3" Dark grey medium to coarse SAND, some debris (crushed shells, brick), trace silt, wet, no odor.		1.5	
			1						
11			1			3-14" Dark grey fine to coarse SAND, wet, no odor.		<1	
			1						
12						End of Boring at 12 feet bgs. Refusal not encountered.			
13									
14									
15									
16									
17									
18									
19									
20									
21									
22									
23									
24									
25									
26									
27									
28									
29									
MODIFIER	SAND AND GRAVEL		SILT AND CLAY		LOCATION:	Southwest parking area.		ELL CONSTRUCTI	
1 - 10%	Trace	Density	Blows (N)	Consistency	Blows (N)	MONITORING WELL CONSTRUCTION DATA			
10 - 20%	Little	Very loose	0 - 4	Very soft	<2	DEPTH:	12'	DEPTH/TYPE PACK:	Sand 1.5-12'
20 - 35%	Some	Loose	4 - 10	Soft	2 - 4	DIAMETER (inches):	2"	DEPTH/TYPE SEAL:	Bentonite 1.5-2.5'
35 - 50%	And	Medium Dense	10 - 30	Medium Stiff	4 - 8	MATERIAL:	PVC	BACKFILL MATERIAL:	Native/Concrete
		Dense	30 - 50	Stiff	8 - 15	SLOT SIZE (inches):	0.01	SURFACE SEAL:	Concrete
		Very Dense	>50	Very Stiff	15 - 30	SCREEN INTERVAL:	2-12'	ROADBOX DESC.:	Standpipe
				Hard	>30	LENGTH OF RISER:	5'		
<b>NOTES:</b> 1. Soil are visually classified in general accordance with the Modified Burmister Soil Classification System. 2. Photoionization detector (PID) field screening conducted with a 10.6 eV Mini Rae 2000 PID calibrated to provide readings of total ionizable volatile organic compounds as isobutylene equivalents.									

SOIL BORING/MONITORING WELL CONSTRUCTION LOG							DESIGNATION	VES-130	
<b>VERTEX®</b>		PROJECT:	Suffolk Downs Racecourse			PROJECT NO.:	43068		
		LOCATION:	525 William F. McClellan Highway, Boston, MA			DRILLER:	GeoLogic Earth Explorations, Inc.		
		INSTALLATION DATES	2/15/2017			INSPECTOR:	Benjamin Sivonen		
SAMPLER		CASING		CORE		GROUNDWATER DEPTH MEASUREMENTS			
TYPE	Geoprobe	TYPE	N/A	BARREL TYPE		ELEVATION INFORMATION	DATE:	N/A	
SIZE (ID)	2"	MATERIAL	N/A	SIZE (ID)		DATUM:	N/A	N/A	
HAMMER (LB.)	N/A	DIAMETER	N/A	DIAMETER		TOC:	N/A	DEPTH (Ft):	
FALL (IN.)	N/A	LENGTH	N/A			GS:	N/A	ELEVATION (Ft):	
SAMPLE INFORMATION							WELL CONST	PID (PPM)	
DEPTH ELEVATION	INTERVAL	PEN / REC	BLOWS / 6"	SPT	STRATA CHANGE (F/El.)	SOIL DESCRIPTION			
0	0-4'	48/24"			ASPHALT	0-3" ASPHALT. 3-24" Brown silty SAND, some gravel, trace brick and wood, dry, no odor	< 1.0		
1							< 1.0		
2									
3									
4	4-8'	48/6"			SAND	0-6" Brown fine SAND, some silt and wood, wet, no odor.	< 1.0		
5									
6									
7									
8	8-12'	48/24"				0-12" Black medium to coarse SAND, some silt, trace coal ash, wet, sheen observed on water, no odor.	< 1.0		
9									
10					SILT	12-24" Grey SILT and organics, wet, odor of decaying organics.	37.8		
11									
12	12-16'	48/0"				No recovery.			
13									
14									
15									
16	16-20'	48/0"				No recovery.			
17									
18									
19									
20						End of Boring at 20 feet bgs. Refusal not encountered.			
21									
22									
23									
24									
25									
26									
27									
28									
29									
MODIFIER		SAND AND GRAVEL		SILT AND CLAY		LOCATION:	Southwest corner of track.		ELL CONSTRUCTIO
1 - 10%	Trace	Density	Blows (N)	Consistency	Blows (N)	MONITORING WELL CONSTRUCTION DATA			
10 - 20%	Little	Very loose	0 - 4	Very soft	<2	DEPTH:	DEPTH/TYPE PACK:		Screen Riser
20 - 35%	Some	Loose	4 - 10	Soft	2 - 4	DIAMETER (inches):	DEPTH/TYPE SEAL:		Concrete
35 - 50%	And	Medium Dense	10 - 30	Medium Stiff	4 - 8	MATERIAL:	BACKFILL MATERIAL:		Bentonite
		Dense	30 - 50	Stiff	8 - 15	SLOT SIZE (inches):	SURFACE SEAL:		Native
		Very Dense	>50	Very Stiff	15 - 30	SCREEN INTERVAL:	ROADBOX DESC.:		Sand Grout
				Hard	>30	LENGTH OF RISER:			
NOTES:									
1. Soil are visually classified in general accordance with the Modified Burmister Soil Classification System.									
2. Photoionization detector (PID) field screening conducted with a 10.6 eV Mini Rae 2000 PID calibrated to provide readings of total ionizable volatile organic compounds as isobutylene equivalents.									

SOIL BORING/MONITORING WELL CONSTRUCTION LOG							DESIGNATION	VES-131	
<b>VERTEX®</b>		PROJECT:	Suffolk Downs Racecourse			PROJECT NO.:	43068		
		LOCATION:	525 William F. McClellan Highway, Boston, MA			DRILLER:	GeoLogic Earth Explorations, Inc.		
		INSTALLATION DATES	2/15/2017			INSPECTOR:	Benjamin Sivonen		
SAMPLER		CASING	CORE		GROUNDWATER DEPTH MEASUREMENTS				
TYPE	Geoprobe	TYPE	N/A	BARREL TYPE		ELEVATION INFORMATION	DATE:	N/A	
SIZE (ID)	2"	MATERIAL	N/A	SIZE (ID)		DATUM:	N/A	N/A	
HAMMER (LB.)	N/A	DIAMETER	N/A	DIAMETER		TOC:	N/A	DEPTH (Ft):	
FALL (IN.)	N/A	LENGTH	N/A			GS:	N/A	ELEVATION (Ft):	
SAMPLE INFORMATION							WELL CONST	PID (PPM)	
DEPTH ELEVATION	INTERVAL	PEN / REC	BLOWS / 6"	SPT	STRATA CHANGE (Ft/El.)	SOIL DESCRIPTION			
0	0-4'	48/24"				0-4" Tan fine to medium SAND and organics (top soil), dry, no odor. 4-24" Tan fine to medium SAND, dry, no odor.	< 1.0		
1							< 1.0		
2									
3									
4	4-8'	48/8"				0-8" Tan fine to medium SAND, moist, no odor.	< 1.0		
5									
6									
7									
8	8-12'	48/0"				No recovery.			
9									
10									
11									
12	12-16'	48/0"				No recovery.			
13									
14									
15									
16	16-20'	48/24"				0-24" Grey SILT, some fine sand, wet, no odor.	< 1.0		
17									
18									
19									
20						End of Boring at 20 feet bgs. Refusal not encountered.			
21									
22									
23									
24									
25									
26									
27									
28									
29									
MODIFIER		SAND AND GRAVEL		SILT AND CLAY		LOCATION:	South of race track.		ELL CONSTRUCTIO
1 - 10%	Trace	Density	Blows (N)	Consistency	Blows (N)	MONITORING WELL CONSTRUCTION DATA			
10 - 20%	Little	Very loose	0 - 4	Very soft	<2	DEPTH:	DEPTH/TYPE PACK:		Screen
20 - 35%	Some	Loose	4 - 10	Soft	2 - 4	DIAMETER (inches):	DEPTH/TYPE SEAL:		Riser
35 - 50%	And	Medium Dense	10 - 30	Medium Stiff	4 - 8	MATERIAL:	BACKFILL MATERIAL:		Concrete
		Dense	30 - 50	Stiff	8 - 15	SLOT SIZE (inches):	SURFACE SEAL:		Bentonite
		Very Dense	>50	Very Stiff	15 - 30	SCREEN INTERVAL:	ROADBOX DESC.:		Native
				Hard	>30	LENGTH OF RISER:			Sand
									Grout
NOTES:									
1. Soil are visually classified in general accordance with the Modified Burmister Soil Classification System.									
2. Photoionization detector (PID) field screening conducted with a 10.6 eV Mini Rae 2000 PID calibrated to provide readings of total ionizable volatile organic compounds as isobutylene equivalents.									

SOIL BORING/MONITORING WELL CONSTRUCTION LOG							DESIGNATION	VES-132 (MW)	
<b>VERTEX®</b>		PROJECT:	Suffolk Downs Racecourse				PROJECT NO.:	43068	
		LOCATION:	525 William F. McClellan Highway, Boston, MA				DRILLER:	GeoLogic Earth Explorations, Inc.	
		INSTALLATION DATES		2/6/2017		INSPECTOR:	Kristen Sarson		
SAMPLER		CASING		CORE		GROUNDWATER DEPTH MEASUREMENTS			
TYPE	Split Spoon	TYPE	Hollow Stem	BARREL TYPE		ELEVATION INFORMATION	DATE:	2/15/2017	
SIZE (ID)	2"	MATERIAL	Steel	SIZE (ID)		DATUM:	N/A	TIME:	10:00
HAMMER (LB.)	140	DIAMETER	4.25"	DIAMETER		TOC:	N/A	DEPTH (FT):	2.81
FALL (IN.)	30	LENGTH	5'			GS:	N/A	ELEVATION (FT):	NM
SAMPLE INFORMATION							WELL CONST	PID (PPM)	
DEPTH ELEVATION	INTERVAL	PEN / REC	BLOWS / 6"	SPT	STRATA CHANGE (Ft/El)	SOIL DESCRIPTION			
0	0-2'	24/12"	1	N/A		0-8" Dark brown fine SAND, some silt, trace coarse gravel, dry, no odor. 8-12" Tan fine SAND, trace silt, dry, no odor.		1.7	
			2						
1			6						
			10						
2	2-4'	24/12"	9	N/A		0-8" Tan fine SAND, some coarse sand and cobbles, dry, no odor. 8-12" Tan fine SAND, some medium to coarse sand, trace clay, damp, no odor.		2.0	
			10					1.5	
3			3						
			5						
4	4-6'	24/12"	5	N/A		0-5" Brown CLAY with some silt, trace fine gravel, wet, no odor. 5-12" Dark brown fine to coarse SAND and some crushed shells, trace coarse gravel, wet, no odor.		<1	
			2					<1	
5			3						
			1						
6	6-8'	24/4"	2	N/A		0-4" Dark brown fine SAND and CLAY, some shells, wet, no odor.		<1	
			2						
7			1						
			1						
8									
9									
10	10-12'	24/4"	1	N/A		0-4" Dark brown fine SAND and crushed SHELLS, trace cobbles, wet, no odor.		<1	
			1						
11			1						
			1						
12									
13									
14									
15						End of Boring at 15 feet bgs. Refusal not encountered.			
16									
17									
18									
19									
20									
21									
22									
23									
24									
25									
26									
27									
28									
29									
MODIFIER	SAND AND GRAVEL		SILT AND CLAY		LOCATION:	Grass area abutting Route 1A.		ELL CONSTRUCTI	
1 - 10%	Trace	Density	Blows (N)	Consistency	Blows (N)	MONITORING WELL CONSTRUCTION DATA			
10 - 20%	Little	Very loose	0 - 4	Very soft	<2	DEPTH:	15'	DEPTH/TYPE PACK:	Sand 4-15'
20 - 35%	Some	Loose	4 - 10	Soft	2 - 4	DIAMETER (inches):	2"	DEPTH/TYPE SEAL:	Bentonite 3-4"
35 - 50%	And	Medium Dense	10 - 30	Medium Stiff	4 - 8	MATERIAL:	PVC	BACKFILL MATERIAL:	Native/Concrete
		Dense	30 - 50	Stiff	8 - 15	SLOT SIZE (inches):	0.01	SURFACE SEAL:	Concrete
		Very Dense	>50	Very Stiff	15 - 30	SCREEN INTERVAL:	5-15'	ROADBOX DESC.:	Roadbox
				Hard	>30	LENGTH OF RISER:	5'		
<b>NOTES:</b> 1. Soil are visually classified in general accordance with the Modified Burmister Soil Classification System. 2. Photoionization detector (PID) field screening conducted with a 10.6 eV Mini Rae 2000 PID calibrated to provide readings of total ionizable volatile organic compounds as isobutylene equivalents.									

SOIL BORING/MONITORING WELL CONSTRUCTION LOG							DESIGNATION	VES-133 (MW)	
<b>VERTEX®</b>		PROJECT:	Suffolk Downs Racecourse			PROJECT NO.:	43068		
		LOCATION:	525 William F. McClellan Highway, Boston, MA			DRILLER:	GeoLogic Earth Explorations, Inc.		
		INSTALLATION DATES	2/6/2017			INSPECTOR:	Kristen Sarson		
SAMPLER		CASING	CORE		GROUNDWATER DEPTH MEASUREMENTS				
TYPE	Split Spoon	TYPE	Hollow Stem	BARREL TYPE	ELEVATION INFORMATION	DATE:	2/15/2017		
SIZE (ID)	2"	MATERIAL	Steel	SIZE (ID)	DATUM:	N/A	11:00		
HAMMER (LB.)	140	DIAMETER	4.25"	DIAMETER	TOC:	N/A	DEPTH (FT):	3.00	
FALL (IN.)	30	LENGTH	5'		GS:	N/A	ELEVATION (FT):	NM	
SAMPLE INFORMATION							WELL CONST	PID (PPM)	
DEPTH ELEVATION	INTERVAL	PEN / REC	BLOWS / 6"	SPT	STRATA CHANGE (ft/El)	SOIL DESCRIPTION			
0	0-2'	24/10"	6	N/A		0-10" Tan fine to coarse SAND, some coarse gravel and cobbles, dry, no odor.		<1	
			26						
1			50						
2									
3									
4									
5	5-7'	24/8"	1	N/A		0-8" Dark brown fine to coarse SAND, some organics (wood), trace silt, wet, no odor.		<1	
			1						
6			1						
7			1						
8									
9									
10	10-12'	24/6"	1	N/A		0-6" Dark brown fine to coarse SAND, some organics (wood and leaves), trace silt, wet, no odor.		<1	
			1						
11			1						
			1						
12						End of Boring at 12 feet bgs. Refusal not encountered.			
13									
14									
15									
16									
17									
18									
19									
20									
21									
22									
23									
24									
25									
26									
27									
28									
29									
MODIFIER		SAND AND GRAVEL		SILT AND CLAY		LOCATION:	Southwest parking area.		ELL CONSTRUCT
1 - 10%	Trace	Density	Blows (N)	Consistency	Blows (N)	MONITORING WELL CONSTRUCTION DATA			
10 - 20%	Little	Very loose	0 - 4	Very soft	<2	DEPTH:	12'	DEPTH/TYPE PACK:	Sand 1.5-12'
20 - 35%	Some	Loose	4 - 10	Soft	2 - 4	DIAMETER (inches):	2"	DEPTH/TYPE SEAL:	Bentonite 1.5-2.5'
35 - 50%	And	Medium Dense	10 - 30	Medium Stiff	4 - 8	MATERIAL:	PVC	BACKFILL MATERIAL:	Native/Concrete
		Dense	30 - 50	Stiff	8 - 15	SLOT SIZE (inches):	0.01	SURFACE SEAL:	Concrete
		Very Dense	>50	Very Stiff	15 - 30	SCREEN INTERVAL:	2-12'	ROADBOX DESC.:	Standpipe
				Hard	>30	LENGTH OF RISER:	5'		
<b>NOTES:</b> 1. Soil are visually classified in general accordance with the Modified Burmister Soil Classification System. 2. Photoionization detector (PID) field screening conducted with a 10.6 eV Mini Rae 2000 PID calibrated to provide readings of total ionizable volatile organic compounds as isobutylene equivalents.									

SOIL BORING/MONITORING WELL CONSTRUCTION LOG							DESIGNATION	VES-134			
<b>VERTEX®</b>		PROJECT:	Suffolk Downs Racecourse			PROJECT NO.:	43068				
		LOCATION:	525 William F. McClellan Highway, Boston, MA			DRILLER:	GeoLogic Earth Explorations, Inc.				
		INSTALLATION DATES	2/15/2017			INSPECTOR:	Benjamin Sivonen				
SAMPLER		CASING		CORE		GROUNDWATER DEPTH MEASUREMENTS					
TYPE	Geoprobe	TYPE	N/A	BARREL TYPE		ELEVATION INFORMATION	DATE:	N/A			
SIZE (ID)	2"	MATERIAL	N/A	SIZE (ID)		DATUM:	N/A	TIME:	N/A		
HAMMER (LB.)	N/A	DIAMETER	N/A	DIAMETER		TOC:	N/A	DEPTH (FT):	N/A		
FALL (IN.)	N/A	LENGTH	N/A			GS:	N/A	ELEVATION (FT):	N/A		
SAMPLE INFORMATION							SOIL DESCRIPTION			WELL CONST	PID (PPM)
DEPTH ELEVATION	INTERVAL	PEN / REC	BLOWS / 6"	SPT	STRATA CHANGE (Ft/EL.)						
0	0-4'	48/30"			ASPHALT	0-3" ASPHALT. 3-30" Brown fine to medium SAND, trace brick and wood, dry, no odor.			< 1.0	< 1.0	
1											
2											
3											
4	4-8'	48/30"			SAND	0-30" Brown medium to coarse SAND, some silt, trace wood and brick, wet, no odor.			< 1.0	< 1.0	
5											
6											
7											
8	8-12'	48/4				0-4" Black sandy SILT, trace brick and wood, wet, no odor.			< 1.0	< 1.0	
9											
10											
11											
12	12-16'	48/3"			SILT	0-3" Black sandy SILT, trace brick and wood, wet, no odor.			< 1.0	< 1.0	
13											
14											
15											
16	16-20'	48/0				No recovery.					
17											
18											
19											
20	20-24'	48/0				No recovery.					
21											
22											
23											
24						End of Boring at 24 feet bgs. Refusal not encountered.					
25											
26											
27											
28											
29											
MODIFIER	(GRANULAR SOILS)		(CONCRETE SOILS)		LOCATION:	Barn area.			WELL CONSTRUCTION		
1 - 10%	Trace	Density	Blows (N)	Consistency	Blows (N)	MONITORING WELL CONSTRUCTION DATA					
10 - 20%	Little	Very loose	0 - 4	Very soft	<2	DEPTH:	DEPTH/TYPE PACK:				Screen Riser
20 - 35%	Some	Loose	4 - 10	Soft	2 - 4	DIAMETER (inches):	DEPTH/TYPE SEAL:				Concrete Bentomite
35 - 50%	And	Medium Dense	10 - 30	Medium Stiff	4 - 8	MATERIAL:	BACKFILL MATERIAL:				Native Sand Grout
		Dense	30 - 50	Stiff	8 - 15	SLOT SIZE (inches):	SURFACE SEAL:				Native Sand Grout
		Very Dense	>50	Very Stiff	15 - 30	SCREEN INTERVAL:	ROADBOX DESC.:				Native Sand Grout
				Hard	>30	LENGTH OF RISER:					
NOTES:											
1. Soil are visually classified in general accordance with the Modified Burmister Soil Classification System.											
2. Photoionization detector (PID) field screening conducted with a 10.6 eV Mini Rae 2000 PID calibrated to provide readings of total ionizable volatile organic compounds as isobutylene equivalents.											

SOIL BORING/MONITORING WELL CONSTRUCTION LOG							DESIGNATION	VES-135 (MW)		
<b>VERTEX®</b>		PROJECT:	Suffolk Downs Racecourse				PROJECT NO.:	43068		
		LOCATION:	525 William F. McClellan Highway, Boston, MA				DRILLER:	GeoLogic Earth Explorations, Inc.		
		INSTALLATION DATES	2/6/2017				INSPECTOR:	Kristen Sarson		
SAMPLER		CASING		CORE		GROUNDWATER DEPTH MEASUREMENTS				
TYPE	Split Spoon	TYPE	Hollow Stem	BARREL TYPE		ELEVATION INFORMATION	DATE:	2/15/2017		
SIZE (ID)	2"	MATERIAL	Steel	SIZE (ID)		DATUM:	N/A	TIME:	11:00	
HAMMER (LB.)	140	DIAMETER	4.25"	DIAMETER		TOC:	N/A	DEPTH (FT):	1.75 bgs	
FALL (IN.)	30	LENGTH	5'			GS:	N/A	ELEVATION (FT):	NM	
SAMPLE INFORMATION							WELL CONST	PID (PPM)		
DEPTH ELEVATION	INTERVAL	PEN / REC	BLOWS / 6"	SPT	STRATA CHANGE (Ft/El)	SOIL DESCRIPTION				
0	0-2'	24/20"	8	N/A		0-20" Light brown fine to medium SAND, trace coarse gravel and cobbles, dry, no odor.		<1		
1										
2										
3										
4										
5	5-7'	24/13"	1	N/A		0-13" Dark brown and grey fine to coarse SAND and DEBRIS (shells, brick stone), trace cobbles and coarse gravel, wet, no odor.		3.1		
6										
7										
8										
9										
10	10-12'	24/14	1	N/A		0-4" Dark brown fine to coarse SAND and crushed SHELL, trace silt, wet, no odor.		2.1		
11						4-14" Tan CLAY, little silt, wet.				
12						End of Boring at 12 feet bgs. Refusal not encountered.				
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										
23										
24										
25										
26										
27										
28										
29										
MODIFIER		SAND AND GRAVEL		SILT AND CLAY		LOCATION:	Grass area abutting Route 1A.		ELL CONSTRUCTI	
1 - 10%	Trace	Density	Blows (N)	Consistency	Blows (N)	MONITORING WELL CONSTRUCTION DATA				
10 - 20%	Little	Very loose	0 - 4	Very soft	<2	DEPTH:	12'	DEPTH/TYPE PACK:	Sand 1.5-12'	Screen Riser
20 - 35%	Some	Loose	4 - 10	Soft	2 - 4	DIAMETER (inches):	2"	DEPTH/TYPE SEAL:	Bentonite 1.5-2.5'	Concrete
35 - 50%	And	Medium Dense	10 - 30	Medium Stiff	4 - 8	MATERIAL:	PVC	BACKFILL MATERIAL:	Native/Concrete	Bentonite Native Sand Grout
		Dense	30 - 50	Stiff	8 - 15	SLOT SIZE (inches):	0.01	SURFACE SEAL:	Concrete	
		Very Dense	>50	Very Stiff	15 - 30	SCREEN INTERVAL:	2-12'	ROADBOX DESC.:	Roadbox	
				Hard	>30	LENGTH OF RISER:	2'			
NOTES:										
1. Soil are visually classified in general accordance with the Modified Burmister Soil Classification System.										
2. Photoionization detector (PID) field screening conducted with a 10.6 eV Mini Rae 2000 PID calibrated to provide readings of total ionizable volatile organic compounds as isobutylene equivalents.										

SOIL BORING/MONITORING WELL CONSTRUCTION LOG							DESIGNATION	VES-136			
<b>VERTEX®</b>		PROJECT: Suffolk Downs Racecourse			LOCATION: 525 William F. McClellan Highway, Boston, MA		PROJECT NO.:	43068			
INSTALLATION DATES			2/16/2017		DRILLER:	GeoLogic Earth Explorations, Inc.					
					INSPECTOR:	Benjamin Sivonen					
SAMPLER		CASING		CORE		GROUNDWATER DEPTH MEASUREMENTS					
TYPE	Geoprobe	TYPE	N/A	BARREL TYPE		ELEVATION INFORMATION	DATE:	N/A			
SIZE (ID)	2"	MATERIAL	N/A	SIZE (ID)		DATUM:	N/A	N/A			
HAMMER (LB.)	N/A	DIAMETER	N/A	DIAMETER		TOC:	N/A	DEPTH (FT):	N/A		
FALL (IN.)	N/A	LENGTH	N/A			GS:	N/A	ELEVATION (FT):	N/A		
SAMPLE INFORMATION							SOIL DESCRIPTION			WELL CONST	PID (PPM)
DEPTH ELEVATION	INTERVAL	PEN / REC	BLOWS / 6"	SPT	STRATA CHANGE (Ft/El.)						
0	0-4'	48/24"			SILT	0-4" Brown SILT and organics (top soil). 4-20" Brown fine to medium SAND, trace gravel, dry, no odor.				< 1.0	
1										< 1.0	
2											
3											
4	4-8'	48/20"			SAND	0-20" Tan fine to medium SAND, trace gravel and brick, wet, no odor.				< 1.0	
5											
6											
7											
8	8-12'	48/48"				0-48" Tan SILT, trace coarse sand, wet, no odor.				< 1.0	
9											
10											
11											
12	12-16'	48/0"			SILT	No recovery.					
13											
14											
15											
16						End of Boring at 16 feet bgs. Refusal not encountered.					
17											
18											
19											
20											
21											
22											
23											
24											
25											
26											
27											
28											
29											
MODIFIER	(DECREASE IN SOIL G)		(INCREASE IN SOIL C)		LOCATION:	Barn area.			WELL CONSTRUCTIO		
1 - 10%	Trace	Density	Blows (N)	Consistency	Blows (N)	MONITORING WELL CONSTRUCTION DATA					
10 - 20%	Little	Very loose	0 - 4	Very soft	<2	DEPTH:	DEPTH/TYPE PACK:			Screen	
20 - 35%	Some	Loose	4 - 10	Soft	2 - 4	DIAMETER (inches):	DEPTH/TYPE SEAL:			Riser	
35 - 50%	And	Medium Dense	10 - 30	Medium Stiff	4 - 8	MATERIAL:	BACKFILL MATERIAL:			Concrete	
		Dense	30 - 50	Stiff	8 - 15	SLOT SIZE (inches):	SURFACE SEAL:			Bentonite	
		Very Dense	>50	Very Stiff	15 - 30	SCREEN INTERVAL:	ROADBOX DESC.:			Native	
				Hard	>30	LENGTH OF RISER:				Sand	
										Grout	
NOTES:											
1. Soil are visually classified in general accordance with the Modified Burmister Soil Classification System.											
2. Photoionization detector (PID) field screening conducted with a 10.6 eV Mini Rae 2000 PID calibrated to provide readings of total ionizable volatile organic compounds as isobutylene equivalents.											

**APPENDIX B:**  
**Laboratory Analytical Reports**



## ANALYTICAL REPORT

Lab Number:	L1703745
Client:	Vertex Environmental Services, Inc. 400 Libbey Pkwy Weymouth, MA 02184
ATTN:	Bill Gibbons
Phone:	(617) 830-1540
Project Name:	EAST BOSTON
Project Number:	43068
Report Date:	02/13/17

The original project report/data package is held by Alpha Analytical. This report/data package is paginated and should be reproduced only in its entirety. Alpha Analytical holds no responsibility for results and/or data that are not consistent with the original.

*Certifications & Approvals:* MA (M-MA086), NH NELAP (2064), NJ NELAP (MA935), CT (PH-0574), IL (200077), ME (MA00086), MD (348), NH (2003), NY (1111-25700/666), PA (68-03671), RI (LA000065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #P330-14-00197).

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Eight Walkup Drive, Westborough, MA 01581-1019  
508-898-9220 (Fax) 508-898-9193 800-624-9220 - [www.alphalab.com](http://www.alphalab.com)



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703745  
**Report Date:** 02/13/17

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L1703745-01	VES-132 (2-3)	SOIL	MA	02/06/17 08:00	02/06/17
L1703745-02	VES-135 (0-2)	SOIL	MA	02/06/17 09:30	02/06/17
L1703745-03	VES-133 (0-2)	SOIL	MA	02/06/17 12:45	02/06/17
L1703745-04	VES-133 (5-7)	SOIL	MA	02/06/17 13:00	02/06/17
L1703745-05	VES-129 (0-2)	SOIL	MA	02/06/17 13:15	02/06/17

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703745  
**Report Date:** 02/13/17

### MADEP MCP Response Action Analytical Report Certification

This form provides certifications for all samples performed by MCP methods. Please refer to the Sample Results and Container Information sections of this report for specification of MCP methods used for each analysis. The following questions pertain only to MCP Analytical Methods.

<b>An affirmative response to questions A through F is required for "Presumptive Certainty" status</b>		
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
B	Were the analytical method(s) and all associated QC requirements specified in the selected CAM protocol(s) followed?	YES
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
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
E a.	VPH, EPH, and APH Methods only: Was each method conducted without significant modification(s)? (Refer to the individual method(s) for a list of significant modifications).	YES
E b.	APH and TO-15 Methods only: Was the complete analyte list reported for each method?	N/A
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

<b>A response to questions G, H and I is required for "Presumptive Certainty" status</b>		
G	Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocol(s)?	NO
H	Were all QC performance standards specified in the CAM protocol(s) achieved?	NO
I	Were results reported for the complete analyte list specified in the selected CAM protocol(s)?	NO

**For any questions answered "No", please refer to the case narrative section on the following page(s).**

Please note that sample matrix information is located in the Sample Results section of this report.



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703745  
**Report Date:** 02/13/17

### Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively. When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. All specific QC information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated usability implications. Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances the specific failure is not narrated but noted in the associated QC table. The information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated usability implications.

Please see the associated ADEx data file for a comparison of laboratory reporting limits that were achieved with the regulatory Numerical Standards requested on the Chain of Custody.

#### HOLD POLICY

For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Client Service Representative and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Client Services at 800-624-9220 with any questions.

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703745  
**Report Date:** 02/13/17

### Case Narrative (continued)

#### MCP Related Narratives

Sample Receipt

In reference to question H:

A Matrix Spike was not submitted for the analysis of Metals.

#### Volatile Organics

In reference to question H:

The initial calibration, associated with L1703745-04 and -05, did not meet the method required minimum response factor on the lowest calibration standard for 1,4-dioxane (0.0020), as well as the average response factor for 1,4-dioxane.

The continuing calibration standards, associated with L1703745-01, -02, -04, and -05, are outside the acceptance criteria for several compounds; however, they are within overall method allowances. Copies of the continuing calibration standards are included as an addendum to this report.

#### VPH

In reference to question I:

All samples were analyzed for a subset of MCP analytes per the Chain of Custody.

#### EPH

In reference to question I:

All samples were analyzed for a subset of MCP analytes per the Chain of Custody.

#### Pesticides

A copy of the Degradation Standards for 4,4'-DDT and Endrin breakdown products is included as an addendum.

In reference to question G:

One or more of the target analytes did not achieve the requested CAM reporting limits.

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703745  
**Report Date:** 02/13/17

**Case Narrative (continued)**

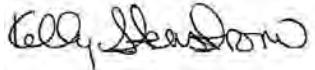
Metals

In reference to question I:

All samples were analyzed for a subset of MCP analytes per the Chain of Custody.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature:

 Kelly Stenstrom

Title: Technical Director/Representative

Date: 02/13/17

# ORGANICS



# VOLATILES



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703745  
**Report Date:** 02/13/17

**SAMPLE RESULTS**

Lab ID:	L1703745-01	Date Collected:	02/06/17 08:00
Client ID:	VES-132 (2-3)	Date Received:	02/06/17
Sample Location:	MA	Field Prep:	Not Specified
Matrix:	Soil		
Analytical Method:	97,8260C		
Analytical Date:	02/09/17 14:27		
Analyst:	TE		
Percent Solids:	87%		

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics by 8260/5035 - Westborough Lab</b>						
Methylene chloride	ND	ug/kg	8.8	--	--	1
1,1-Dichloroethane	ND	ug/kg	1.3	--	--	1
Chloroform	ND	ug/kg	1.3	--	--	1
Carbon tetrachloride	ND	ug/kg	0.88	--	--	1
1,2-Dichloropropane	ND	ug/kg	3.1	--	--	1
Dibromochloromethane	ND	ug/kg	0.88	--	--	1
1,1,2-Trichloroethane	ND	ug/kg	1.3	--	--	1
Tetrachloroethene	ND	ug/kg	0.88	--	--	1
Chlorobenzene	ND	ug/kg	0.88	--	--	1
Trichlorofluoromethane	ND	ug/kg	3.5	--	--	1
1,2-Dichloroethane	ND	ug/kg	0.88	--	--	1
1,1,1-Trichloroethane	ND	ug/kg	0.88	--	--	1
Bromodichloromethane	ND	ug/kg	0.88	--	--	1
trans-1,3-Dichloropropene	ND	ug/kg	0.88	--	--	1
cis-1,3-Dichloropropene	ND	ug/kg	0.88	--	--	1
1,3-Dichloropropene, Total	ND	ug/kg	0.88	--	--	1
1,1-Dichloropropene	ND	ug/kg	3.5	--	--	1
Bromoform	ND	ug/kg	3.5	--	--	1
1,1,2,2-Tetrachloroethane	ND	ug/kg	0.88	--	--	1
Benzene	ND	ug/kg	0.88	--	--	1
Toluene	ND	ug/kg	1.3	--	--	1
Ethylbenzene	ND	ug/kg	0.88	--	--	1
Chloromethane	ND	ug/kg	3.5	--	--	1
Bromomethane	ND	ug/kg	1.8	--	--	1
Vinyl chloride	ND	ug/kg	1.8	--	--	1
Chloroethane	ND	ug/kg	1.8	--	--	1
1,1-Dichloroethene	ND	ug/kg	0.88	--	--	1
trans-1,2-Dichloroethene	ND	ug/kg	1.3	--	--	1
Trichloroethene	ND	ug/kg	0.88	--	--	1
1,2-Dichlorobenzene	ND	ug/kg	3.5	--	--	1



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703745  
**Report Date:** 02/13/17

**SAMPLE RESULTS**

Lab ID:	L1703745-01	Date Collected:	02/06/17 08:00
Client ID:	VES-132 (2-3)	Date Received:	02/06/17
Sample Location:	MA	Field Prep:	Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics by 8260/5035 - Westborough Lab</b>						
1,3-Dichlorobenzene	ND	ug/kg	3.5	--	--	1
1,4-Dichlorobenzene	ND	ug/kg	3.5	--	--	1
Methyl tert butyl ether	ND	ug/kg	1.8	--	--	1
p/m-Xylene	ND	ug/kg	1.8	--	--	1
o-Xylene	ND	ug/kg	1.8	--	--	1
Xylenes, Total	ND	ug/kg	1.8	--	--	1
cis-1,2-Dichloroethene	ND	ug/kg	0.88	--	--	1
1,2-Dichloroethene, Total	ND	ug/kg	0.88	--	--	1
Dibromomethane	ND	ug/kg	3.5	--	--	1
1,2,3-Trichloropropane	ND	ug/kg	3.5	--	--	1
Styrene	ND	ug/kg	1.8	--	--	1
Dichlorodifluoromethane	ND	ug/kg	8.8	--	--	1
Acetone	ND	ug/kg	32	--	--	1
Carbon disulfide	ND	ug/kg	3.5	--	--	1
Methyl ethyl ketone	ND	ug/kg	8.8	--	--	1
Methyl isobutyl ketone	ND	ug/kg	8.8	--	--	1
2-Hexanone	ND	ug/kg	8.8	--	--	1
Bromochloromethane	ND	ug/kg	3.5	--	--	1
Tetrahydrofuran	ND	ug/kg	3.5	--	--	1
2,2-Dichloropropane	ND	ug/kg	4.4	--	--	1
1,2-Dibromoethane	ND	ug/kg	3.5	--	--	1
1,3-Dichloropropane	ND	ug/kg	3.5	--	--	1
1,1,1,2-Tetrachloroethane	ND	ug/kg	0.88	--	--	1
Bromobenzene	ND	ug/kg	4.4	--	--	1
n-Butylbenzene	ND	ug/kg	0.88	--	--	1
sec-Butylbenzene	ND	ug/kg	0.88	--	--	1
tert-Butylbenzene	ND	ug/kg	3.5	--	--	1
o-Chlorotoluene	ND	ug/kg	3.5	--	--	1
p-Chlorotoluene	ND	ug/kg	3.5	--	--	1
1,2-Dibromo-3-chloropropane	ND	ug/kg	3.5	--	--	1
Hexachlorobutadiene	ND	ug/kg	3.5	--	--	1
Isopropylbenzene	ND	ug/kg	0.88	--	--	1
p-Isopropyltoluene	ND	ug/kg	0.88	--	--	1
Naphthalene	ND	ug/kg	3.5	--	--	1
n-Propylbenzene	ND	ug/kg	0.88	--	--	1
1,2,3-Trichlorobenzene	ND	ug/kg	3.5	--	--	1
1,2,4-Trichlorobenzene	ND	ug/kg	3.5	--	--	1
1,3,5-Trimethylbenzene	ND	ug/kg	3.5	--	--	1
1,2,4-Trimethylbenzene	ND	ug/kg	3.5	--	--	1



Project Name: EAST BOSTON

Lab Number: L1703745

Project Number: 43068

Report Date: 02/13/17

**SAMPLE RESULTS**

Lab ID: L1703745-01  
 Client ID: VES-132 (2-3)  
 Sample Location: MA

Date Collected: 02/06/17 08:00  
 Date Received: 02/06/17  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics by 8260/5035 - Westborough Lab						
Diethyl ether	ND	ug/kg	4.4	--	--	1
Diisopropyl Ether	ND	ug/kg	3.5	--	--	1
Ethyl-Tert-Butyl-Ether	ND	ug/kg	3.5	--	--	1
Tertiary-Amyl Methyl Ether	ND	ug/kg	3.5	--	--	1
1,4-Dioxane	ND	ug/kg	35	--	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	100		70-130
Toluene-d8	94		70-130
4-Bromofluorobenzene	98		70-130
Dibromofluoromethane	98		70-130

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703745  
**Report Date:** 02/13/17

**SAMPLE RESULTS**

Lab ID: L1703745-02  
Client ID: VES-135 (0-2)  
Sample Location: MA  
Matrix: Soil  
Analytical Method: 97,8260C  
Analytical Date: 02/09/17 14:54  
Analyst: TE  
Percent Solids: 85%

Date Collected: 02/06/17 09:30  
Date Received: 02/06/17  
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics by 8260/5035 - Westborough Lab</b>						
Methylene chloride	ND	ug/kg	9.8	--	--	1
1,1-Dichloroethane	ND	ug/kg	1.5	--	--	1
Chloroform	ND	ug/kg	1.5	--	--	1
Carbon tetrachloride	ND	ug/kg	0.98	--	--	1
1,2-Dichloropropane	ND	ug/kg	3.4	--	--	1
Dibromochloromethane	ND	ug/kg	0.98	--	--	1
1,1,2-Trichloroethane	ND	ug/kg	1.5	--	--	1
Tetrachloroethene	ND	ug/kg	0.98	--	--	1
Chlorobenzene	ND	ug/kg	0.98	--	--	1
Trichlorofluoromethane	ND	ug/kg	3.9	--	--	1
1,2-Dichloroethane	ND	ug/kg	0.98	--	--	1
1,1,1-Trichloroethane	ND	ug/kg	0.98	--	--	1
Bromodichloromethane	ND	ug/kg	0.98	--	--	1
trans-1,3-Dichloropropene	ND	ug/kg	0.98	--	--	1
cis-1,3-Dichloropropene	ND	ug/kg	0.98	--	--	1
1,3-Dichloropropene, Total	ND	ug/kg	0.98	--	--	1
1,1-Dichloropropene	ND	ug/kg	3.9	--	--	1
Bromoform	ND	ug/kg	3.9	--	--	1
1,1,2,2-Tetrachloroethane	ND	ug/kg	0.98	--	--	1
Benzene	ND	ug/kg	0.98	--	--	1
Toluene	ND	ug/kg	1.5	--	--	1
Ethylbenzene	ND	ug/kg	0.98	--	--	1
Chloromethane	ND	ug/kg	3.9	--	--	1
Bromomethane	ND	ug/kg	2.0	--	--	1
Vinyl chloride	ND	ug/kg	2.0	--	--	1
Chloroethane	ND	ug/kg	2.0	--	--	1
1,1-Dichloroethene	ND	ug/kg	0.98	--	--	1
trans-1,2-Dichloroethene	ND	ug/kg	1.5	--	--	1
Trichloroethene	ND	ug/kg	0.98	--	--	1
1,2-Dichlorobenzene	ND	ug/kg	3.9	--	--	1



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703745  
**Report Date:** 02/13/17

**SAMPLE RESULTS**

Lab ID:	L1703745-02	Date Collected:	02/06/17 09:30			
Client ID:	VES-135 (0-2)	Date Received:	02/06/17			
Sample Location:	MA	Field Prep:	Not Specified			
Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics by 8260/5035 - Westborough Lab</b>						
1,3-Dichlorobenzene	ND	ug/kg	3.9	--	1	
1,4-Dichlorobenzene	ND	ug/kg	3.9	--	1	
Methyl tert butyl ether	ND	ug/kg	2.0	--	1	
p/m-Xylene	ND	ug/kg	2.0	--	1	
o-Xylene	ND	ug/kg	2.0	--	1	
Xylenes, Total	ND	ug/kg	2.0	--	1	
cis-1,2-Dichloroethene	ND	ug/kg	0.98	--	1	
1,2-Dichloroethene, Total	ND	ug/kg	0.98	--	1	
Dibromomethane	ND	ug/kg	3.9	--	1	
1,2,3-Trichloropropane	ND	ug/kg	3.9	--	1	
Styrene	ND	ug/kg	2.0	--	1	
Dichlorodifluoromethane	ND	ug/kg	9.8	--	1	
Acetone	ND	ug/kg	35	--	1	
Carbon disulfide	ND	ug/kg	3.9	--	1	
Methyl ethyl ketone	ND	ug/kg	9.8	--	1	
Methyl isobutyl ketone	ND	ug/kg	9.8	--	1	
2-Hexanone	ND	ug/kg	9.8	--	1	
Bromochloromethane	ND	ug/kg	3.9	--	1	
Tetrahydrofuran	ND	ug/kg	3.9	--	1	
2,2-Dichloropropane	ND	ug/kg	4.9	--	1	
1,2-Dibromoethane	ND	ug/kg	3.9	--	1	
1,3-Dichloropropane	ND	ug/kg	3.9	--	1	
1,1,1,2-Tetrachloroethane	ND	ug/kg	0.98	--	1	
Bromobenzene	ND	ug/kg	4.9	--	1	
n-Butylbenzene	ND	ug/kg	0.98	--	1	
sec-Butylbenzene	ND	ug/kg	0.98	--	1	
tert-Butylbenzene	ND	ug/kg	3.9	--	1	
o-Chlorotoluene	ND	ug/kg	3.9	--	1	
p-Chlorotoluene	ND	ug/kg	3.9	--	1	
1,2-Dibromo-3-chloropropane	ND	ug/kg	3.9	--	1	
Hexachlorobutadiene	ND	ug/kg	3.9	--	1	
Isopropylbenzene	ND	ug/kg	0.98	--	1	
p-Isopropyltoluene	ND	ug/kg	0.98	--	1	
Naphthalene	ND	ug/kg	3.9	--	1	
n-Propylbenzene	ND	ug/kg	0.98	--	1	
1,2,3-Trichlorobenzene	ND	ug/kg	3.9	--	1	
1,2,4-Trichlorobenzene	ND	ug/kg	3.9	--	1	
1,3,5-Trimethylbenzene	ND	ug/kg	3.9	--	1	
1,2,4-Trimethylbenzene	ND	ug/kg	3.9	--	1	



Project Name: EAST BOSTON

Lab Number: L1703745

Project Number: 43068

Report Date: 02/13/17

**SAMPLE RESULTS**

Lab ID: L1703745-02  
 Client ID: VES-135 (0-2)  
 Sample Location: MA

Date Collected: 02/06/17 09:30  
 Date Received: 02/06/17  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics by 8260/5035 - Westborough Lab						
Diethyl ether	ND	ug/kg	4.9	--	--	1
Diisopropyl Ether	ND	ug/kg	3.9	--	--	1
Ethyl-Tert-Butyl-Ether	ND	ug/kg	3.9	--	--	1
Tertiary-Amyl Methyl Ether	ND	ug/kg	3.9	--	--	1
1,4-Dioxane	ND	ug/kg	39	--	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	97		70-130
Toluene-d8	96		70-130
4-Bromofluorobenzene	105		70-130
Dibromofluoromethane	97		70-130

**Project Name:** EAST BOSTON  
**Project Number:** 43068

Serial\_No:02131717:50

**Lab Number:** L1703745  
**Report Date:** 02/13/17

### SAMPLE RESULTS

Lab ID: L1703745-04  
Client ID: VES-133 (5-7)  
Sample Location: MA  
Matrix: Soil  
Analytical Method: 97,8260C  
Analytical Date: 02/10/17 11:28  
Analyst: MV  
Percent Solids: 46%

Date Collected: 02/06/17 13:00  
Date Received: 02/06/17  
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics by 8260/5035 - Westborough Lab						
Methylene chloride	ND	ug/kg	30	--	--	1
1,1-Dichloroethane	ND	ug/kg	4.6	--	--	1
Chloroform	ND	ug/kg	4.6	--	--	1
Carbon tetrachloride	ND	ug/kg	3.0	--	--	1
1,2-Dichloropropane	ND	ug/kg	11	--	--	1
Dibromochloromethane	ND	ug/kg	3.0	--	--	1
1,1,2-Trichloroethane	ND	ug/kg	4.6	--	--	1
Tetrachloroethene	ND	ug/kg	3.0	--	--	1
Chlorobenzene	ND	ug/kg	3.0	--	--	1
Trichlorofluoromethane	ND	ug/kg	12	--	--	1
1,2-Dichloroethane	ND	ug/kg	3.0	--	--	1
1,1,1-Trichloroethane	ND	ug/kg	3.0	--	--	1
Bromodichloromethane	ND	ug/kg	3.0	--	--	1
trans-1,3-Dichloropropene	ND	ug/kg	3.0	--	--	1
cis-1,3-Dichloropropene	ND	ug/kg	3.0	--	--	1
1,3-Dichloropropene, Total	ND	ug/kg	3.0	--	--	1
1,1-Dichloropropene	ND	ug/kg	12	--	--	1
Bromoform	ND	ug/kg	12	--	--	1
1,1,2,2-Tetrachloroethane	ND	ug/kg	3.0	--	--	1
Benzene	ND	ug/kg	3.0	--	--	1
Toluene	ND	ug/kg	4.6	--	--	1
Ethylbenzene	ND	ug/kg	3.0	--	--	1
Chloromethane	ND	ug/kg	12	--	--	1
Bromomethane	ND	ug/kg	6.1	--	--	1
Vinyl chloride	ND	ug/kg	6.1	--	--	1
Chloroethane	ND	ug/kg	6.1	--	--	1
1,1-Dichloroethene	ND	ug/kg	3.0	--	--	1
trans-1,2-Dichloroethene	ND	ug/kg	4.6	--	--	1
Trichloroethene	ND	ug/kg	3.0	--	--	1
1,2-Dichlorobenzene	ND	ug/kg	12	--	--	1



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703745  
**Report Date:** 02/13/17

**SAMPLE RESULTS**

Lab ID:	L1703745-04	Date Collected:	02/06/17 13:00		
Client ID:	VES-133 (5-7)	Date Received:	02/06/17		
Sample Location:	MA	Field Prep:	Not Specified		
Parameter	Result	Qualifier	Units	RL	MDL
<b>MCP Volatile Organics by 8260/5035 - Westborough Lab</b>					
1,3-Dichlorobenzene	ND	ug/kg	12	--	1
1,4-Dichlorobenzene	ND	ug/kg	12	--	1
Methyl tert butyl ether	ND	ug/kg	6.1	--	1
p/m-Xylene	ND	ug/kg	6.1	--	1
o-Xylene	ND	ug/kg	6.1	--	1
Xylenes, Total	ND	ug/kg	6.1	--	1
cis-1,2-Dichloroethene	ND	ug/kg	3.0	--	1
1,2-Dichloroethene, Total	ND	ug/kg	3.0	--	1
Dibromomethane	ND	ug/kg	12	--	1
1,2,3-Trichloropropane	ND	ug/kg	12	--	1
Styrene	ND	ug/kg	6.1	--	1
Dichlorodifluoromethane	ND	ug/kg	30	--	1
Acetone	310	ug/kg	110	--	1
Carbon disulfide	ND	ug/kg	12	--	1
Methyl ethyl ketone	91	ug/kg	30	--	1
Methyl isobutyl ketone	ND	ug/kg	30	--	1
2-Hexanone	ND	ug/kg	30	--	1
Bromochloromethane	ND	ug/kg	12	--	1
Tetrahydrofuran	ND	ug/kg	12	--	1
2,2-Dichloropropane	ND	ug/kg	15	--	1
1,2-Dibromoethane	ND	ug/kg	12	--	1
1,3-Dichloropropane	ND	ug/kg	12	--	1
1,1,1,2-Tetrachloroethane	ND	ug/kg	3.0	--	1
Bromobenzene	ND	ug/kg	15	--	1
n-Butylbenzene	ND	ug/kg	3.0	--	1
sec-Butylbenzene	ND	ug/kg	3.0	--	1
tert-Butylbenzene	ND	ug/kg	12	--	1
o-Chlorotoluene	ND	ug/kg	12	--	1
p-Chlorotoluene	ND	ug/kg	12	--	1
1,2-Dibromo-3-chloropropane	ND	ug/kg	12	--	1
Hexachlorobutadiene	ND	ug/kg	12	--	1
Isopropylbenzene	ND	ug/kg	3.0	--	1
p-Isopropyltoluene	ND	ug/kg	3.0	--	1
Naphthalene	ND	ug/kg	12	--	1
n-Propylbenzene	ND	ug/kg	3.0	--	1
1,2,3-Trichlorobenzene	ND	ug/kg	12	--	1
1,2,4-Trichlorobenzene	ND	ug/kg	12	--	1
1,3,5-Trimethylbenzene	ND	ug/kg	12	--	1
1,2,4-Trimethylbenzene	ND	ug/kg	12	--	1



Project Name: EAST BOSTON

Lab Number: L1703745

Project Number: 43068

Report Date: 02/13/17

**SAMPLE RESULTS**

Lab ID: L1703745-04

Date Collected: 02/06/17 13:00

Client ID: VES-133 (5-7)

Date Received: 02/06/17

Sample Location: MA

Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics by 8260/5035 - Westborough Lab						
Diethyl ether	ND		ug/kg	15	--	1
Diisopropyl Ether	ND		ug/kg	12	--	1
Ethyl-Tert-Butyl-Ether	ND		ug/kg	12	--	1
Tertiary-Amyl Methyl Ether	ND		ug/kg	12	--	1
1,4-Dioxane	ND		ug/kg	120	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	100		70-130
Toluene-d8	104		70-130
4-Bromofluorobenzene	117		70-130
Dibromofluoromethane	99		70-130

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703745  
**Report Date:** 02/13/17

**SAMPLE RESULTS**

Lab ID: L1703745-05  
Client ID: VES-129 (0-2)  
Sample Location: MA  
Matrix: Soil  
Analytical Method: 97,8260C  
Analytical Date: 02/10/17 11:54  
Analyst: MV  
Percent Solids: 89%

Date Collected: 02/06/17 13:15  
Date Received: 02/06/17  
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics by 8260/5035 - Westborough Lab</b>						
Methylene chloride	ND	ug/kg	18	--	--	1
1,1-Dichloroethane	ND	ug/kg	2.6	--	--	1
Chloroform	ND	ug/kg	2.6	--	--	1
Carbon tetrachloride	ND	ug/kg	1.8	--	--	1
1,2-Dichloropropane	ND	ug/kg	6.2	--	--	1
Dibromochloromethane	ND	ug/kg	1.8	--	--	1
1,1,2-Trichloroethane	ND	ug/kg	2.6	--	--	1
Tetrachloroethene	ND	ug/kg	1.8	--	--	1
Chlorobenzene	ND	ug/kg	1.8	--	--	1
Trichlorofluoromethane	ND	ug/kg	7.1	--	--	1
1,2-Dichloroethane	ND	ug/kg	1.8	--	--	1
1,1,1-Trichloroethane	ND	ug/kg	1.8	--	--	1
Bromodichloromethane	ND	ug/kg	1.8	--	--	1
trans-1,3-Dichloropropene	ND	ug/kg	1.8	--	--	1
cis-1,3-Dichloropropene	ND	ug/kg	1.8	--	--	1
1,3-Dichloropropene, Total	ND	ug/kg	1.8	--	--	1
1,1-Dichloropropene	ND	ug/kg	7.1	--	--	1
Bromoform	ND	ug/kg	7.1	--	--	1
1,1,2,2-Tetrachloroethane	ND	ug/kg	1.8	--	--	1
Benzene	ND	ug/kg	1.8	--	--	1
Toluene	ND	ug/kg	2.6	--	--	1
Ethylbenzene	ND	ug/kg	1.8	--	--	1
Chloromethane	ND	ug/kg	7.1	--	--	1
Bromomethane	ND	ug/kg	3.5	--	--	1
Vinyl chloride	ND	ug/kg	3.5	--	--	1
Chloroethane	ND	ug/kg	3.5	--	--	1
1,1-Dichloroethene	ND	ug/kg	1.8	--	--	1
trans-1,2-Dichloroethene	ND	ug/kg	2.6	--	--	1
Trichloroethene	ND	ug/kg	1.8	--	--	1
1,2-Dichlorobenzene	ND	ug/kg	7.1	--	--	1



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703745  
**Report Date:** 02/13/17

**SAMPLE RESULTS**

Lab ID:	L1703745-05	Date Collected:	02/06/17 13:15		
Client ID:	VES-129 (0-2)	Date Received:	02/06/17		
Sample Location:	MA	Field Prep:	Not Specified		
Parameter	Result	Qualifier	Units	RL	MDL
<b>MCP Volatile Organics by 8260/5035 - Westborough Lab</b>					
1,3-Dichlorobenzene	ND	ug/kg	7.1	--	1
1,4-Dichlorobenzene	ND	ug/kg	7.1	--	1
Methyl tert butyl ether	ND	ug/kg	3.5	--	1
p/m-Xylene	ND	ug/kg	3.5	--	1
o-Xylene	ND	ug/kg	3.5	--	1
Xylenes, Total	ND	ug/kg	3.5	--	1
cis-1,2-Dichloroethene	ND	ug/kg	1.8	--	1
1,2-Dichloroethene, Total	ND	ug/kg	1.8	--	1
Dibromomethane	ND	ug/kg	7.1	--	1
1,2,3-Trichloropropane	ND	ug/kg	7.1	--	1
Styrene	ND	ug/kg	3.5	--	1
Dichlorodifluoromethane	ND	ug/kg	18	--	1
Acetone	ND	ug/kg	64	--	1
Carbon disulfide	ND	ug/kg	7.1	--	1
Methyl ethyl ketone	ND	ug/kg	18	--	1
Methyl isobutyl ketone	ND	ug/kg	18	--	1
2-Hexanone	ND	ug/kg	18	--	1
Bromochloromethane	ND	ug/kg	7.1	--	1
Tetrahydrofuran	ND	ug/kg	7.1	--	1
2,2-Dichloropropane	ND	ug/kg	8.8	--	1
1,2-Dibromoethane	ND	ug/kg	7.1	--	1
1,3-Dichloropropane	ND	ug/kg	7.1	--	1
1,1,1,2-Tetrachloroethane	ND	ug/kg	1.8	--	1
Bromobenzene	ND	ug/kg	8.8	--	1
n-Butylbenzene	ND	ug/kg	1.8	--	1
sec-Butylbenzene	ND	ug/kg	1.8	--	1
tert-Butylbenzene	ND	ug/kg	7.1	--	1
o-Chlorotoluene	ND	ug/kg	7.1	--	1
p-Chlorotoluene	ND	ug/kg	7.1	--	1
1,2-Dibromo-3-chloropropane	ND	ug/kg	7.1	--	1
Hexachlorobutadiene	ND	ug/kg	7.1	--	1
Isopropylbenzene	ND	ug/kg	1.8	--	1
p-Isopropyltoluene	ND	ug/kg	1.8	--	1
Naphthalene	ND	ug/kg	7.1	--	1
n-Propylbenzene	ND	ug/kg	1.8	--	1
1,2,3-Trichlorobenzene	ND	ug/kg	7.1	--	1
1,2,4-Trichlorobenzene	ND	ug/kg	7.1	--	1
1,3,5-Trimethylbenzene	ND	ug/kg	7.1	--	1
1,2,4-Trimethylbenzene	ND	ug/kg	7.1	--	1



Project Name: EAST BOSTON

Lab Number: L1703745

Project Number: 43068

Report Date: 02/13/17

**SAMPLE RESULTS**

Lab ID: L1703745-05  
 Client ID: VES-129 (0-2)  
 Sample Location: MA

Date Collected: 02/06/17 13:15  
 Date Received: 02/06/17  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics by 8260/5035 - Westborough Lab						
Diethyl ether	ND	ug/kg	8.8	--	--	1
Diisopropyl Ether	ND	ug/kg	7.1	--	--	1
Ethyl-Tert-Butyl-Ether	ND	ug/kg	7.1	--	--	1
Tertiary-Amyl Methyl Ether	ND	ug/kg	7.1	--	--	1
1,4-Dioxane	ND	ug/kg	71	--	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	103		70-130
Toluene-d8	102		70-130
4-Bromofluorobenzene	110		70-130
Dibromofluoromethane	99		70-130

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703745  
**Report Date:** 02/13/17

### Method Blank Analysis Batch Quality Control

Analytical Method: 97,8260C  
Analytical Date: 02/09/17 09:53  
Analyst: TE

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics by 8260/5035 - Westborough Lab for sample(s):	01-02	Batch:	WG976794-5		
Methylene chloride	ND		ug/kg	10	--
1,1-Dichloroethane	ND		ug/kg	1.5	--
Chloroform	ND		ug/kg	1.5	--
Carbon tetrachloride	ND		ug/kg	1.0	--
1,2-Dichloropropane	ND		ug/kg	3.5	--
Dibromochloromethane	ND		ug/kg	1.0	--
1,1,2-Trichloroethane	ND		ug/kg	1.5	--
Tetrachloroethene	ND		ug/kg	1.0	--
Chlorobenzene	ND		ug/kg	1.0	--
Trichlorofluoromethane	ND		ug/kg	4.0	--
1,2-Dichloroethane	ND		ug/kg	1.0	--
1,1,1-Trichloroethane	ND		ug/kg	1.0	--
Bromodichloromethane	ND		ug/kg	1.0	--
trans-1,3-Dichloropropene	ND		ug/kg	1.0	--
cis-1,3-Dichloropropene	ND		ug/kg	1.0	--
1,3-Dichloropropene, Total	ND		ug/kg	1.0	--
1,1-Dichloropropene	ND		ug/kg	4.0	--
Bromoform	ND		ug/kg	4.0	--
1,1,2,2-Tetrachloroethane	ND		ug/kg	1.0	--
Benzene	ND		ug/kg	1.0	--
Toluene	ND		ug/kg	1.5	--
Ethylbenzene	ND		ug/kg	1.0	--
Chloromethane	ND		ug/kg	4.0	--
Bromomethane	ND		ug/kg	2.0	--
Vinyl chloride	ND		ug/kg	2.0	--
Chloroethane	ND		ug/kg	2.0	--
1,1-Dichloroethene	ND		ug/kg	1.0	--
trans-1,2-Dichloroethene	ND		ug/kg	1.5	--
Trichloroethene	ND		ug/kg	1.0	--



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703745  
**Report Date:** 02/13/17

**Method Blank Analysis**  
**Batch Quality Control**

Analytical Method: 97,8260C  
Analytical Date: 02/09/17 09:53  
Analyst: TE

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics by 8260/5035 - Westborough Lab for sample(s):	01-02	Batch:	WG976794-5		
1,2-Dichlorobenzene	ND	ug/kg	4.0	--	
1,3-Dichlorobenzene	ND	ug/kg	4.0	--	
1,4-Dichlorobenzene	ND	ug/kg	4.0	--	
Methyl tert butyl ether	ND	ug/kg	2.0	--	
p/m-Xylene	ND	ug/kg	2.0	--	
o-Xylene	ND	ug/kg	2.0	--	
Xylenes, Total	ND	ug/kg	2.0	--	
cis-1,2-Dichloroethene	ND	ug/kg	1.0	--	
1,2-Dichloroethene, Total	ND	ug/kg	1.0	--	
Dibromomethane	ND	ug/kg	4.0	--	
1,2,3-Trichloropropane	ND	ug/kg	4.0	--	
Styrene	ND	ug/kg	2.0	--	
Dichlorodifluoromethane	ND	ug/kg	10	--	
Acetone	ND	ug/kg	36	--	
Carbon disulfide	ND	ug/kg	4.0	--	
Methyl ethyl ketone	ND	ug/kg	10	--	
Methyl isobutyl ketone	ND	ug/kg	10	--	
2-Hexanone	ND	ug/kg	10	--	
Bromochloromethane	ND	ug/kg	4.0	--	
Tetrahydrofuran	ND	ug/kg	4.0	--	
2,2-Dichloropropane	ND	ug/kg	5.0	--	
1,2-Dibromoethane	ND	ug/kg	4.0	--	
1,3-Dichloropropane	ND	ug/kg	4.0	--	
1,1,1,2-Tetrachloroethane	ND	ug/kg	1.0	--	
Bromobenzene	ND	ug/kg	5.0	--	
n-Butylbenzene	ND	ug/kg	1.0	--	
sec-Butylbenzene	ND	ug/kg	1.0	--	
tert-Butylbenzene	ND	ug/kg	4.0	--	
o-Chlorotoluene	ND	ug/kg	4.0	--	



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703745  
**Report Date:** 02/13/17

### Method Blank Analysis Batch Quality Control

Analytical Method: 97,8260C  
Analytical Date: 02/09/17 09:53  
Analyst: TE

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics by 8260/5035 - Westborough Lab for sample(s):	01-02	Batch:	WG976794-5		
p-Chlorotoluene	ND		ug/kg	4.0	--
1,2-Dibromo-3-chloropropane	ND		ug/kg	4.0	--
Hexachlorobutadiene	ND		ug/kg	4.0	--
Isopropylbenzene	ND		ug/kg	1.0	--
p-Isopropyltoluene	ND		ug/kg	1.0	--
Naphthalene	ND		ug/kg	4.0	--
n-Propylbenzene	ND		ug/kg	1.0	--
1,2,3-Trichlorobenzene	ND		ug/kg	4.0	--
1,2,4-Trichlorobenzene	ND		ug/kg	4.0	--
1,3,5-Trimethylbenzene	ND		ug/kg	4.0	--
1,2,4-Trimethylbenzene	ND		ug/kg	4.0	--
Diethyl ether	ND		ug/kg	5.0	--
Diisopropyl Ether	ND		ug/kg	4.0	--
Ethyl-Tert-Butyl-Ether	ND		ug/kg	4.0	--
Tertiary-Amyl Methyl Ether	ND		ug/kg	4.0	--
1,4-Dioxane	ND		ug/kg	40	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	97		70-130
Toluene-d8	93		70-130
4-Bromofluorobenzene	98		70-130
Dibromofluoromethane	92		70-130

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703745  
**Report Date:** 02/13/17

### Method Blank Analysis Batch Quality Control

Analytical Method: 97,8260C  
Analytical Date: 02/10/17 10:12  
Analyst: MV

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics by 8260/5035 - Westborough Lab for sample(s):	04-05		Batch:	WG976906-5	
Methylene chloride	ND		ug/kg	10	--
1,1-Dichloroethane	ND		ug/kg	1.5	--
Chloroform	ND		ug/kg	1.5	--
Carbon tetrachloride	ND		ug/kg	1.0	--
1,2-Dichloropropane	ND		ug/kg	3.5	--
Dibromochloromethane	ND		ug/kg	1.0	--
1,1,2-Trichloroethane	ND		ug/kg	1.5	--
Tetrachloroethene	ND		ug/kg	1.0	--
Chlorobenzene	ND		ug/kg	1.0	--
Trichlorofluoromethane	ND		ug/kg	4.0	--
1,2-Dichloroethane	ND		ug/kg	1.0	--
1,1,1-Trichloroethane	ND		ug/kg	1.0	--
Bromodichloromethane	ND		ug/kg	1.0	--
trans-1,3-Dichloropropene	ND		ug/kg	1.0	--
cis-1,3-Dichloropropene	ND		ug/kg	1.0	--
1,3-Dichloropropene, Total	ND		ug/kg	1.0	--
1,1-Dichloropropene	ND		ug/kg	4.0	--
Bromoform	ND		ug/kg	4.0	--
1,1,2,2-Tetrachloroethane	ND		ug/kg	1.0	--
Benzene	ND		ug/kg	1.0	--
Toluene	ND		ug/kg	1.5	--
Ethylbenzene	ND		ug/kg	1.0	--
Chloromethane	ND		ug/kg	4.0	--
Bromomethane	ND		ug/kg	2.0	--
Vinyl chloride	ND		ug/kg	2.0	--
Chloroethane	ND		ug/kg	2.0	--
1,1-Dichloroethene	ND		ug/kg	1.0	--
trans-1,2-Dichloroethene	ND		ug/kg	1.5	--
Trichloroethene	ND		ug/kg	1.0	--



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703745  
**Report Date:** 02/13/17

**Method Blank Analysis**  
**Batch Quality Control**

Analytical Method: 97,8260C  
Analytical Date: 02/10/17 10:12  
Analyst: MV

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics by 8260/5035 - Westborough Lab for sample(s):	04-05		Batch:	WG976906-5	
1,2-Dichlorobenzene	ND		ug/kg	4.0	--
1,3-Dichlorobenzene	ND		ug/kg	4.0	--
1,4-Dichlorobenzene	ND		ug/kg	4.0	--
Methyl tert butyl ether	ND		ug/kg	2.0	--
p/m-Xylene	ND		ug/kg	2.0	--
o-Xylene	ND		ug/kg	2.0	--
Xylenes, Total	ND		ug/kg	2.0	--
cis-1,2-Dichloroethene	ND		ug/kg	1.0	--
1,2-Dichloroethene, Total	ND		ug/kg	1.0	--
Dibromomethane	ND		ug/kg	4.0	--
1,4-Dichlorobutane	ND		ug/kg	10	--
1,2,3-Trichloropropane	ND		ug/kg	4.0	--
Styrene	ND		ug/kg	2.0	--
Dichlorodifluoromethane	ND		ug/kg	10	--
Acetone	ND		ug/kg	36	--
Carbon disulfide	ND		ug/kg	4.0	--
Methyl ethyl ketone	ND		ug/kg	10	--
Methyl isobutyl ketone	ND		ug/kg	10	--
2-Hexanone	ND		ug/kg	10	--
Ethyl methacrylate	ND		ug/kg	10	--
Acrylonitrile	ND		ug/kg	4.0	--
Bromochloromethane	ND		ug/kg	4.0	--
Tetrahydrofuran	ND		ug/kg	4.0	--
2,2-Dichloropropane	ND		ug/kg	5.0	--
1,2-Dibromoethane	ND		ug/kg	4.0	--
1,3-Dichloropropane	ND		ug/kg	4.0	--
1,1,1,2-Tetrachloroethane	ND		ug/kg	1.0	--
Bromobenzene	ND		ug/kg	5.0	--
n-Butylbenzene	ND		ug/kg	1.0	--



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703745  
**Report Date:** 02/13/17

**Method Blank Analysis**  
**Batch Quality Control**

Analytical Method: 97,8260C  
Analytical Date: 02/10/17 10:12  
Analyst: MV

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics by 8260/5035 - Westborough Lab for sample(s):	04-05	Batch:	WG976906-5		
sec-Butylbenzene	ND	ug/kg	1.0	--	
tert-Butylbenzene	ND	ug/kg	4.0	--	
o-Chlorotoluene	ND	ug/kg	4.0	--	
p-Chlorotoluene	ND	ug/kg	4.0	--	
1,2-Dibromo-3-chloropropane	ND	ug/kg	4.0	--	
Hexachlorobutadiene	ND	ug/kg	4.0	--	
Isopropylbenzene	ND	ug/kg	1.0	--	
p-Isopropyltoluene	ND	ug/kg	1.0	--	
Naphthalene	ND	ug/kg	4.0	--	
n-Propylbenzene	ND	ug/kg	1.0	--	
1,2,3-Trichlorobenzene	ND	ug/kg	4.0	--	
1,2,4-Trichlorobenzene	ND	ug/kg	4.0	--	
1,3,5-Trimethylbenzene	ND	ug/kg	4.0	--	
1,2,4-Trimethylbenzene	ND	ug/kg	4.0	--	
trans-1,4-Dichloro-2-butene	ND	ug/kg	5.0	--	
Diethyl ether	ND	ug/kg	5.0	--	
Diisopropyl Ether	ND	ug/kg	4.0	--	
Ethyl-Tert-Butyl-Ether	ND	ug/kg	4.0	--	
Tertiary-Amyl Methyl Ether	ND	ug/kg	4.0	--	
1,4-Dioxane	ND	ug/kg	40	--	
2-Chloroethylvinyl ether	ND	ug/kg	20	--	
Halothane	ND	ug/kg	40	--	
Ethyl Acetate	ND	ug/kg	20	--	
Freon-113	ND	ug/kg	20	--	
Vinyl acetate	ND	ug/kg	10	--	

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703745  
**Report Date:** 02/13/17

**Method Blank Analysis**  
**Batch Quality Control**

Analytical Method: 97,8260C  
Analytical Date: 02/10/17 10:12  
Analyst: MV

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics by 8260/5035 - Westborough Lab for sample(s): 04-05 Batch: WG976906-5					

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	101		70-130
Toluene-d8	102		70-130
4-Bromofluorobenzene	104		70-130
Dibromofluoromethane	94		70-130

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703745  
**Report Date:** 02/13/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics by 8260/5035 - Westborough Lab Associated sample(s): 01-02 Batch: WG976794-3 WG976794-4								
Methylene chloride	147	Q	115		70-130	24	Q	20
1,1-Dichloroethane	114		106		70-130	7		20
Chloroform	115		108		70-130	6		20
Carbon tetrachloride	100		92		70-130	8		20
1,2-Dichloropropane	114		109		70-130	4		20
Dibromochloromethane	92		92		70-130	0		20
1,1,2-Trichloroethane	105		105		70-130	0		20
Tetrachloroethene	105		95		70-130	10		20
Chlorobenzene	103		98		70-130	5		20
Trichlorofluoromethane	153	Q	138	Q	70-130	10		20
1,2-Dichloroethane	118		115		70-130	3		20
1,1,1-Trichloroethane	112		103		70-130	8		20
Bromodichloromethane	108		107		70-130	1		20
trans-1,3-Dichloropropene	92		92		70-130	0		20
cis-1,3-Dichloropropene	107		104		70-130	3		20
1,1-Dichloropropene	116		106		70-130	9		20
Bromoform	76		82		70-130	8		20
1,1,2,2-Tetrachloroethane	101		103		70-130	2		20
Benzene	116		109		70-130	6		20
Toluene	104		96		70-130	8		20
Ethylbenzene	105		97		70-130	8		20

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703745  
**Report Date:** 02/13/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics by 8260/5035 - Westborough Lab Associated sample(s): 01-02 Batch: WG976794-3 WG976794-4								
Chloromethane	97		88		70-130	10		20
Bromomethane	156	Q	142	Q	70-130	9		20
Vinyl chloride	130		115		70-130	12		20
Chloroethane	147	Q	132	Q	70-130	11		20
1,1-Dichloroethene	114		105		70-130	8		20
trans-1,2-Dichloroethene	118		108		70-130	9		20
Trichloroethene	116		107		70-130	8		20
1,2-Dichlorobenzene	99		94		70-130	5		20
1,3-Dichlorobenzene	98		93		70-130	5		20
1,4-Dichlorobenzene	100		93		70-130	7		20
Methyl tert butyl ether	114		114		70-130	0		20
p/m-Xylene	107		99		70-130	8		20
o-Xylene	104		98		70-130	6		20
cis-1,2-Dichloroethene	117		110		70-130	6		20
Dibromomethane	117		117		70-130	0		20
1,2,3-Trichloropropane	105		108		70-130	3		20
Styrene	105		100		70-130	5		20
Dichlorodifluoromethane	93		82		70-130	13		20
Acetone	105		101		70-130	4		20
Carbon disulfide	135	Q	113		70-130	18		20
Methyl ethyl ketone	108		110		70-130	2		20

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703745  
**Report Date:** 02/13/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics by 8260/5035 - Westborough Lab Associated sample(s): 01-02 Batch: WG976794-3 WG976794-4								
Methyl isobutyl ketone	104		111		70-130	7		20
2-Hexanone	94		99		70-130	5		20
Bromochloromethane	120		117		70-130	3		20
Tetrahydrofuran	116		119		70-130	3		20
2,2-Dichloropropane	101		94		70-130	7		20
1,2-Dibromoethane	103		106		70-130	3		20
1,3-Dichloropropane	104		103		70-130	1		20
1,1,1,2-Tetrachloroethane	90		88		70-130	2		20
Bromobenzene	97		93		70-130	4		20
n-Butylbenzene	104		95		70-130	9		20
sec-Butylbenzene	102		93		70-130	9		20
tert-Butylbenzene	100		92		70-130	8		20
o-Chlorotoluene	100		79		70-130	23	Q	20
p-Chlorotoluene	100		94		70-130	6		20
1,2-Dibromo-3-chloropropane	86		90		70-130	5		20
Hexachlorobutadiene	94		86		70-130	9		20
Isopropylbenzene	99		92		70-130	7		20
p-Isopropyltoluene	102		93		70-130	9		20
Naphthalene	99		100		70-130	1		20
n-Propylbenzene	102		94		70-130	8		20
1,2,3-Trichlorobenzene	96		93		70-130	3		20

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703745  
**Report Date:** 02/13/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics by 8260/5035 - Westborough Lab Associated sample(s): 01-02 Batch: WG976794-3 WG976794-4								
1,2,4-Trichlorobenzene	98		92		70-130	6		20
1,3,5-Trimethylbenzene	101		94		70-130	7		20
1,2,4-Trimethylbenzene	100		95		70-130	5		20
Diethyl ether	139	Q	121		70-130	14		20
Diisopropyl Ether	107		102		70-130	5		20
Ethyl-Tert-Butyl-Ether	108		106		70-130	2		20
Tertiary-Amyl Methyl Ether	108		105		70-130	3		20
1,4-Dioxane	132	Q	142	Q	70-130	7		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	100		101		70-130
Toluene-d8	94		93		70-130
4-Bromofluorobenzene	96		96		70-130
Dibromofluoromethane	101		101		70-130

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703745  
**Report Date:** 02/13/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics by 8260/5035 - Westborough Lab Associated sample(s): 04-05 Batch: WG976906-3 WG976906-4								
Methylene chloride	122		125		70-130	2		20
1,1-Dichloroethane	106		104		70-130	2		20
Chloroform	104		104		70-130	0		20
Carbon tetrachloride	104		101		70-130	3		20
1,2-Dichloropropane	103		105		70-130	2		20
Dibromochloromethane	97		100		70-130	3		20
1,1,2-Trichloroethane	102		104		70-130	2		20
Tetrachloroethene	103		98		70-130	5		20
Chlorobenzene	100		99		70-130	1		20
Trichlorofluoromethane	103		98		70-130	5		20
1,2-Dichloroethane	105		106		70-130	1		20
1,1,1-Trichloroethane	107		105		70-130	2		20
Bromodichloromethane	100		101		70-130	1		20
trans-1,3-Dichloropropene	101		102		70-130	1		20
cis-1,3-Dichloropropene	102		103		70-130	1		20
1,1-Dichloropropene	109		105		70-130	4		20
Bromoform	94		97		70-130	3		20
1,1,2,2-Tetrachloroethane	99		102		70-130	3		20
Benzene	104		103		70-130	1		20
Toluene	103		101		70-130	2		20
Ethylbenzene	105		102		70-130	3		20

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703745  
**Report Date:** 02/13/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics by 8260/5035 - Westborough Lab Associated sample(s): 04-05 Batch: WG976906-3 WG976906-4								
Chloromethane	105		104		70-130	1		20
Bromomethane	105		105		70-130	0		20
Vinyl chloride	106		100		70-130	6		20
Chloroethane	117		112		70-130	4		20
1,1-Dichloroethene	104		101		70-130	3		20
trans-1,2-Dichloroethene	104		103		70-130	1		20
Trichloroethene	106		103		70-130	3		20
1,2-Dichlorobenzene	98		99		70-130	1		20
1,3-Dichlorobenzene	100		100		70-130	0		20
1,4-Dichlorobenzene	101		100		70-130	1		20
Methyl tert butyl ether	101		103		70-130	2		20
p/m-Xylene	104		102		70-130	2		20
o-Xylene	102		101		70-130	1		20
cis-1,2-Dichloroethene	102		102		70-130	0		20
Dibromomethane	100		103		70-130	3		20
1,4-Dichlorobutane	102		105		70-130	3		20
1,2,3-Trichloropropane	102		105		70-130	3		20
Styrene	102		101		70-130	1		20
Dichlorodifluoromethane	89		86		70-130	3		20
Acetone	102		100		70-130	2		20
Carbon disulfide	108		98		70-130	10		20

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703745  
**Report Date:** 02/13/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics by 8260/5035 - Westborough Lab Associated sample(s): 04-05 Batch: WG976906-3 WG976906-4								
Methyl ethyl ketone	92		97		70-130	5		20
Methyl isobutyl ketone	92		95		70-130	3		20
2-Hexanone	95		100		70-130	5		20
Ethyl methacrylate	89		90		70-130	1		20
Acrylonitrile	103		107		70-130	4		20
Bromochloromethane	100		100		70-130	0		20
Tetrahydrofuran	106		110		70-130	4		20
2,2-Dichloropropane	109		107		70-130	2		20
1,2-Dibromoethane	98		101		70-130	3		20
1,3-Dichloropropane	103		104		70-130	1		20
1,1,1,2-Tetrachloroethane	100		99		70-130	1		20
Bromobenzene	97		98		70-130	1		20
n-Butylbenzene	109		106		70-130	3		20
sec-Butylbenzene	106		104		70-130	2		20
tert-Butylbenzene	104		101		70-130	3		20
o-Chlorotoluene	105		104		70-130	1		20
p-Chlorotoluene	106		105		70-130	1		20
1,2-Dibromo-3-chloropropane	85		87		70-130	2		20
Hexachlorobutadiene	95		93		70-130	2		20
Isopropylbenzene	105		102		70-130	3		20
p-Isopropyltoluene	106		104		70-130	2		20

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703745  
**Report Date:** 02/13/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics by 8260/5035 - Westborough Lab Associated sample(s): 04-05 Batch: WG976906-3 WG976906-4								
Naphthalene	96		100		70-130	4		20
n-Propylbenzene	107		104		70-130	3		20
1,2,3-Trichlorobenzene	95		96		70-130	1		20
1,2,4-Trichlorobenzene	97		98		70-130	1		20
1,3,5-Trimethylbenzene	105		103		70-130	2		20
1,2,4-Trimethylbenzene	104		103		70-130	1		20
trans-1,4-Dichloro-2-butene	104		108		70-130	4		20
Diethyl ether	101		103		70-130	2		20
Diisopropyl Ether	105		107		70-130	2		20
tert-Butyl Alcohol <sup>1</sup>	97		100		70-130	3		20
Ethyl-Tert-Butyl-Ether	102		105		70-130	3		20
Tertiary-Amyl Methyl Ether	100		103		70-130	3		20
1,4-Dioxane	81		85		70-130	5		20
2-Chloroethylvinyl ether	101		105		70-130	4		20
Halothane	102		99		70-130	3		20
Ethyl Acetate	101		108		70-130	7		20
Freon-113	98		94		70-130	4		20
Vinyl acetate	104		108		70-130	4		20

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703745  
**Report Date:** 02/13/17

<b>Parameter</b>	<i>LCS</i> <i>%Recovery</i>	<i>Qual</i>	<i>LCSD</i> <i>%Recovery</i>	<i>Qual</i>	<i>%Recovery</i> <i>Limits</i>	<i>RPD</i>	<i>Qual</i>	<i>RPD</i> <i>Limits</i>
MCP Volatile Organics by 8260/5035 - Westborough Lab Associated sample(s): 04-05 Batch: WG976906-3 WG976906-4								
<b>Surrogate</b>	<i>LCS</i> <i>%Recovery</i>	<i>Qual</i>	<i>LCSD</i> <i>%Recovery</i>	<i>Qual</i>	<i>Acceptance</i> <i>Criteria</i>			
1,2-Dichloroethane-d4	101		102		70-130			
Toluene-d8	101		100		70-130			
4-Bromofluorobenzene	103		104		70-130			
Dibromofluoromethane	99		101		70-130			

# **SEMIVOLATILES**



**Project Name:** EAST BOSTON  
**Project Number:** 43068

Serial\_No:02131717:50

**Lab Number:** L1703745  
**Report Date:** 02/13/17

### SAMPLE RESULTS

Lab ID: L1703745-01  
Client ID: VES-132 (2-3)  
Sample Location: MA  
Matrix: Soil  
Analytical Method: 97,8270D  
Analytical Date: 02/11/17 03:35  
Analyst: CB  
Percent Solids: 87%

Date Collected: 02/06/17 08:00  
Date Received: 02/06/17  
Field Prep: Not Specified  
Extraction Method: EPA 3546  
Extraction Date: 02/08/17 16:03

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Semivolatile Organics - Westborough Lab						
Acenaphthene	ND	ug/kg	150	--	--	1
1,2,4-Trichlorobenzene	ND	ug/kg	190	--	--	1
Hexachlorobenzene	ND	ug/kg	110	--	--	1
Bis(2-chloroethyl)ether	ND	ug/kg	170	--	--	1
2-Chloronaphthalene	ND	ug/kg	190	--	--	1
1,2-Dichlorobenzene	ND	ug/kg	190	--	--	1
1,3-Dichlorobenzene	ND	ug/kg	190	--	--	1
1,4-Dichlorobenzene	ND	ug/kg	190	--	--	1
3,3'-Dichlorobenzidine	ND	ug/kg	190	--	--	1
2,4-Dinitrotoluene	ND	ug/kg	190	--	--	1
2,6-Dinitrotoluene	ND	ug/kg	190	--	--	1
Azobenzene	ND	ug/kg	190	--	--	1
Fluoranthene	ND	ug/kg	110	--	--	1
4-Bromophenyl phenyl ether	ND	ug/kg	190	--	--	1
Bis(2-chloroisopropyl)ether	ND	ug/kg	230	--	--	1
Bis(2-chloroethoxy)methane	ND	ug/kg	200	--	--	1
Hexachlorobutadiene	ND	ug/kg	190	--	--	1
Hexachloroethane	ND	ug/kg	150	--	--	1
Isophorone	ND	ug/kg	170	--	--	1
Naphthalene	ND	ug/kg	190	--	--	1
Nitrobenzene	ND	ug/kg	170	--	--	1
Bis(2-ethylhexyl)phthalate	ND	ug/kg	190	--	--	1
Butyl benzyl phthalate	ND	ug/kg	190	--	--	1
Di-n-butylphthalate	ND	ug/kg	190	--	--	1
Di-n-octylphthalate	ND	ug/kg	190	--	--	1
Diethyl phthalate	ND	ug/kg	190	--	--	1
Dimethyl phthalate	ND	ug/kg	190	--	--	1
Benzo(a)anthracene	ND	ug/kg	110	--	--	1
Benzo(a)pyrene	ND	ug/kg	150	--	--	1
Benzo(b)fluoranthene	ND	ug/kg	110	--	--	1



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703745  
**Report Date:** 02/13/17

**SAMPLE RESULTS**

Lab ID:	L1703745-01	Date Collected:	02/06/17 08:00
Client ID:	VES-132 (2-3)	Date Received:	02/06/17
Sample Location:	MA	Field Prep:	Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Semivolatile Organics - Westborough Lab</b>						
Benzo(k)fluoranthene	ND	ug/kg	110	--	--	1
Chrysene	ND	ug/kg	110	--	--	1
Acenaphthylene	ND	ug/kg	150	--	--	1
Anthracene	ND	ug/kg	110	--	--	1
Benzo(ghi)perylene	ND	ug/kg	150	--	--	1
Fluorene	ND	ug/kg	190	--	--	1
Phenanthrene	ND	ug/kg	110	--	--	1
Dibenzo(a,h)anthracene	ND	ug/kg	110	--	--	1
Indeno(1,2,3-cd)pyrene	ND	ug/kg	150	--	--	1
Pyrene	ND	ug/kg	110	--	--	1
Aniline	ND	ug/kg	230	--	--	1
4-Chloroaniline	ND	ug/kg	190	--	--	1
Dibenzofuran	ND	ug/kg	190	--	--	1
2-Methylnaphthalene	ND	ug/kg	230	--	--	1
Acetophenone	ND	ug/kg	190	--	--	1
2,4,6-Trichlorophenol	ND	ug/kg	110	--	--	1
2-Chlorophenol	ND	ug/kg	190	--	--	1
2,4-Dichlorophenol	ND	ug/kg	170	--	--	1
2,4-Dimethylphenol	ND	ug/kg	190	--	--	1
2-Nitrophenol	ND	ug/kg	410	--	--	1
4-Nitrophenol	ND	ug/kg	270	--	--	1
2,4-Dinitrophenol	ND	ug/kg	910	--	--	1
Pentachlorophenol	ND	ug/kg	380	--	--	1
Phenol	ND	ug/kg	190	--	--	1
2-Methylphenol	ND	ug/kg	190	--	--	1
3-Methylphenol/4-Methylphenol	ND	ug/kg	270	--	--	1
2,4,5-Trichlorophenol	ND	ug/kg	190	--	--	1
Pyridine	ND	ug/kg	200	--	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	68		30-130
Phenol-d6	81		30-130
Nitrobenzene-d5	87		30-130
2-Fluorobiphenyl	82		30-130
2,4,6-Tribromophenol	54		30-130
4-Terphenyl-d14	81		30-130

**Project Name:** EAST BOSTON  
**Project Number:** 43068

Serial\_No:02131717:50

**Lab Number:** L1703745  
**Report Date:** 02/13/17

### SAMPLE RESULTS

Lab ID: L1703745-02  
Client ID: VES-135 (0-2)  
Sample Location: MA  
Matrix: Soil  
Analytical Method: 97,8270D  
Analytical Date: 02/11/17 04:00  
Analyst: CB  
Percent Solids: 85%

Date Collected: 02/06/17 09:30  
Date Received: 02/06/17  
Field Prep: Not Specified  
Extraction Method: EPA 3546  
Extraction Date: 02/08/17 16:03

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Semivolatile Organics - Westborough Lab						
Acenaphthene	ND	ug/kg	160	--	--	1
1,2,4-Trichlorobenzene	ND	ug/kg	190	--	--	1
Hexachlorobenzene	ND	ug/kg	120	--	--	1
Bis(2-chloroethyl)ether	ND	ug/kg	170	--	--	1
2-Chloronaphthalene	ND	ug/kg	190	--	--	1
1,2-Dichlorobenzene	ND	ug/kg	190	--	--	1
1,3-Dichlorobenzene	ND	ug/kg	190	--	--	1
1,4-Dichlorobenzene	ND	ug/kg	190	--	--	1
3,3'-Dichlorobenzidine	ND	ug/kg	190	--	--	1
2,4-Dinitrotoluene	ND	ug/kg	190	--	--	1
2,6-Dinitrotoluene	ND	ug/kg	190	--	--	1
Azobenzene	ND	ug/kg	190	--	--	1
Fluoranthene	890	ug/kg	120	--	--	1
4-Bromophenyl phenyl ether	ND	ug/kg	190	--	--	1
Bis(2-chloroisopropyl)ether	ND	ug/kg	230	--	--	1
Bis(2-chloroethoxy)methane	ND	ug/kg	210	--	--	1
Hexachlorobutadiene	ND	ug/kg	190	--	--	1
Hexachloroethane	ND	ug/kg	160	--	--	1
Isophorone	ND	ug/kg	170	--	--	1
Naphthalene	ND	ug/kg	190	--	--	1
Nitrobenzene	ND	ug/kg	170	--	--	1
Bis(2-ethylhexyl)phthalate	ND	ug/kg	190	--	--	1
Butyl benzyl phthalate	260	ug/kg	190	--	--	1
Di-n-butylphthalate	ND	ug/kg	190	--	--	1
Di-n-octylphthalate	ND	ug/kg	190	--	--	1
Diethyl phthalate	ND	ug/kg	190	--	--	1
Dimethyl phthalate	ND	ug/kg	190	--	--	1
Benzo(a)anthracene	490	ug/kg	120	--	--	1
Benzo(a)pyrene	510	ug/kg	160	--	--	1
Benzo(b)fluoranthene	660	ug/kg	120	--	--	1



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703745  
**Report Date:** 02/13/17

**SAMPLE RESULTS**

Lab ID:	L1703745-02	Date Collected:	02/06/17 09:30			
Client ID:	VES-135 (0-2)	Date Received:	02/06/17			
Sample Location:	MA	Field Prep:	Not Specified			
Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Semivolatile Organics - Westborough Lab</b>						
Benzo(k)fluoranthene	230	ug/kg	120	--	--	1
Chrysene	500	ug/kg	120	--	--	1
Acenaphthylene	ND	ug/kg	160	--	--	1
Anthracene	120	ug/kg	120	--	--	1
Benzo(ghi)perylene	340	ug/kg	160	--	--	1
Fluorene	ND	ug/kg	190	--	--	1
Phenanthrene	470	ug/kg	120	--	--	1
Dibenzo(a,h)anthracene	ND	ug/kg	120	--	--	1
Indeno(1,2,3-cd)pyrene	350	ug/kg	160	--	--	1
Pyrene	790	ug/kg	120	--	--	1
Aniline	ND	ug/kg	230	--	--	1
4-Chloroaniline	ND	ug/kg	190	--	--	1
Dibenzofuran	ND	ug/kg	190	--	--	1
2-Methylnaphthalene	ND	ug/kg	230	--	--	1
Acetophenone	ND	ug/kg	190	--	--	1
2,4,6-Trichlorophenol	ND	ug/kg	120	--	--	1
2-Chlorophenol	ND	ug/kg	190	--	--	1
2,4-Dichlorophenol	ND	ug/kg	170	--	--	1
2,4-Dimethylphenol	ND	ug/kg	190	--	--	1
2-Nitrophenol	ND	ug/kg	420	--	--	1
4-Nitrophenol	ND	ug/kg	270	--	--	1
2,4-Dinitrophenol	ND	ug/kg	930	--	--	1
Pentachlorophenol	ND	ug/kg	390	--	--	1
Phenol	ND	ug/kg	190	--	--	1
2-Methylphenol	ND	ug/kg	190	--	--	1
3-Methylphenol/4-Methylphenol	ND	ug/kg	280	--	--	1
2,4,5-Trichlorophenol	ND	ug/kg	190	--	--	1
Pyridine	ND	ug/kg	210	--	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	53		30-130
Phenol-d6	62		30-130
Nitrobenzene-d5	66		30-130
2-Fluorobiphenyl	62		30-130
2,4,6-Tribromophenol	63		30-130
4-Terphenyl-d14	61		30-130



**Project Name:** EAST BOSTON  
**Project Number:** 43068

Serial\_No:02131717:50

**Lab Number:** L1703745  
**Report Date:** 02/13/17

### SAMPLE RESULTS

Lab ID:	L1703745-04	Date Collected:	02/06/17 13:00
Client ID:	VES-133 (5-7)	Date Received:	02/06/17
Sample Location:	MA	Field Prep:	Not Specified
Matrix:	Soil	Extraction Method:	EPA 3546
Analytical Method:	97,8270D	Extraction Date:	02/08/17 16:03
Analytical Date:	02/11/17 04:26		
Analyst:	CB		
Percent Solids:	46%		

MCP Semivolatile Organics - Westborough Lab						
Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Acenaphthene	460	ug/kg	290	--	--	1
1,2,4-Trichlorobenzene	ND	ug/kg	360	--	--	1
Hexachlorobenzene	ND	ug/kg	220	--	--	1
Bis(2-chloroethyl)ether	ND	ug/kg	320	--	--	1
2-Chloronaphthalene	ND	ug/kg	360	--	--	1
1,2-Dichlorobenzene	ND	ug/kg	360	--	--	1
1,3-Dichlorobenzene	ND	ug/kg	360	--	--	1
1,4-Dichlorobenzene	ND	ug/kg	360	--	--	1
3,3'-Dichlorobenzidine	ND	ug/kg	360	--	--	1
2,4-Dinitrotoluene	ND	ug/kg	360	--	--	1
2,6-Dinitrotoluene	ND	ug/kg	360	--	--	1
Azobenzene	ND	ug/kg	360	--	--	1
Fluoranthene	6300	ug/kg	220	--	--	1
4-Bromophenyl phenyl ether	ND	ug/kg	360	--	--	1
Bis(2-chloroisopropyl)ether	ND	ug/kg	430	--	--	1
Bis(2-chloroethoxy)methane	ND	ug/kg	390	--	--	1
Hexachlorobutadiene	ND	ug/kg	360	--	--	1
Hexachloroethane	ND	ug/kg	290	--	--	1
Isophorone	ND	ug/kg	320	--	--	1
Naphthalene	ND	ug/kg	360	--	--	1
Nitrobenzene	ND	ug/kg	320	--	--	1
Bis(2-ethylhexyl)phthalate	ND	ug/kg	360	--	--	1
Butyl benzyl phthalate	ND	ug/kg	360	--	--	1
Di-n-butylphthalate	ND	ug/kg	360	--	--	1
Di-n-octylphthalate	ND	ug/kg	360	--	--	1
Diethyl phthalate	ND	ug/kg	360	--	--	1
Dimethyl phthalate	ND	ug/kg	360	--	--	1
Benzo(a)anthracene	2900	ug/kg	220	--	--	1
Benzo(a)pyrene	2200	ug/kg	290	--	--	1
Benzo(b)fluoranthene	2700	ug/kg	220	--	--	1



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703745  
**Report Date:** 02/13/17

**SAMPLE RESULTS**

Lab ID:	L1703745-04	Date Collected:	02/06/17 13:00
Client ID:	VES-133 (5-7)	Date Received:	02/06/17
Sample Location:	MA	Field Prep:	Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Semivolatile Organics - Westborough Lab</b>						
Benzo(k)fluoranthene	1100	ug/kg	220	--	1	
Chrysene	2800	ug/kg	220	--	1	
Acenaphthylene	ND	ug/kg	290	--	1	
Anthracene	1600	ug/kg	220	--	1	
Benzo(ghi)perylene	1100	ug/kg	290	--	1	
Fluorene	540	ug/kg	360	--	1	
Phenanthrene	5800	ug/kg	220	--	1	
Dibenzo(a,h)anthracene	340	ug/kg	220	--	1	
Indeno(1,2,3-cd)pyrene	1300	ug/kg	290	--	1	
Pyrene	5200	ug/kg	220	--	1	
Aniline	ND	ug/kg	430	--	1	
4-Chloroaniline	ND	ug/kg	360	--	1	
Dibenzofuran	370	ug/kg	360	--	1	
2-Methylnaphthalene	ND	ug/kg	430	--	1	
Acetophenone	ND	ug/kg	360	--	1	
2,4,6-Trichlorophenol	ND	ug/kg	220	--	1	
2-Chlorophenol	ND	ug/kg	360	--	1	
2,4-Dichlorophenol	ND	ug/kg	320	--	1	
2,4-Dimethylphenol	ND	ug/kg	360	--	1	
2-Nitrophenol	ND	ug/kg	780	--	1	
4-Nitrophenol	ND	ug/kg	500	--	1	
2,4-Dinitrophenol	ND	ug/kg	1700	--	1	
Pentachlorophenol	ND	ug/kg	720	--	1	
Phenol	ND	ug/kg	360	--	1	
2-Methylphenol	ND	ug/kg	360	--	1	
3-Methylphenol/4-Methylphenol	ND	ug/kg	520	--	1	
2,4,5-Trichlorophenol	ND	ug/kg	360	--	1	
Pyridine	ND	ug/kg	390	--	1	

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	63		30-130
Phenol-d6	67		30-130
Nitrobenzene-d5	72		30-130
2-Fluorobiphenyl	69		30-130
2,4,6-Tribromophenol	71		30-130
4-Terphenyl-d14	77		30-130

**Project Name:** EAST BOSTON  
**Project Number:** 43068

Serial\_No:02131717:50

**Lab Number:** L1703745  
**Report Date:** 02/13/17

### SAMPLE RESULTS

Lab ID: L1703745-05  
Client ID: VES-129 (0-2)  
Sample Location: MA  
Matrix: Soil  
Analytical Method: 97,8270D  
Analytical Date: 02/11/17 04:52  
Analyst: CB  
Percent Solids: 89%

Date Collected: 02/06/17 13:15  
Date Received: 02/06/17  
Field Prep: Not Specified  
Extraction Method: EPA 3546  
Extraction Date: 02/08/17 16:03

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Semivolatile Organics - Westborough Lab						
Acenaphthene	ND	ug/kg	150	--	--	1
1,2,4-Trichlorobenzene	ND	ug/kg	190	--	--	1
Hexachlorobenzene	ND	ug/kg	110	--	--	1
Bis(2-chloroethyl)ether	ND	ug/kg	170	--	--	1
2-Chloronaphthalene	ND	ug/kg	190	--	--	1
1,2-Dichlorobenzene	ND	ug/kg	190	--	--	1
1,3-Dichlorobenzene	ND	ug/kg	190	--	--	1
1,4-Dichlorobenzene	ND	ug/kg	190	--	--	1
3,3'-Dichlorobenzidine	ND	ug/kg	190	--	--	1
2,4-Dinitrotoluene	ND	ug/kg	190	--	--	1
2,6-Dinitrotoluene	ND	ug/kg	190	--	--	1
Azobenzene	ND	ug/kg	190	--	--	1
Fluoranthene	5200	ug/kg	110	--	--	1
4-Bromophenyl phenyl ether	ND	ug/kg	190	--	--	1
Bis(2-chloroisopropyl)ether	ND	ug/kg	220	--	--	1
Bis(2-chloroethoxy)methane	ND	ug/kg	200	--	--	1
Hexachlorobutadiene	ND	ug/kg	190	--	--	1
Hexachloroethane	ND	ug/kg	150	--	--	1
Isophorone	ND	ug/kg	170	--	--	1
Naphthalene	480	ug/kg	190	--	--	1
Nitrobenzene	ND	ug/kg	170	--	--	1
Bis(2-ethylhexyl)phthalate	ND	ug/kg	190	--	--	1
Butyl benzyl phthalate	ND	ug/kg	190	--	--	1
Di-n-butylphthalate	ND	ug/kg	190	--	--	1
Di-n-octylphthalate	ND	ug/kg	190	--	--	1
Diethyl phthalate	ND	ug/kg	190	--	--	1
Dimethyl phthalate	ND	ug/kg	190	--	--	1
Benzo(a)anthracene	4500	ug/kg	110	--	--	1
Benzo(a)pyrene	5300	ug/kg	150	--	--	1
Benzo(b)fluoranthene	6100	ug/kg	110	--	--	1



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703745  
**Report Date:** 02/13/17

**SAMPLE RESULTS**

Lab ID:	L1703745-05	Date Collected:	02/06/17 13:15			
Client ID:	VES-129 (0-2)	Date Received:	02/06/17			
Sample Location:	MA	Field Prep:	Not Specified			
Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Semivolatile Organics - Westborough Lab</b>						
Benzo(k)fluoranthene	2200	ug/kg	110	--	1	
Chrysene	4300	ug/kg	110	--	1	
Acenaphthylene	ND	ug/kg	150	--	1	
Anthracene	580	ug/kg	110	--	1	
Benzo(ghi)perylene	2900	ug/kg	150	--	1	
Fluorene	ND	ug/kg	190	--	1	
Phenanthrene	2100	ug/kg	110	--	1	
Dibenzo(a,h)anthracene	890	ug/kg	110	--	1	
Indeno(1,2,3-cd)pyrene	3300	ug/kg	150	--	1	
Pyrene	4800	ug/kg	110	--	1	
Aniline	ND	ug/kg	220	--	1	
4-Chloroaniline	ND	ug/kg	190	--	1	
Dibenzofuran	210	ug/kg	190	--	1	
2-Methylnaphthalene	ND	ug/kg	220	--	1	
Acetophenone	ND	ug/kg	190	--	1	
2,4,6-Trichlorophenol	ND	ug/kg	110	--	1	
2-Chlorophenol	ND	ug/kg	190	--	1	
2,4-Dichlorophenol	ND	ug/kg	170	--	1	
2,4-Dimethylphenol	ND	ug/kg	190	--	1	
2-Nitrophenol	ND	ug/kg	400	--	1	
4-Nitrophenol	ND	ug/kg	260	--	1	
2,4-Dinitrophenol	ND	ug/kg	890	--	1	
Pentachlorophenol	ND	ug/kg	370	--	1	
Phenol	ND	ug/kg	190	--	1	
2-Methylphenol	ND	ug/kg	190	--	1	
3-Methylphenol/4-Methylphenol	ND	ug/kg	270	--	1	
2,4,5-Trichlorophenol	ND	ug/kg	190	--	1	
Pyridine	ND	ug/kg	200	--	1	

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	70		30-130
Phenol-d6	71		30-130
Nitrobenzene-d5	90		30-130
2-Fluorobiphenyl	78		30-130
2,4,6-Tribromophenol	77		30-130
4-Terphenyl-d14	76		30-130

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703745  
**Report Date:** 02/13/17

### Method Blank Analysis Batch Quality Control

Analytical Method: 97,8270D  
Analytical Date: 02/11/17 02:17  
Analyst: CB

Extraction Method: EPA 3546  
Extraction Date: 02/08/17 16:03

Parameter	Result	Qualifier	Units	RL	MDL
MCP Semivolatile Organics - Westborough Lab for sample(s): 01-02,04-05 Batch: WG976440-1					
Acenaphthene	ND		ug/kg	130	--
1,2,4-Trichlorobenzene	ND		ug/kg	160	--
Hexachlorobenzene	ND		ug/kg	98	--
Bis(2-chloroethyl)ether	ND		ug/kg	150	--
2-Chloronaphthalene	ND		ug/kg	160	--
1,2-Dichlorobenzene	ND		ug/kg	160	--
1,3-Dichlorobenzene	ND		ug/kg	160	--
1,4-Dichlorobenzene	ND		ug/kg	160	--
3,3'-Dichlorobenzidine	ND		ug/kg	160	--
2,4-Dinitrotoluene	ND		ug/kg	160	--
2,6-Dinitrotoluene	ND		ug/kg	160	--
Azobenzene	ND		ug/kg	160	--
Fluoranthene	ND		ug/kg	98	--
4-Bromophenyl phenyl ether	ND		ug/kg	160	--
Bis(2-chloroisopropyl)ether	ND		ug/kg	200	--
Bis(2-chloroethoxy)methane	ND		ug/kg	180	--
Hexachlorobutadiene	ND		ug/kg	160	--
Hexachloroethane	ND		ug/kg	130	--
Isophorone	ND		ug/kg	150	--
Naphthalene	ND		ug/kg	160	--
Nitrobenzene	ND		ug/kg	150	--
Bis(2-ethylhexyl)phthalate	ND		ug/kg	160	--
Butyl benzyl phthalate	ND		ug/kg	160	--
Di-n-butylphthalate	ND		ug/kg	160	--
Di-n-octylphthalate	ND		ug/kg	160	--
Diethyl phthalate	ND		ug/kg	160	--
Dimethyl phthalate	ND		ug/kg	160	--
Benzo(a)anthracene	ND		ug/kg	98	--
Benzo(a)pyrene	ND		ug/kg	130	--



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703745  
**Report Date:** 02/13/17

### Method Blank Analysis Batch Quality Control

Analytical Method: 97,8270D  
Analytical Date: 02/11/17 02:17  
Analyst: CB

Extraction Method: EPA 3546  
Extraction Date: 02/08/17 16:03

Parameter	Result	Qualifier	Units	RL	MDL
MCP Semivolatile Organics - Westborough Lab for sample(s): 01-02,04-05 Batch: WG976440-1					
Benzo(b)fluoranthene	ND		ug/kg	98	--
Benzo(k)fluoranthene	ND		ug/kg	98	--
Chrysene	ND		ug/kg	98	--
Acenaphthylene	ND		ug/kg	130	--
Anthracene	ND		ug/kg	98	--
Benzo(ghi)perylene	ND		ug/kg	130	--
Fluorene	ND		ug/kg	160	--
Phenanthrene	ND		ug/kg	98	--
Dibenzo(a,h)anthracene	ND		ug/kg	98	--
Indeno(1,2,3-cd)pyrene	ND		ug/kg	130	--
Pyrene	ND		ug/kg	98	--
Aniline	ND		ug/kg	200	--
4-Chloroaniline	ND		ug/kg	160	--
Dibenzofuran	ND		ug/kg	160	--
2-Methylnaphthalene	ND		ug/kg	200	--
Acetophenone	ND		ug/kg	160	--
2,4,6-Trichlorophenol	ND		ug/kg	98	--
2-Chlorophenol	ND		ug/kg	160	--
2,4-Dichlorophenol	ND		ug/kg	150	--
2,4-Dimethylphenol	ND		ug/kg	160	--
2-Nitrophenol	ND		ug/kg	350	--
4-Nitrophenol	ND		ug/kg	230	--
2,4-Dinitrophenol	ND		ug/kg	780	--
Pentachlorophenol	ND		ug/kg	330	--
Phenol	ND		ug/kg	160	--
2-Methylphenol	ND		ug/kg	160	--
3-Methylphenol/4-Methylphenol	ND		ug/kg	240	--
2,4,5-Trichlorophenol	ND		ug/kg	160	--
Pyridine	ND		ug/kg	180	--



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703745  
**Report Date:** 02/13/17

### Method Blank Analysis Batch Quality Control

Analytical Method: 97,8270D  
Analytical Date: 02/11/17 02:17  
Analyst: CB

Extraction Method: EPA 3546  
Extraction Date: 02/08/17 16:03

Parameter	Result	Qualifier	Units	RL	MDL
MCP Semivolatile Organics - Westborough Lab for sample(s): 01-02,04-05 Batch: WG976440-1					

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	78		30-130
Phenol-d6	80		30-130
Nitrobenzene-d5	77		30-130
2-Fluorobiphenyl	75		30-130
2,4,6-Tribromophenol	62		30-130
4-Terphenyl-d14	82		30-130

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703745  
**Report Date:** 02/13/17

<b>Parameter</b>	<i>LCS</i> <b>%Recovery</b>	<i>LCS</i> <b>%Recovery</b>	<i>%Recovery</i> <b>Limits</b>	<i>RPD</i> <b>Qual</b>	<i>RPD</i> <b>Limits</b>
	<b>Qual</b>	<b>Qual</b>	<b>Limits</b>	<b>Qual</b>	
MCP Semivolatile Organics - Westborough Lab Associated sample(s): 01-02,04-05 Batch: WG976440-2 WG976440-3					
Acenaphthene	72	76	40-140	5	30
1,2,4-Trichlorobenzene	71	74	40-140	4	30
Hexachlorobenzene	75	76	40-140	1	30
Bis(2-chloroethyl)ether	74	78	40-140	5	30
2-Chloronaphthalene	72	76	40-140	5	30
1,2-Dichlorobenzene	72	74	40-140	3	30
1,3-Dichlorobenzene	70	73	40-140	4	30
1,4-Dichlorobenzene	70	72	40-140	3	30
3,3'-Dichlorobenzidine	38	Q	40-140	5	30
2,4-Dinitrotoluene	78	82	40-140	5	30
2,6-Dinitrotoluene	83	90	40-140	8	30
Azobenzene	78	81	40-140	4	30
Fluoranthene	76	81	40-140	6	30
4-Bromophenyl phenyl ether	74	77	40-140	4	30
Bis(2-chloroisopropyl)ether	76	80	40-140	5	30
Bis(2-chloroethoxy)methane	74	78	40-140	5	30
Hexachlorobutadiene	72	75	40-140	4	30
Hexachloroethane	71	73	40-140	3	30
Isophorone	73	77	40-140	5	30
Naphthalene	72	75	40-140	4	30
Nitrobenzene	78	84	40-140	7	30

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703745  
**Report Date:** 02/13/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Semivolatile Organics - Westborough Lab Associated sample(s): 01-02,04-05 Batch: WG976440-2 WG976440-3								
Bis(2-ethylhexyl)phthalate	78		83		40-140	6		30
Butyl benzyl phthalate	77		80		40-140	4		30
Di-n-butylphthalate	78		82		40-140	5		30
Di-n-octylphthalate	75		81		40-140	8		30
Diethyl phthalate	74		78		40-140	5		30
Dimethyl phthalate	73		78		40-140	7		30
Benzo(a)anthracene	73		78		40-140	7		30
Benzo(a)pyrene	71		76		40-140	7		30
Benzo(b)fluoranthene	72		77		40-140	7		30
Benzo(k)fluoranthene	72		77		40-140	7		30
Chrysene	72		76		40-140	5		30
Acenaphthylene	76		81		40-140	6		30
Anthracene	75		80		40-140	6		30
Benzo(ghi)perylene	72		78		40-140	8		30
Fluorene	74		77		40-140	4		30
Phenanthrene	73		77		40-140	5		30
Dibenz(a,h)anthracene	72		77		40-140	7		30
Indeno(1,2,3-cd)pyrene	71		76		40-140	7		30
Pyrene	75		79		40-140	5		30
Aniline	38	Q	37	Q	40-140	3		30
4-Chloroaniline	68		72		40-140	6		30

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703745  
**Report Date:** 02/13/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Semivolatile Organics - Westborough Lab Associated sample(s): 01-02,04-05 Batch: WG976440-2 WG976440-3								
1-Methylnaphthalene <sup>1</sup>	74		78		40-140	5		30
Dibenzofuran	73		76		40-140	4		30
2-Methylnaphthalene	72		76		40-140	5		30
Acetophenone	76		80		40-140	5		30
n-Nitrosodimethylamine	76		79		22-100	4		30
2,4,6-Trichlorophenol	76		82		30-130	8		30
2-Chlorophenol	75		80		30-130	6		30
2,4-Dichlorophenol	75		80		30-130	6		30
2,4-Dimethylphenol	84		89		30-130	6		30
2-Nitrophenol	73		80		30-130	9		30
4-Nitrophenol	84		88		30-130	5		30
2,4-Dinitrophenol	62		55		30-130	12		30
Pentachlorophenol	57		58		30-130	2		30
Phenol	75		79		30-130	5		30
2-Methylphenol	78		83		30-130	6		30
3-Methylphenol/4-Methylphenol	78		84		30-130	7		30
2,4,5-Trichlorophenol	74		81		30-130	9		30
Pyridine	63		68		30-130	8		30
4-Chlorophenyl phenyl ether	74		77		40-140	4		30
Hexachlorocyclopentadiene	68		70		40-140	3		30
NitrosoDiPhenylAmine(NDPA)/DPA	75		79		40-140	5		30

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703745  
**Report Date:** 02/13/17

<b>Parameter</b>	<i>LCS</i> <i>%Recovery</i>	<i>Qual</i>	<i>LCSD</i> <i>%Recovery</i>	<i>Qual</i>	<i>%Recovery</i> <i>Limits</i>	<i>RPD</i>	<i>Qual</i>	<i>RPD</i> <i>Limits</i>
MCP Semivolatile Organics - Westborough Lab Associated sample(s): 01-02,04-05 Batch: WG976440-2 WG976440-3								
n-Nitrosodi-n-propylamine	75		79		40-140	5		30
2-Nitroaniline	78		86		40-140	10		30
3-Nitroaniline	75		80		40-140	6		30
4-Nitroaniline	75		80		40-140	6		30
P-Chloro-M-Cresol	78		84		30-130	7		30
4,6-Dinitro-o-cresol	74		78		30-130	5		30
Carbazole	75		80		40-140	6		30

<b>Surrogate</b>	<i>LCS</i> <i>%Recovery</i>	<i>Qual</i>	<i>LCSD</i> <i>%Recovery</i>	<i>Qual</i>	<b>Acceptance Criteria</b>
					30-130
2-Fluorophenol	76		79		30-130
Phenol-d6	76		80		30-130
Nitrobenzene-d5	74		78		30-130
2-Fluorobiphenyl	70		74		30-130
2,4,6-Tribromophenol	74		77		30-130
4-Terphenyl-d14	75		78		30-130

# PETROLEUM HYDROCARBONS



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703745  
**Report Date:** 02/13/17

### SAMPLE RESULTS

Lab ID:	L1703745-01	Date Collected:	02/06/17 08:00
Client ID:	VES-132 (2-3)	Date Received:	02/06/17
Sample Location:	MA	Field Prep:	Not Specified
Matrix:	Soil		
Analytical Method:	100,VPH-04-1.1		
Analytical Date:	02/10/17 16:32		
Analyst:	KD		
Percent Solids:	87%		

### Quality Control Information

Condition of sample received:	Satisfactory
Sample Temperature upon receipt:	Received on Ice
Were samples received in methanol?	Yes (Covering the Soil)
Methanol ratio:	2.5:1

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>Volatile Petroleum Hydrocarbons - Westborough Lab</b>						
C5-C8 Aliphatics	ND		mg/kg	8.04	--	1
C9-C12 Aliphatics	ND		mg/kg	8.04	--	1
C9-C10 Aromatics	ND		mg/kg	8.04	--	1
C5-C8 Aliphatics, Adjusted	ND		mg/kg	8.04	--	1
C9-C12 Aliphatics, Adjusted	ND		mg/kg	8.04	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2,5-Dibromotoluene-PID	108		70-130
2,5-Dibromotoluene-FID	111		70-130

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703745  
**Report Date:** 02/13/17

### SAMPLE RESULTS

Lab ID:	L1703745-01	Date Collected:	02/06/17 08:00
Client ID:	VES-132 (2-3)	Date Received:	02/06/17
Sample Location:	MA	Field Prep:	Not Specified
Matrix:	Soil	Extraction Method:	EPA 3546
Analytical Method:	98,EPH-04-1.1	Extraction Date:	02/08/17 17:28
Analytical Date:	02/10/17 14:37	Cleanup Method1:	EPH-04-1
Analyst:	EK	Cleanup Date1:	02/10/17
Percent Solids:	87%		

### Quality Control Information

Condition of sample received:	Satisfactory
Sample Temperature upon receipt:	Received on Ice
Sample Extraction method:	Extracted Per the Method

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>Extractable Petroleum Hydrocarbons - Westborough Lab</b>						
C9-C18 Aliphatics	ND		mg/kg	7.49	--	1
C19-C36 Aliphatics	ND		mg/kg	7.49	--	1
C11-C22 Aromatics	ND		mg/kg	7.49	--	1
C11-C22 Aromatics, Adjusted	ND		mg/kg	7.49	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Chloro-Octadecane	49		40-140
o-Terphenyl	69		40-140
2-Fluorobiphenyl	79		40-140
2-Bromonaphthalene	81		40-140

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703745  
**Report Date:** 02/13/17

### SAMPLE RESULTS

Lab ID:	L1703745-02	Date Collected:	02/06/17 09:30
Client ID:	VES-135 (0-2)	Date Received:	02/06/17
Sample Location:	MA	Field Prep:	Not Specified
Matrix:	Soil		
Analytical Method:	100,VPH-04-1.1		
Analytical Date:	02/10/17 17:12		
Analyst:	KD		
Percent Solids:	85%		

### Quality Control Information

Condition of sample received:	Satisfactory
Sample Temperature upon receipt:	Received on Ice
Were samples received in methanol?	Yes (Covering the Soil)
Methanol ratio:	2.3:1

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>Volatile Petroleum Hydrocarbons - Westborough Lab</b>						
C5-C8 Aliphatics	ND		mg/kg	7.82	--	1
C9-C12 Aliphatics	ND		mg/kg	7.82	--	1
C9-C10 Aromatics	ND		mg/kg	7.82	--	1
C5-C8 Aliphatics, Adjusted	ND		mg/kg	7.82	--	1
C9-C12 Aliphatics, Adjusted	ND		mg/kg	7.82	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2,5-Dibromotoluene-PID	104		70-130
2,5-Dibromotoluene-FID	106		70-130

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703745  
**Report Date:** 02/13/17

### SAMPLE RESULTS

Lab ID:	L1703745-02	Date Collected:	02/06/17 09:30
Client ID:	VES-135 (0-2)	Date Received:	02/06/17
Sample Location:	MA	Field Prep:	Not Specified
Matrix:	Soil	Extraction Method:	EPA 3546
Analytical Method:	98,EPH-04-1.1	Extraction Date:	02/08/17 17:28
Analytical Date:	02/10/17 15:09	Cleanup Method1:	EPH-04-1
Analyst:	EK	Cleanup Date1:	02/10/17
Percent Solids:	85%		

### Quality Control Information

Condition of sample received:	Satisfactory
Sample Temperature upon receipt:	Received on Ice
Sample Extraction method:	Extracted Per the Method

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>Extractable Petroleum Hydrocarbons - Westborough Lab</b>						
C9-C18 Aliphatics	ND		mg/kg	7.82	--	1
C19-C36 Aliphatics	22.2		mg/kg	7.82	--	1
C11-C22 Aromatics	48.1		mg/kg	7.82	--	1
C11-C22 Aromatics, Adjusted	38.9		mg/kg	7.82	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Chloro-Octadecane	51		40-140
o-Terphenyl	79		40-140
2-Fluorobiphenyl	74		40-140
2-Bromonaphthalene	77		40-140

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703745  
**Report Date:** 02/13/17

### SAMPLE RESULTS

Lab ID:	L1703745-04	Date Collected:	02/06/17 13:00
Client ID:	VES-133 (5-7)	Date Received:	02/06/17
Sample Location:	MA	Field Prep:	Not Specified
Matrix:	Soil		
Analytical Method:	100,VPH-04-1.1		
Analytical Date:	02/10/17 17:52		
Analyst:	KD		
Percent Solids:	46%		

### Quality Control Information

Condition of sample received:	Satisfactory
Sample Temperature upon receipt:	Received on Ice
Were samples received in methanol?	Yes (Covering the Soil)
Methanol ratio:	4.3:1

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>Volatile Petroleum Hydrocarbons - Westborough Lab</b>						
C5-C8 Aliphatics	ND		mg/kg	28.0	--	1
C9-C12 Aliphatics	ND		mg/kg	28.0	--	1
C9-C10 Aromatics	ND		mg/kg	28.0	--	1
C5-C8 Aliphatics, Adjusted	ND		mg/kg	28.0	--	1
C9-C12 Aliphatics, Adjusted	ND		mg/kg	28.0	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2,5-Dibromotoluene-PID	105		70-130
2,5-Dibromotoluene-FID	108		70-130

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703745  
**Report Date:** 02/13/17

### SAMPLE RESULTS

Lab ID:	L1703745-04	Date Collected:	02/06/17 13:00
Client ID:	VES-133 (5-7)	Date Received:	02/06/17
Sample Location:	MA	Field Prep:	Not Specified
Matrix:	Soil	Extraction Method:	EPA 3546
Analytical Method:	98,EPH-04-1.1	Extraction Date:	02/08/17 17:28
Analytical Date:	02/12/17 11:43	Cleanup Method1:	EPH-04-1
Analyst:	SR	Cleanup Date1:	02/10/17
Percent Solids:	46%		

### Quality Control Information

Condition of sample received:	Satisfactory
Sample Temperature upon receipt:	Received on Ice
Sample Extraction method:	Extracted Per the Method

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>Extractable Petroleum Hydrocarbons - Westborough Lab</b>						
C9-C18 Aliphatics	ND		mg/kg	15.6	--	1
C19-C36 Aliphatics	127		mg/kg	15.6	--	1
C11-C22 Aromatics	475		mg/kg	15.6	--	1
C11-C22 Aromatics, Adjusted	332		mg/kg	15.6	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Chloro-Octadecane	64		40-140
o-Terphenyl	86		40-140
2-Fluorobiphenyl	84		40-140
2-Bromonaphthalene	87		40-140

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703745  
**Report Date:** 02/13/17

### SAMPLE RESULTS

Lab ID:	L1703745-05	Date Collected:	02/06/17 13:15
Client ID:	VES-129 (0-2)	Date Received:	02/06/17
Sample Location:	MA	Field Prep:	Not Specified
Matrix:	Soil		
Analytical Method:	100,VPH-04-1.1		
Analytical Date:	02/10/17 18:32		
Analyst:	KD		
Percent Solids:	89%		

### Quality Control Information

Condition of sample received:	Satisfactory
Sample Temperature upon receipt:	Received on Ice
Were samples received in methanol?	Yes (Covering the Soil)
Methanol ratio:	4.8:1

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>Volatile Petroleum Hydrocarbons - Westborough Lab</b>						
C5-C8 Aliphatics	ND		mg/kg	14.9	--	1
C9-C12 Aliphatics	ND		mg/kg	14.9	--	1
C9-C10 Aromatics	ND		mg/kg	14.9	--	1
C5-C8 Aliphatics, Adjusted	ND		mg/kg	14.9	--	1
C9-C12 Aliphatics, Adjusted	ND		mg/kg	14.9	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2,5-Dibromotoluene-PID	111		70-130
2,5-Dibromotoluene-FID	115		70-130

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703745  
**Report Date:** 02/13/17

### SAMPLE RESULTS

Lab ID:	L1703745-05	Date Collected:	02/06/17 13:15
Client ID:	VES-129 (0-2)	Date Received:	02/06/17
Sample Location:	MA	Field Prep:	Not Specified
Matrix:	Soil	Extraction Method:	EPA 3546
Analytical Method:	98,EPH-04-1.1	Extraction Date:	02/08/17 17:28
Analytical Date:	02/10/17 16:11	Cleanup Method1:	EPH-04-1
Analyst:	EK	Cleanup Date1:	02/10/17
Percent Solids:	89%		

### Quality Control Information

Condition of sample received:	Satisfactory
Sample Temperature upon receipt:	Received on Ice
Sample Extraction method:	Extracted Per the Method

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>Extractable Petroleum Hydrocarbons - Westborough Lab</b>						
C9-C18 Aliphatics	10.7		mg/kg	7.33	--	1
C19-C36 Aliphatics	30.8		mg/kg	7.33	--	1
C11-C22 Aromatics	106		mg/kg	7.33	--	1
C11-C22 Aromatics, Adjusted	78.1		mg/kg	7.33	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Chloro-Octadecane	60		40-140
o-Terphenyl	91		40-140
2-Fluorobiphenyl	87		40-140
2-Bromonaphthalene	89		40-140

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703745  
**Report Date:** 02/13/17

### Method Blank Analysis Batch Quality Control

Analytical Method: 98,EPH-04-1.1  
Analytical Date: 02/10/17 13:03  
Analyst: EK

Extraction Method: EPA 3546  
Extraction Date: 02/08/17 17:28  
Cleanup Method: EPH-04-1  
Cleanup Date: 02/10/17

Parameter	Result	Qualifier	Units	RL	MDL
Extractable Petroleum Hydrocarbons - Westborough Lab for sample(s): WG976461-1				01-02,04-05	Batch:
C9-C18 Aliphatics	ND		mg/kg	6.44	--
C19-C36 Aliphatics	ND		mg/kg	6.44	--
C11-C22 Aromatics	ND		mg/kg	6.44	--
C11-C22 Aromatics, Adjusted	ND		mg/kg	6.44	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Chloro-Octadecane	62		40-140
o-Terphenyl	74		40-140
2-Fluorobiphenyl	86		40-140
2-Bromonaphthalene	87		40-140

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703745  
**Report Date:** 02/13/17

**Method Blank Analysis**  
**Batch Quality Control**

Analytical Method: 100,VPH-04-1.1  
Analytical Date: 02/10/17 13:22  
Analyst: JM

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Petroleum Hydrocarbons - Westborough Lab for sample(s): 01-02,04-05				Batch:	WG977166-4
C5-C8 Aliphatics	ND		mg/kg	2.67	--
C9-C12 Aliphatics	ND		mg/kg	2.67	--
C9-C10 Aromatics	ND		mg/kg	2.67	--
C5-C8 Aliphatics, Adjusted	ND		mg/kg	2.67	--
C9-C12 Aliphatics, Adjusted	ND		mg/kg	2.67	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2,5-Dibromotoluene-PID	104		70-130
2,5-Dibromotoluene-FID	104		70-130

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703745  
**Report Date:** 02/13/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Extractable Petroleum Hydrocarbons - Westborough Lab Associated sample(s): 01-02,04-05 Batch: WG976461-2 WG976461-3								
C9-C18 Aliphatics	49		48		40-140	2		25
C19-C36 Aliphatics	59		56		40-140	5		25
C11-C22 Aromatics	67		71		40-140	6		25
Naphthalene	52		60		40-140	14		25
2-Methylnaphthalene	54		60		40-140	11		25
Acenaphthylene	54		60		40-140	11		25
Acenaphthene	57		62		40-140	8		25
Fluorene	61		65		40-140	6		25
Phenanthrene	64		68		40-140	6		25
Anthracene	68		71		40-140	4		25
Fluoranthene	67		71		40-140	6		25
Pyrene	68		72		40-140	6		25
Benzo(a)anthracene	66		70		40-140	6		25
Chrysene	68		72		40-140	6		25
Benzo(b)fluoranthene	68		71		40-140	4		25
Benzo(k)fluoranthene	73		77		40-140	5		25
Benzo(a)pyrene	62		66		40-140	6		25
Indeno(1,2,3-cd)Pyrene	67		71		40-140	6		25
Dibenzo(a,h)anthracene	65		68		40-140	5		25
Benzo(ghi)perylene	63		66		40-140	5		25
Nonane (C9)	41		41		30-140	0		25

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703745  
**Report Date:** 02/13/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD Qual	RPD Limits
Extractable Petroleum Hydrocarbons - Westborough Lab Associated sample(s): 01-02,04-05 Batch: WG976461-2 WG976461-3							
Decane (C10)	45		46		40-140	2	25
Dodecane (C12)	46		47		40-140	2	25
Tetradecane (C14)	48		47		40-140	2	25
Hexadecane (C16)	51		50		40-140	2	25
Octadecane (C18)	56		54		40-140	4	25
Nonadecane (C19)	56		53		40-140	6	25
Eicosane (C20)	57		54		40-140	5	25
Docosane (C22)	57		55		40-140	4	25
Tetracosane (C24)	57		54		40-140	5	25
Hexacosane (C26)	57		54		40-140	5	25
Octacosane (C28)	57		54		40-140	5	25
Triacontane (C30)	57		54		40-140	5	25
Hexatriacontane (C36)	59		54		40-140	9	25

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Chloro-Octadecane	50		53		40-140
o-Terphenyl	81		83		40-140
2-Fluorobiphenyl	73		75		40-140
2-Bromonaphthalene	76		78		40-140
% Naphthalene Breakthrough	0		0		
% 2-Methylnaphthalene Breakthrough	0		0		

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703745  
**Report Date:** 02/13/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Petroleum Hydrocarbons - Westborough Lab Associated sample(s): 01-02,04-05 Batch: WG977166-2 WG977166-3								
C5-C8 Aliphatics	100		100		70-130	0		25
C9-C12 Aliphatics	100		101		70-130	1		25
C9-C10 Aromatics	100		101		70-130	1		25
Benzene	97		99		70-130	2		25
Toluene	98		99		70-130	1		25
Ethylbenzene	98		99		70-130	0		25
p/m-Xylene	100		100		70-130	0		25
o-Xylene	100		100		70-130	0		25
Methyl tert butyl ether	98		107		70-130	8		25
Naphthalene	105		113		70-130	7		25
1,2,4-Trimethylbenzene	100		101		70-130	1		25
Pentane	97		96		70-130	1		25
2-Methylpentane	100		99		70-130	1		25
2,2,4-Trimethylpentane	102		101		70-130	1		25
n-Nonane	101		101		30-130	0		25
n-Decane	100		100		70-130	0		25
n-Butylcyclohexane	100		102		70-130	2		25

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703745  
**Report Date:** 02/13/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
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Volatile Petroleum Hydrocarbons - Westborough Lab Associated sample(s): 01-02,04-05 Batch: WG977166-2 WG977166-3

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2,5-Dibromotoluene-PID	102		104		70-130
2,5-Dibromotoluene-FID	98		102		70-130

**PCBS**



Project Name: EAST BOSTON

Lab Number: L1703745

Project Number: 43068

Report Date: 02/13/17

**SAMPLE RESULTS**

Lab ID: L1703745-01  
 Client ID: VES-132 (2-3)  
 Sample Location: MA  
 Matrix: Soil  
 Analytical Method: 97,8082A  
 Analytical Date: 02/09/17 05:08  
 Analyst: JA  
 Percent Solids: 87%

Date Collected: 02/06/17 08:00  
 Date Received: 02/06/17  
 Field Prep: Not Specified  
 Extraction Method: EPA 3540C  
 Extraction Date: 02/08/17 00:43  
 Cleanup Method: EPA 3665A  
 Cleanup Date: 02/09/17  
 Cleanup Method: EPA 3660B  
 Cleanup Date: 02/09/17

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
<b>MCP Polychlorinated Biphenyls - Westborough Lab</b>							
Aroclor 1016	ND		ug/kg	37.6	--	1	A
Aroclor 1221	ND		ug/kg	37.6	--	1	A
Aroclor 1232	ND		ug/kg	37.6	--	1	A
Aroclor 1242	ND		ug/kg	37.6	--	1	A
Aroclor 1248	ND		ug/kg	37.6	--	1	A
Aroclor 1254	ND		ug/kg	37.6	--	1	A
Aroclor 1260	ND		ug/kg	37.6	--	1	A
Aroclor 1262	ND		ug/kg	37.6	--	1	A
Aroclor 1268	ND		ug/kg	37.6	--	1	A
PCBs, Total	ND		ug/kg	37.6	--	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	85		30-150	A
Decachlorobiphenyl	45		30-150	A
2,4,5,6-Tetrachloro-m-xylene	80		30-150	B
Decachlorobiphenyl	53		30-150	B

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703745  
**Report Date:** 02/13/17

**SAMPLE RESULTS**

Lab ID: L1703745-02  
Client ID: VES-135 (0-2)  
Sample Location: MA  
Matrix: Soil  
Analytical Method: 97,8082A  
Analytical Date: 02/09/17 05:20  
Analyst: JA  
Percent Solids: 85%

Date Collected: 02/06/17 09:30  
Date Received: 02/06/17  
Field Prep: Not Specified  
Extraction Method: EPA 3540C  
Extraction Date: 02/08/17 00:43  
Cleanup Method: EPA 3665A  
Cleanup Date: 02/09/17  
Cleanup Method: EPA 3660B  
Cleanup Date: 02/09/17

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
<b>MCP Polychlorinated Biphenyls - Westborough Lab</b>							
Aroclor 1016	ND		ug/kg	38.8	--	1	A
Aroclor 1221	ND		ug/kg	38.8	--	1	A
Aroclor 1232	ND		ug/kg	38.8	--	1	A
Aroclor 1242	ND		ug/kg	38.8	--	1	A
Aroclor 1248	ND		ug/kg	38.8	--	1	A
Aroclor 1254	ND		ug/kg	38.8	--	1	A
Aroclor 1260	ND		ug/kg	38.8	--	1	A
Aroclor 1262	ND		ug/kg	38.8	--	1	A
Aroclor 1268	ND		ug/kg	38.8	--	1	A
PCBs, Total	ND		ug/kg	38.8	--	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	83		30-150	A
Decachlorobiphenyl	44		30-150	A
2,4,5,6-Tetrachloro-m-xylene	70		30-150	B
Decachlorobiphenyl	50		30-150	B

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703745  
**Report Date:** 02/13/17

**SAMPLE RESULTS**

Lab ID: L1703745-04  
Client ID: VES-133 (5-7)  
Sample Location: MA  
Matrix: Soil  
Analytical Method: 97,8082A  
Analytical Date: 02/09/17 05:33  
Analyst: JA  
Percent Solids: 46%

Date Collected: 02/06/17 13:00  
Date Received: 02/06/17  
Field Prep: Not Specified  
Extraction Method: EPA 3540C  
Extraction Date: 02/08/17 00:43  
Cleanup Method: EPA 3665A  
Cleanup Date: 02/09/17  
Cleanup Method: EPA 3660B  
Cleanup Date: 02/09/17

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
<b>MCP Polychlorinated Biphenyls - Westborough Lab</b>							
Aroclor 1016	ND		ug/kg	72.7	--	1	A
Aroclor 1221	ND		ug/kg	72.7	--	1	A
Aroclor 1232	ND		ug/kg	72.7	--	1	A
Aroclor 1242	ND		ug/kg	72.7	--	1	A
Aroclor 1248	ND		ug/kg	72.7	--	1	A
Aroclor 1254	ND		ug/kg	72.7	--	1	A
Aroclor 1260	ND		ug/kg	72.7	--	1	A
Aroclor 1262	ND		ug/kg	72.7	--	1	A
Aroclor 1268	ND		ug/kg	72.7	--	1	A
PCBs, Total	ND		ug/kg	72.7	--	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	64		30-150	A
Decachlorobiphenyl	39		30-150	A
2,4,5,6-Tetrachloro-m-xylene	55		30-150	B
Decachlorobiphenyl	44		30-150	B

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703745  
**Report Date:** 02/13/17

**SAMPLE RESULTS**

Lab ID: L1703745-05  
Client ID: VES-129 (0-2)  
Sample Location: MA  
Matrix: Soil  
Analytical Method: 97,8082A  
Analytical Date: 02/09/17 05:45  
Analyst: JA  
Percent Solids: 89%

Date Collected: 02/06/17 13:15  
Date Received: 02/06/17  
Field Prep: Not Specified  
Extraction Method: EPA 3540C  
Extraction Date: 02/08/17 00:43  
Cleanup Method: EPA 3665A  
Cleanup Date: 02/09/17  
Cleanup Method: EPA 3660B  
Cleanup Date: 02/09/17

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
<b>MCP Polychlorinated Biphenyls - Westborough Lab</b>							
Aroclor 1016	ND		ug/kg	36.5	--	1	A
Aroclor 1221	ND		ug/kg	36.5	--	1	A
Aroclor 1232	ND		ug/kg	36.5	--	1	A
Aroclor 1242	ND		ug/kg	36.5	--	1	A
Aroclor 1248	ND		ug/kg	36.5	--	1	A
Aroclor 1254	ND		ug/kg	36.5	--	1	A
Aroclor 1260	ND		ug/kg	36.5	--	1	A
Aroclor 1262	ND		ug/kg	36.5	--	1	A
Aroclor 1268	ND		ug/kg	36.5	--	1	A
PCBs, Total	ND		ug/kg	36.5	--	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	75		30-150	A
Decachlorobiphenyl	45		30-150	A
2,4,5,6-Tetrachloro-m-xylene	66		30-150	B
Decachlorobiphenyl	50		30-150	B

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703745  
**Report Date:** 02/13/17

### Method Blank Analysis Batch Quality Control

Analytical Method: 97,8082A  
Analytical Date: 02/09/17 04:31  
Analyst: JA

Extraction Method: EPA 3540C  
Extraction Date: 02/08/17 00:43  
Cleanup Method: EPA 3665A  
Cleanup Date: 02/09/17  
Cleanup Method: EPA 3660B  
Cleanup Date: 02/09/17

Parameter	Result	Qualifier	Units	RL	MDL	Column
MCP Polychlorinated Biphenyls - Westborough Lab for sample(s): 01-02,04-05 Batch: WG976168-1						
Aroclor 1016	ND		ug/kg	31.7	--	A
Aroclor 1221	ND		ug/kg	31.7	--	A
Aroclor 1232	ND		ug/kg	31.7	--	A
Aroclor 1242	ND		ug/kg	31.7	--	A
Aroclor 1248	ND		ug/kg	31.7	--	A
Aroclor 1254	ND		ug/kg	31.7	--	A
Aroclor 1260	ND		ug/kg	31.7	--	A
Aroclor 1262	ND		ug/kg	31.7	--	A
Aroclor 1268	ND		ug/kg	31.7	--	A
PCBs, Total	ND		ug/kg	31.7	--	A

Surrogate	%Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	72		30-150	A
Decachlorobiphenyl	49		30-150	A
2,4,5,6-Tetrachloro-m-xylene	69		30-150	B
Decachlorobiphenyl	55		30-150	B

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703745  
**Report Date:** 02/13/17

<b>Parameter</b>	<i>LCS</i> <i>%Recovery</i>	<i>Qual</i>	<i>LCSD</i> <i>%Recovery</i>	<i>Qual</i>	<i>%Recovery</i> <i>Limits</i>	<i>RPD</i>	<i>Qual</i>	<i>RPD</i> <i>Limits</i>	<i>Column</i>
MCP Polychlorinated Biphenyls - Westborough Lab Associated sample(s): 01-02,04-05 Batch: WG976168-2 WG976168-3									
Aroclor 1016	63		70		40-140	11		30	A
Aroclor 1260	45		48		40-140	6		30	A

<b>Surrogate</b>	<i>LCS</i> <i>%Recovery</i>	<i>Qual</i>	<i>LCSD</i> <i>%Recovery</i>	<i>Qual</i>	<i>Acceptance</i> <i>Criteria</i>	<i>Column</i>
2,4,5,6-Tetrachloro-m-xylene						
Decachlorobiphenyl	78		77		30-150	A
2,4,5,6-Tetrachloro-m-xylene	42		41		30-150	A
Decachlorobiphenyl	70		74		30-150	B
2,4,5,6-Tetrachloro-m-xylene	51		51		30-150	B

# **PESTICIDES**



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703745  
**Report Date:** 02/13/17

**SAMPLE RESULTS**

Lab ID: L1703745-03  
Client ID: VES-133 (0-2)  
Sample Location: MA  
Matrix: Soil  
Analytical Method: 97,8081B  
Analytical Date: 02/11/17 18:14  
Analyst: JW  
Percent Solids: 85%

Date Collected: 02/06/17 12:45  
Date Received: 02/06/17  
Field Prep: Not Specified  
Extraction Method: EPA 3546  
Extraction Date: 02/08/17 01:25  
Cleanup Method: EPA 3620B  
Cleanup Date: 02/08/17

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
<b>MCP Organochlorine Pesticides - Westborough Lab</b>							
Delta-BHC	ND		ug/kg	9.11	--	1	A
Lindane	ND		ug/kg	3.04	--	1	A
Alpha-BHC	ND		ug/kg	3.79	--	1	A
Beta-BHC	ND		ug/kg	9.11	--	1	A
Heptachlor	ND		ug/kg	4.55	--	1	A
Aldrin	ND		ug/kg	9.11	--	1	A
Heptachlor epoxide	ND		ug/kg	17.1	--	1	A
Endrin	ND		ug/kg	3.79	--	1	A
Endrin ketone	ND		ug/kg	9.11	--	1	A
Dieldrin	ND		ug/kg	5.69	--	1	A
4,4'-DDE	ND		ug/kg	9.11	--	1	A
4,4'-DDD	ND		ug/kg	9.11	--	1	A
4,4'-DDT	ND		ug/kg	17.1	--	1	A
Endosulfan I	ND		ug/kg	9.11	--	1	A
Endosulfan II	ND		ug/kg	9.11	--	1	A
Endosulfan sulfate	ND		ug/kg	3.79	--	1	A
Methoxychlor	ND		ug/kg	17.1	--	1	A
Chlordane	ND		ug/kg	74.0	--	1	A
Hexachlorobenzene	ND		ug/kg	9.11	--	1	A
Toxaphene	ND		ug/kg	171	--	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	90		30-150	B
Decachlorobiphenyl	82		30-150	B
2,4,5,6-Tetrachloro-m-xylene	98		30-150	A
Decachlorobiphenyl	85		30-150	A

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703745  
**Report Date:** 02/13/17

### Method Blank Analysis Batch Quality Control

Analytical Method: 97,8081B  
Analytical Date: 02/11/17 17:36  
Analyst: JW

Extraction Method: EPA 3546  
Extraction Date: 02/08/17 01:25  
Cleanup Method: EPA 3620B  
Cleanup Date: 02/08/17

Parameter	Result	Qualifier	Units	RL	MDL	Column
MCP Organochlorine Pesticides - Westborough Lab for sample(s): 03 Batch: WG976172-1						
Delta-BHC	ND		ug/kg	7.60	--	A
Lindane	ND		ug/kg	2.53	--	A
Alpha-BHC	ND		ug/kg	3.17	--	A
Beta-BHC	ND		ug/kg	7.60	--	A
Heptachlor	ND		ug/kg	3.80	--	A
Aldrin	ND		ug/kg	7.60	--	A
Heptachlor epoxide	ND		ug/kg	14.2	--	A
Endrin	ND		ug/kg	3.17	--	A
Endrin ketone	ND		ug/kg	7.60	--	A
Dieldrin	ND		ug/kg	4.75	--	A
4,4'-DDE	ND		ug/kg	7.60	--	A
4,4'-DDD	ND		ug/kg	7.60	--	A
4,4'-DDT	ND		ug/kg	14.2	--	A
Endosulfan I	ND		ug/kg	7.60	--	A
Endosulfan II	ND		ug/kg	7.60	--	A
Endosulfan sulfate	ND		ug/kg	3.17	--	A
Methoxychlor	ND		ug/kg	14.2	--	A
Chlordane	ND		ug/kg	61.8	--	A
Hexachlorobenzene	ND		ug/kg	7.60	--	A
Toxaphene	ND		ug/kg	142	--	A

Surrogate	%Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	79		30-150	B
Decachlorobiphenyl	68		30-150	B
2,4,5,6-Tetrachloro-m-xylene	84		30-150	A
Decachlorobiphenyl	72		30-150	A



# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703745  
**Report Date:** 02/13/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
MCP Organochlorine Pesticides - Westborough Lab Associated sample(s): 03 Batch: WG976172-2 WG976172-3									
Delta-BHC	80		78		40-140	3		30	A
Lindane	80		77		40-140	4		30	A
Alpha-BHC	95		93		40-140	2		30	A
Beta-BHC	90		96		40-140	6		30	A
Heptachlor	84		80		40-140	5		30	A
Aldrin	89		88		40-140	1		30	A
Heptachlor epoxide	84		77		40-140	9		30	A
Endrin	95		83		40-140	13		30	A
Endrin ketone	79		68		40-140	15		30	A
Dieldrin	91		83		40-140	9		30	A
4,4'-DDE	87		81		40-140	7		30	A
4,4'-DDD	86		78		40-140	10		30	A
4,4'-DDT	87		80		40-140	8		30	A
Endosulfan I	84		79		40-140	6		30	A
Endosulfan II	87		77		40-140	12		30	A
Endosulfan sulfate	70		62		40-140	12		30	A
Methoxychlor	91		83		40-140	9		30	A
Hexachlorobenzene	79		83		40-140	5		30	A
Endrin aldehyde	64		53		40-140	19		30	A
cis-Chlordane	73		71		40-140	3		30	A
trans-Chlordane	84		76		40-140	10		30	A

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703745  
**Report Date:** 02/13/17

<b>Parameter</b>	<i>LCS</i> <i>%Recovery</i>	<i>Qual</i>	<i>LCSD</i> <i>%Recovery</i>	<i>Qual</i>	<i>%Recovery</i> <i>Limits</i>	<i>RPD</i>	<i>Qual</i>	<i>RPD</i> <i>Limits</i>
MCP Organochlorine Pesticides - Westborough Lab Associated sample(s): 03 Batch: WG976172-2 WG976172-3								
<b>Surrogate</b>	<i>LCS</i> <i>%Recovery</i>	<i>Qual</i>	<i>LCSD</i> <i>%Recovery</i>	<i>Qual</i>	<i>Acceptance</i> <i>Criteria</i>			
2,4,5,6-Tetrachloro-m-xylene	83		74		30-150	B		
Decachlorobiphenyl	78		69		30-150	B		
2,4,5,6-Tetrachloro-m-xylene	80		83		30-150	A		
Decachlorobiphenyl	61		61		30-150	A		

## METALS



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703745  
**Report Date:** 02/13/17

**SAMPLE RESULTS**

Lab ID: L1703745-01 Date Collected: 02/06/17 08:00  
Client ID: VES-132 (2-3) Date Received: 02/06/17  
Sample Location: MA Field Prep: Not Specified  
Matrix: Soil  
Percent Solids: 87%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
<b>MCP Total Metals - Mansfield Lab</b>											
Arsenic, Total	3.5		mg/kg	0.45	--	1	02/07/17 21:20	02/08/17 23:15	EPA 3050B	97,6010C	MC
Barium, Total	16		mg/kg	0.45	--	1	02/07/17 21:20	02/08/17 23:15	EPA 3050B	97,6010C	MC
Cadmium, Total	ND		mg/kg	0.45	--	1	02/07/17 21:20	02/08/17 23:15	EPA 3050B	97,6010C	MC
Chromium, Total	12		mg/kg	0.45	--	1	02/07/17 21:20	02/08/17 23:15	EPA 3050B	97,6010C	MC
Lead, Total	6.6		mg/kg	2.2	--	1	02/07/17 21:20	02/08/17 23:15	EPA 3050B	97,6010C	MC
Mercury, Total	ND		mg/kg	0.072	--	1	02/07/17 08:10	02/07/17 19:01	EPA 7471B	97,7471B	JH
Selenium, Total	ND		mg/kg	2.2	--	1	02/07/17 21:20	02/08/17 23:15	EPA 3050B	97,6010C	MC
Silver, Total	ND		mg/kg	0.45	--	1	02/07/17 21:20	02/08/17 23:15	EPA 3050B	97,6010C	MC



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703745  
**Report Date:** 02/13/17

**SAMPLE RESULTS**

Lab ID: L1703745-02 Date Collected: 02/06/17 09:30  
Client ID: VES-135 (0-2) Date Received: 02/06/17  
Sample Location: MA Field Prep: Not Specified  
Matrix: Soil  
Percent Solids: 85%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
<b>MCP Total Metals - Mansfield Lab</b>											
Arsenic, Total	6.1		mg/kg	0.46	--	1	02/07/17 21:20	02/08/17 23:19	EPA 3050B	97,6010C	MC
Barium, Total	73		mg/kg	0.46	--	1	02/07/17 21:20	02/08/17 23:19	EPA 3050B	97,6010C	MC
Cadmium, Total	ND		mg/kg	0.46	--	1	02/07/17 21:20	02/08/17 23:19	EPA 3050B	97,6010C	MC
Chromium, Total	19		mg/kg	0.46	--	1	02/07/17 21:20	02/08/17 23:19	EPA 3050B	97,6010C	MC
Lead, Total	260		mg/kg	2.3	--	1	02/07/17 21:20	02/08/17 23:19	EPA 3050B	97,6010C	MC
Mercury, Total	0.745		mg/kg	0.077	--	1	02/07/17 08:10	02/07/17 19:02	EPA 7471B	97,7471B	JH
Selenium, Total	ND		mg/kg	2.3	--	1	02/07/17 21:20	02/08/17 23:19	EPA 3050B	97,6010C	MC
Silver, Total	ND		mg/kg	0.46	--	1	02/07/17 21:20	02/08/17 23:19	EPA 3050B	97,6010C	MC



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703745  
**Report Date:** 02/13/17

**SAMPLE RESULTS**

Lab ID: L1703745-04 Date Collected: 02/06/17 13:00  
Client ID: VES-133 (5-7) Date Received: 02/06/17  
Sample Location: MA Field Prep: Not Specified  
Matrix: Soil  
Percent Solids: 46%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
<b>MCP Total Metals - Mansfield Lab</b>											
Arsenic, Total	30		mg/kg	0.85	--	1	02/07/17 21:20	02/08/17 23:23	EPA 3050B	97,6010C	MC
Barium, Total	310		mg/kg	0.85	--	1	02/07/17 21:20	02/08/17 23:23	EPA 3050B	97,6010C	MC
Cadmium, Total	2.2		mg/kg	0.85	--	1	02/07/17 21:20	02/08/17 23:23	EPA 3050B	97,6010C	MC
Chromium, Total	120		mg/kg	0.85	--	1	02/07/17 21:20	02/08/17 23:23	EPA 3050B	97,6010C	MC
Lead, Total	2000		mg/kg	4.3	--	1	02/07/17 21:20	02/08/17 23:23	EPA 3050B	97,6010C	MC
Mercury, Total	3.07		mg/kg	0.147	--	1	02/07/17 08:10	02/07/17 19:04	EPA 7471B	97,7471B	JH
Selenium, Total	ND		mg/kg	4.3	--	1	02/07/17 21:20	02/08/17 23:23	EPA 3050B	97,6010C	MC
Silver, Total	2.9		mg/kg	0.85	--	1	02/07/17 21:20	02/08/17 23:23	EPA 3050B	97,6010C	MC



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703745  
**Report Date:** 02/13/17

**SAMPLE RESULTS**

Lab ID: L1703745-05 Date Collected: 02/06/17 13:15  
Client ID: VES-129 (0-2) Date Received: 02/06/17  
Sample Location: MA Field Prep: Not Specified  
Matrix: Soil  
Percent Solids: 89%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
<b>MCP Total Metals - Mansfield Lab</b>											
Arsenic, Total	16		mg/kg	0.45	--	1	02/07/17 21:20	02/08/17 23:27	EPA 3050B	97,6010C	MC
Barium, Total	150		mg/kg	0.45	--	1	02/07/17 21:20	02/08/17 23:27	EPA 3050B	97,6010C	MC
Cadmium, Total	0.51		mg/kg	0.45	--	1	02/07/17 21:20	02/08/17 23:27	EPA 3050B	97,6010C	MC
Chromium, Total	17		mg/kg	0.45	--	1	02/07/17 21:20	02/08/17 23:27	EPA 3050B	97,6010C	MC
Lead, Total	400		mg/kg	2.2	--	1	02/07/17 21:20	02/08/17 23:27	EPA 3050B	97,6010C	MC
Mercury, Total	2.07		mg/kg	0.076	--	1	02/07/17 08:10	02/07/17 19:10	EPA 7471B	97,7471B	JH
Selenium, Total	3.8		mg/kg	2.2	--	1	02/07/17 21:20	02/08/17 23:27	EPA 3050B	97,6010C	MC
Silver, Total	0.81		mg/kg	0.45	--	1	02/07/17 21:20	02/08/17 23:27	EPA 3050B	97,6010C	MC



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703745  
**Report Date:** 02/13/17

## Method Blank Analysis Batch Quality Control

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
MCP Total Metals - Mansfield Lab for sample(s): 01-02,04-05 Batch: WG975847-1									
Mercury, Total	ND	mg/kg	0.083	--	1	02/07/17 08:10	02/07/17 10:38	97,7471B	JH

### Prep Information

Digestion Method: EPA 7471B

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
MCP Total Metals - Mansfield Lab for sample(s): 01-02,04-05 Batch: WG976114-1									
Arsenic, Total	ND	mg/kg	0.40	--	1	02/07/17 21:20	02/08/17 22:26	97,6010C	MC
Barium, Total	ND	mg/kg	0.40	--	1	02/07/17 21:20	02/08/17 22:26	97,6010C	MC
Cadmium, Total	ND	mg/kg	0.40	--	1	02/07/17 21:20	02/08/17 22:26	97,6010C	MC
Chromium, Total	ND	mg/kg	0.40	--	1	02/07/17 21:20	02/08/17 22:26	97,6010C	MC
Lead, Total	ND	mg/kg	2.0	--	1	02/07/17 21:20	02/08/17 22:26	97,6010C	MC
Selenium, Total	ND	mg/kg	2.0	--	1	02/07/17 21:20	02/08/17 22:26	97,6010C	MC
Silver, Total	ND	mg/kg	0.40	--	1	02/07/17 21:20	02/08/17 22:26	97,6010C	MC

### Prep Information

Digestion Method: EPA 3050B

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703745  
**Report Date:** 02/13/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Total Metals - Mansfield Lab Associated sample(s): 01-02,04-05 Batch: WG975847-2 WG975847-3 SRM Lot Number: D091-540								
Mercury, Total	92		110		72-128	18		30
MCP Total Metals - Mansfield Lab Associated sample(s): 01-02,04-05 Batch: WG976114-2 WG976114-3 SRM Lot Number: D091-540								
Arsenic, Total	103		103		80-121	0		30
Barium, Total	96		91		84-117	5		30
Cadmium, Total	97		99		83-117	2		30
Chromium, Total	98		98		80-119	0		30
Lead, Total	103		103		82-118	0		30
Selenium, Total	101		101		79-121	0		30
Silver, Total	99		99		76-124	0		30

# **INORGANICS & MISCELLANEOUS**



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703745  
**Report Date:** 02/13/17

## SAMPLE RESULTS

Lab ID: L1703745-01  
Client ID: VES-132 (2-3)  
Sample Location: MA  
Matrix: Soil

Date Collected: 02/06/17 08:00  
Date Received: 02/06/17  
Field Prep: Not Specified

### Test Material Information

Source of Material: Unknown  
Description of Material: Non-Metallic - Damp Soil  
Particle Size: Medium  
Preliminary Burning Time (sec): 120

Parameter	Result	Date Analyzed	Analytical Method	Analyst
Ignitability of Solids - Westborough Lab				
Ignitability	NI	02/07/17 12:38	1,1030	AB



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703745  
**Report Date:** 02/13/17

## SAMPLE RESULTS

Lab ID: L1703745-02  
Client ID: VES-135 (0-2)  
Sample Location: MA  
Matrix: Soil

Date Collected: 02/06/17 09:30  
Date Received: 02/06/17  
Field Prep: Not Specified

### Test Material Information

Source of Material: Unknown  
Description of Material: Non-Metallic - Damp Soil  
Particle Size: Medium  
Preliminary Burning Time (sec): 120

Parameter	Result	Date Analyzed	Analytical Method	Analyst
Ignitability of Solids - Westborough Lab				
Ignitability	NI	02/07/17 12:38	1,1030	AB



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703745  
**Report Date:** 02/13/17

## SAMPLE RESULTS

Lab ID: L1703745-04  
Client ID: VES-133 (5-7)  
Sample Location: MA  
Matrix: Soil

Date Collected: 02/06/17 13:00  
Date Received: 02/06/17  
Field Prep: Not Specified

### Test Material Information

Source of Material: Unknown  
Description of Material: Non-Metallic - Wet Soil  
Particle Size: Medium  
Preliminary Burning Time (sec): 120

Parameter	Result	Date Analyzed	Analytical Method	Analyst
Ignitability of Solids - Westborough Lab				
Ignitability	NI	02/07/17 12:38	1,1030	AB



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703745  
**Report Date:** 02/13/17

## SAMPLE RESULTS

Lab ID: L1703745-05  
Client ID: VES-129 (0-2)  
Sample Location: MA  
Matrix: Soil

Date Collected: 02/06/17 13:15  
Date Received: 02/06/17  
Field Prep: Not Specified

### Test Material Information

Source of Material: Unknown  
Description of Material: Non-Metallic - Damp Soil  
Particle Size: Medium  
Preliminary Burning Time (sec): 120

Parameter	Result	Date Analyzed	Analytical Method	Analyst
Ignitability of Solids - Westborough Lab				
Ignitability	NI	02/07/17 12:38	1,1030	AB



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703745  
**Report Date:** 02/13/17

### SAMPLE RESULTS

Lab ID:	L1703745-01	Date Collected:	02/06/17 08:00
Client ID:	VES-132 (2-3)	Date Received:	02/06/17
Sample Location:	MA	Field Prep:	Not Specified
Matrix:	Soil		

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>General Chemistry - Westborough Lab</b>										
Specific Conductance @ 25 C	26		umhos/cm	10	--	1	-	02/06/17 23:38	1,9050A	VB
Solids, Total	87.0	%		0.100	NA	1	-	02/07/17 15:32	121,2540G	RI
pH (H)	7.4	SU		-	NA	1	-	02/06/17 21:35	1,9045D	AS
Cyanide, Reactive	ND		mg/kg	10	--	1	02/07/17 17:10	02/07/17 18:46	1,7.3	RP
Sulfide, Reactive	ND		mg/kg	10	--	1	02/07/17 17:10	02/07/17 18:39	1,7.3	RP



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703745  
**Report Date:** 02/13/17

### SAMPLE RESULTS

Lab ID: L1703745-02  
Client ID: VES-135 (0-2)  
Sample Location: MA  
Matrix: Soil

Date Collected: 02/06/17 09:30  
Date Received: 02/06/17  
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>General Chemistry - Westborough Lab</b>										
Specific Conductance @ 25 C	43		umhos/cm	10	--	1	-	02/06/17 23:38	1,9050A	VB
Solids, Total	84.8	%		0.100	NA	1	-	02/07/17 15:32	121,2540G	RI
pH (H)	7.4	SU		-	NA	1	-	02/06/17 21:35	1,9045D	AS
Cyanide, Reactive	ND		mg/kg	10	--	1	02/07/17 17:10	02/07/17 18:47	1,7.3	RP
Sulfide, Reactive	ND		mg/kg	10	--	1	02/07/17 17:10	02/07/17 18:40	1,7.3	RP



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703745  
**Report Date:** 02/13/17

### SAMPLE RESULTS

Lab ID: L1703745-03  
Client ID: VES-133 (0-2)  
Sample Location: MA  
Matrix: Soil

Date Collected: 02/06/17 12:45  
Date Received: 02/06/17  
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>General Chemistry - Westborough Lab</b>										
Solids, Total	84.9		%	0.100	NA	1	-	02/07/17 15:32	121,2540G	RI



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703745  
**Report Date:** 02/13/17

### SAMPLE RESULTS

Lab ID: L1703745-04  
Client ID: VES-133 (5-7)  
Sample Location: MA  
Matrix: Soil

Date Collected: 02/06/17 13:00  
Date Received: 02/06/17  
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>General Chemistry - Westborough Lab</b>										
Specific Conductance @ 25 C	200		umhos/cm	10	--	1	-	02/06/17 23:38	1,9050A	VB
Solids, Total	45.6	%		0.100	NA	1	-	02/07/17 15:32	121,2540G	RI
pH (H)	7.5	SU		-	NA	1	-	02/06/17 21:35	1,9045D	AS
Cyanide, Reactive	ND		mg/kg	10	--	1	02/07/17 17:10	02/07/17 18:47	1,7.3	RP
Sulfide, Reactive	ND		mg/kg	10	--	1	02/07/17 17:10	02/07/17 18:40	1,7.3	RP



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703745  
**Report Date:** 02/13/17

### SAMPLE RESULTS

Lab ID: L1703745-05  
Client ID: VES-129 (0-2)  
Sample Location: MA  
Matrix: Soil

Date Collected: 02/06/17 13:15  
Date Received: 02/06/17  
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>General Chemistry - Westborough Lab</b>										
Specific Conductance @ 25 C	23		umhos/cm	10	--	1	-	02/06/17 23:38	1,9050A	VB
Solids, Total	88.5	%		0.100	NA	1	-	02/07/17 15:32	121,2540G	RI
pH (H)	7.5	SU		-	NA	1	-	02/06/17 21:35	1,9045D	AS
Cyanide, Reactive	ND		mg/kg	10	--	1	02/07/17 17:10	02/07/17 18:47	1,7.3	RP
Sulfide, Reactive	ND		mg/kg	10	--	1	02/07/17 17:10	02/07/17 18:40	1,7.3	RP



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703745  
**Report Date:** 02/13/17

**Method Blank Analysis**  
**Batch Quality Control**

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab for sample(s): 01-02,04-05 Batch: WG976073-1									
Sulfide, Reactive	ND	mg/kg	10	--	1	02/07/17 17:10	02/07/17 18:36	1,7.3	RP
General Chemistry - Westborough Lab for sample(s): 01-02,04-05 Batch: WG976074-1									
Cyanide, Reactive	ND	mg/kg	10	--	1	02/07/17 17:10	02/07/17 18:44	1,7.3	RP



# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703745  
**Report Date:** 02/13/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01-02,04-05 Batch: WG975787-1								
pH	100	-	-	-	99-101	-	-	-
General Chemistry - Westborough Lab Associated sample(s): 01-02,04-05 Batch: WG975813-1								
Specific Conductance	101	-	-	-	99-101	-	-	-
General Chemistry - Westborough Lab Associated sample(s): 01-02,04-05 Batch: WG976073-2								
Sulfide, Reactive	86	-	-	-	60-125	-	-	40
General Chemistry - Westborough Lab Associated sample(s): 01-02,04-05 Batch: WG976074-2								
Cyanide, Reactive	56	-	-	-	30-125	-	-	40

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703745  
**Report Date:** 02/13/17

### Sample Receipt and Container Information

Were project specific reporting limits specified? YES

**Reagent H2O Preserved Vials Frozen on:** 02/06/2017 21:14

#### Cooler Information Custody Seal

##### Cooler

A Absent

#### Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L1703745-01A	Vial MeOH preserved	A	N/A	3.6	Y	Absent	VPH-10(28),MCP-8260HLW-10(14)
L1703745-01B	Vial water preserved	A	N/A	3.6	Y	Absent	MCP-8260HLW-10(14)
L1703745-01C	Vial water preserved	A	N/A	3.6	Y	Absent	MCP-8260HLW-10(14)
L1703745-01D	Glass 500ml/16oz unpreserved	A	N/A	3.6	Y	Absent	EPH-10(14),IGNIT-1030(14),REACTS(14),MCP-8270-10(14),TS(7),MCP-8082-10-3540C(365),PH-9045(1),REACTCN(14),COND-9050(28)
L1703745-01E	Metals Only - Glass 60mL/2oz unp	A	N/A	3.6	Y	Absent	MCP-CR-6010T-10(180),MCP-AS-6010T-10(180),MCP-7471T-10(28),MCP-CD-6010T-10(180),MCP-AG-6010T-10(180),MCP-SE-6010T-10(180),MCP-BA-6010T-10(180),MCP-PB-6010T-10(180)
L1703745-02A	Vial MeOH preserved	A	N/A	3.6	Y	Absent	VPH-10(28),MCP-8260HLW-10(14)
L1703745-02B	Vial water preserved	A	N/A	3.6	Y	Absent	MCP-8260HLW-10(14)
L1703745-02C	Vial water preserved	A	N/A	3.6	Y	Absent	MCP-8260HLW-10(14)
L1703745-02D	Glass 500ml/16oz unpreserved	A	N/A	3.6	Y	Absent	EPH-10(14),IGNIT-1030(14),REACTS(14),MCP-8270-10(14),TS(7),MCP-8082-10-3540C(365),PH-9045(1),REACTCN(14),COND-9050(28)
L1703745-02E	Metals Only - Glass 60mL/2oz unp	A	N/A	3.6	Y	Absent	MCP-CR-6010T-10(180),MCP-AS-6010T-10(180),MCP-7471T-10(28),MCP-CD-6010T-10(180),MCP-AG-6010T-10(180),MCP-SE-6010T-10(180),MCP-BA-6010T-10(180),MCP-PB-6010T-10(180)
L1703745-03A	Glass 120ml/4oz unpreserved	A	N/A	3.6	Y	Absent	MCP-8081-10(14),TS(7)
L1703745-04A	Vial MeOH preserved	A	N/A	3.6	Y	Absent	VPH-10(28),MCP-8260HLW-10(14)

\*Values in parentheses indicate holding time in days

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703745  
**Report Date:** 02/13/17

**Container Information**

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L1703745-04B	Vial water preserved	A	N/A	3.6	Y	Absent	MCP-8260HLW-10(14)
L1703745-04C	Vial water preserved	A	N/A	3.6	Y	Absent	MCP-8260HLW-10(14)
L1703745-04D	Glass 500ml/16oz unpreserved	A	N/A	3.6	Y	Absent	EPH-10(14),IGNIT-1030(14),REACTS(14),MCP-8270-10(14),TS(7),MCP-8082-10-3540C(365),PH-9045(1),REACTCN(14),COND-9050(28)
L1703745-04E	Metals Only - Glass 60mL/2oz unp	A	N/A	3.6	Y	Absent	MCP-CR-6010T-10(180),MCP-AS-6010T-10(180),MCP-7471T-10(28),MCP-CD-6010T-10(180),MCP-AG-6010T-10(180),MCP-SE-6010T-10(180),MCP-BA-6010T-10(180),MCP-PB-6010T-10(180)
L1703745-05A	Vial MeOH preserved	A	N/A	3.6	Y	Absent	VPH-10(28),MCP-8260HLW-10(14)
L1703745-05B	Vial water preserved	A	N/A	3.6	Y	Absent	MCP-8260HLW-10(14)
L1703745-05C	Vial water preserved	A	N/A	3.6	Y	Absent	MCP-8260HLW-10(14)
L1703745-05D	Glass 500ml/16oz unpreserved	A	N/A	3.6	Y	Absent	EPH-10(14),IGNIT-1030(14),REACTS(14),MCP-8270-10(14),TS(7),MCP-8082-10-3540C(365),PH-9045(1),REACTCN(14),COND-9050(28)
L1703745-05E	Metals Only - Glass 60mL/2oz unp	A	N/A	3.6	Y	Absent	MCP-CR-6010T-10(180),MCP-AS-6010T-10(180),MCP-7471T-10(28),MCP-CD-6010T-10(180),MCP-AG-6010T-10(180),MCP-SE-6010T-10(180),MCP-BA-6010T-10(180),MCP-PB-6010T-10(180)

\*Values in parentheses indicate holding time in days

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703745  
**Report Date:** 02/13/17

## GLOSSARY

### **Acronyms**

EDL	- Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).
EPA	- Environmental Protection Agency.
LCS	- Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCSD	- Laboratory Control Sample Duplicate: Refer to LCS.
LFB	- Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
MDL	- Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
MS	- Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available.
MSD	- Matrix Spike Sample Duplicate: Refer to MS.
NA	- Not Applicable.
NC	- Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
NDPA/DPA	- N-Nitrosodiphenylamine/Diphenylamine.
NI	- Not Ignitable.
NP	- Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.
RL	- Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
RPD	- Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.
SRM	- Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.
STLP	- Semi-dynamic Tank Leaching Procedure per EPA Method 1315.
TIC	- Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

### **Footnotes**

- 1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

### **Terms**

**Total:** With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

**Analytical Method:** Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

### **Data Qualifiers**

- A** - Spectra identified as "Aldol Condensation Product".
- B** - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the

**Report Format:** Data Usability Report



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703745  
**Report Date:** 02/13/17

**Data Qualifiers**

reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

- C** - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.
- D** - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.
- E** - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.
- G** - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.
- H** - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.
- I** - The lower value for the two columns has been reported due to obvious interference.
- M** - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.
- NJ** - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.
- P** - The RPD between the results for the two columns exceeds the method-specified criteria.
- Q** - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)
- R** - Analytical results are from sample re-analysis.
- RE** - Analytical results are from sample re-extraction.
- S** - Analytical results are from modified screening analysis.
- J** - Estimated value. This represents an estimated concentration for Tentatively Identified Compounds (TICs).
- ND** - Not detected at the reporting limit (RL) for the sample.

*Report Format:* Data Usability Report



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703745  
**Report Date:** 02/13/17

## REFERENCES

- 1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - IV, 2007.
- 97 EPA Test Methods (SW-846) with QC Requirements & Performance Standards for the Analysis of EPA SW-846 Methods under the Massachusetts Contingency Plan, WSC-CAM-IIA, IIB, IIIA, IIIB, IIIC, IID, VA, VB, VC, VIA, VIB, VIIIA and VIIIB, July 2010.
- 98 Method for the Determination of Extractable Petroleum Hydrocarbons (EPH), MassDEP, May 2004, Revision 1.1 with QC Requirements & Performance Standards for the Analysis of EPH under the Massachusetts Contingency Plan, WSC-CAM-IVB, July 2010.
- 100 Method for the Determination of Volatile Petroleum Hydrocarbons (VPH), MassDEP, May 2004, Revision 1.1 with QC Requirements & Performance Standards for the Analysis of VPH under the Massachusetts Contingency Plan, WSC-CAM-IVA, July 2010.
- 121 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. Standard Methods Online.

## LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at its own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.



## Certification Information

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**The following analytes are not included in our Primary NELAP Scope of Accreditation:**

**Westborough Facility**

EPA 624: m/p-xylene, o-xylene

EPA 8260C: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), Methyl methacrylate, 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.

EPA 8270D: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.

EPA 300: DW: Bromide

EPA 6860: NPW and SCM: Perchlorate

EPA 9010: NPW and SCM: Amenable Cyanide Distillation

EPA 9012B: NPW: Total Cyanide

EPA 9050A: NPW: Specific Conductance

SM3500: NPW: Ferrous Iron

SM4500: NPW: Amenable Cyanide, Dissolved Oxygen; SCM: Total Phosphorus, TKN, NO<sub>2</sub>, NO<sub>3</sub>.

SM5310C: DW: Dissolved Organic Carbon

**Mansfield Facility**

SM 2540D: TSS

EPA 3005A NPW

EPA 8082A: NPW: PCB: 1, 5, 31, 87, 101, 110, 141, 151, 153, 180, 183, 187.

EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.

**Biological Tissue Matrix**: EPA 3050B

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**The following analytes are included in our Massachusetts DEP Scope of Accreditation**

**Westborough Facility:**

**Drinking Water**

EPA 300.0: Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C**, **SM4500CN-CE**, **EPA 180.1**,

**SM2130B**, **SM4500CI-D**, **SM2320B**, **SM2540C**, **SM4500H-B**

EPA 332: Perchlorate; **EPA 524.2**: THMs and VOCs; **EPA 504.1**: EDB, DBCP.

Microbiology: **SM9215B**; **SM9223-P/A**, **SM9223B-Colilert-QT**, **SM9222D**.

**Non-Potable Water**

**SM4500H,B**, **EPA 120.1**, **SM2510B**, **SM2540C**, **SM2320B**, **SM4500CL-E**, **SM4500F-BC**, **SM4500NH3-BH**, **EPA 350.1**: Ammonia-N, LACHAT 10-107-06-1-B: Ammonia-N, **SM4500NO3-F**, **EPA 353.2**: Nitrate-N, **EPA 351.1**, **SM4500P-E**, **SM4500P-B**, **E**, **SM4500SO4-E**, **SM5220D**, **EPA 410.4**,

**SM5210B**, **SM5310C**, **SM4500CL-D**, **EPA 1664**, **EPA 420.1**, **SM4500-CN-CE**, **SM2540D**.

EPA 624: Volatile Halocarbons & Aromatics,

EPA 608: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs

EPA 625: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045**: PCB-Oil.

Microbiology: **SM9223B-Colilert-QT**; **Enterolert-QT**, **SM9221E**.

**Mansfield Facility:**

**Drinking Water**

EPA 200.7: Ba, Be, Cd, Cr, Cu, Ni, Na, Ca. **EPA 200.8**: Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Ni, Se, TL. **EPA 245.1 Hg**.

**Non-Potable Water**

EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.

EPA 200.8: Al, Sb, As, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn.

EPA 245.1 Hg.

**SM2340B**

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For a complete listing of analytes and methods, please contact your Alpha Project Manager.





## CHAIN OF CUSTODY

PAGE 1 OF 1

8 Walkup Drive  
Westboro, MA 01581  
Tel: 508-898-9220

320 Forbes Blvd  
Mansfield, MA 02048  
Tel: 508-822-9300

## Client Information

Client: Vertex

Address: One Congress St, 10<sup>th</sup> Fl  
Boston MA 02114

Phone: 781-917-5360

Email: bgibbons@vertexenergy.com  
ksolson@vertexenergy.com

Additional Project Information:

## Project Information

Project Name: East Boston

Project Location: MA

Project #: 43068

Project Manager: Bill Gibbons

ALPHA Quote #:

## Turn-Around Time

 Standard RUSH (only confirmed if pre-approved)

Date Due:

Date Rec'd in Lab:

02/06/17

ALPHA Job #: L1703745

## Report Information - Data Deliverables

 ADEX  EMAIL

## Billing Information

 Same as Client info  PO #:

## Regulatory Requirements &amp; Project Information Requirements

- Yes  No MA MCP Analytical Methods  Yes  No CT RCP Analytical Methods  
 Yes  No Matrix Spike Required on this SDG? (Required for MCP Inorganics)  
 Yes  No GW1 Standards (Info Required for Metals & EPH with Targets)  
 Yes  No NPDES RGP  
 Other State /Fed Program Criteria \_\_\_\_\_

ANALYSIS	Criteria												TOTAL # BOTTLES
	<input checked="" type="checkbox"/> VOC: <input checked="" type="checkbox"/> 8260	<input type="checkbox"/> 624	<input type="checkbox"/> 5242	<input checked="" type="checkbox"/> PAH	<input checked="" type="checkbox"/> 8270	<input type="checkbox"/> MCP 13	<input type="checkbox"/> MCP 14	<input type="checkbox"/> RCP 15	<input type="checkbox"/> PPI 3	<input type="checkbox"/> Ranges Only	<input type="checkbox"/> Ranges & Targets	<input type="checkbox"/> Ranges Only	
SVOC: <input type="checkbox"/> ABN	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
METALS: <input type="checkbox"/> RCRA5	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
EPH: <input type="checkbox"/> Ranges & Targets	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
TPH: <input type="checkbox"/> PCB	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
PCB: <input type="checkbox"/> Quant Only	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
PCB: <input type="checkbox"/> Fingerprint	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
PCB: <input type="checkbox"/> 8082	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
PCB: <input type="checkbox"/> Ignitability	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
PCB: <input type="checkbox"/> Cyanide & Sulfide Reactivity	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
PCB: <input type="checkbox"/> VPH Ranges Only	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

## SAMPLE INFO

- Filtration  
 Field  
 Lab to do

- Preservation  
 Lab to do

Sample Comments

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection		Sample Matrix	Sampler Initials	Criteria												TOTAL # BOTTLES
		Date	Time			X	X	X	X	X	X	X	X	X	X	X	X	
03745-01	VES-132 (2-3)	2/6/17	0800	S,1	KS	X	X	X	X	X	X	X	X	X	X	X	5	
02	VES-135 (0-2)		0930			X	X	X	X	X	X	X	X	X	X	X	5	
03	VES-133 (0-2)		1245										X				1	
04	VES-133 (5-7)		1300			X	X	X	X	X	X	X	X	X	X	X	5	
05	VES-129 (0-2)		1315			X	X	X	X	X	X	X	X	X	X	X	5	

Container Type	Preservative	Container Type	Preservative	Relinquished By:	Date/Time	Received By:	Date/Time	All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.				
P= Plastic A= Amber glass V= Vial G= Glass B= Bacteria cup C= Cube O= Other E= Encore D= BOD Bottle	A= None B= HCl C= HNO <sub>3</sub> D= H <sub>2</sub> SO <sub>4</sub> E= NaOH F= MeOH G= NaHSO <sub>4</sub> H= Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> I= Ascorbic Acid J= NH <sub>4</sub> Cl K= Zn Acetate O= Other	V	A	A	A	A	A	All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.				
		F/H <sub>2</sub> O	A	Karen	2/6/17 1510	Rob Maggio	2/6/17 1510	See reverse side.				

## Method Blank Summary Form 4

Client : Vertex Environmental Services, Inc.      Lab Number : L1703745  
Project Name : EAST BOSTON      Project Number : 43068  
Lab Sample ID : WG976794-5      Lab File ID : VC170209A06  
Instrument ID : CHARLIE  
Matrix : SOIL      Analysis Date : 02/09/17 09:53

Client Sample No.	Lab Sample ID	Analysis Date
WG976794-3LCS	WG976794-3	02/09/17 08:02
WG976794-4LCSD	WG976794-4	02/09/17 08:31
VES-132 (2-3)	L1703745-01	02/09/17 14:27
VES-135 (0-2)	L1703745-02	02/09/17 14:54

**Method Blank Summary  
Form 4**

Client	: Vertex Environmental Services, Inc.	Lab Number	: L1703745
Project Name	: EAST BOSTON	Project Number	: 43068
Lab Sample ID	: WG976906-5	Lab File ID	: V11170210A05
Instrument ID	: VOA111		
Matrix	: SOIL	Analysis Date	: 02/10/17 10:12

Client Sample No.	Lab Sample ID	Analysis Date
WG976906-3LCS	WG976906-3	02/10/17 08:30
WG976906-4LCSD	WG976906-4	02/10/17 08:56
VES-133 (5-7)	L1703745-04	02/10/17 11:28
VES-129 (0-2)	L1703745-05	02/10/17 11:54

**Continuing Calibration  
Form 7**

Client	: Vertex Environmental Services, Inc.	Lab Number	: L1703745
Project Name	: EAST BOSTON	Project Number	: 43068
Instrument ID	: CHARLIE	Calibration Date	: 02/09/17 08:02
Lab File ID	: VC170209A02	Init. Calib. Date(s)	: 01/25/17
Sample No	: WG976794-2	Init. Calib. Times	: 15:01 01/25/17 18:59
Channel	:		

Compound	Ave. RRF	RRF	Min RRF	%D	Max %D	Area%	Dev(min)
Fluorobenzene	1	1	-	0	20	59	0
Dichlorodifluoromethane	0.398	0.37	-	7	20	57	0
Chloromethane	0.333	0.324	-	2.7	20	61	0
Vinyl chloride	0.381	0.494	-	-29.7*	20	79	0
Bromomethane	20	31.276	-	-56.4*	20	79	0
Chloroethane	0.259	0.38	-	-46.7*	20	91	0
Trichlorofluoromethane	0.537	0.823	-	-53.3*	20	90	0
Ethyl ether	0.215	0.299	-	-39.1*	20	84	0
1,1-Dichloroethene	0.339	0.388	-	-14.5	20	71	0
Carbon disulfide	1.178	1.586	-	-34.6*	20	83	0
Methylene chloride	20	29.426	-	-47.1*	20	89	0
Acetone	20	20.941	-	-4.7	20	58	0
trans-1,2-Dichloroethene	0.382	0.452	-	-18.3	20	72	0
Methyl tert-butyl ether	1.127	1.289	-	-14.4	20	71	0
Diisopropyl ether	1.017	1.085	-	-6.7	20	67	0
1,1-Dichloroethane	0.655	0.75	-	-14.5	20	71	0
Ethyl tert-butyl ether	1.126	1.218	-	-8.2	20	68	0
cis-1,2-Dichloroethene	0.423	0.494	-	-16.8	20	71	0
2,2-Dichloropropane	0.56	0.568	-	-1.4	20	64	0
Bromochloromethane	0.206	0.248	-	-20.4*	20	71	0
Chloroform	0.681	0.784	-	-15.1	20	71	0
Carbon tetrachloride	0.523	0.522	-	0.2	20	62	0
Tetrahydrofuran	0.114	0.132	-	-15.8	20	71	0
Dibromofluoromethane	0.276	0.279	-	-1.1	20	60	0
1,1,1-Trichloroethane	0.609	0.685	-	-12.5	20	70	0
2-Butanone	0.158	0.171	-	-8.2	20	65	0
1,1-Dichloropropene	0.506	0.588	-	-16.2	20	71	0
Benzene	1.458	1.697	-	-16.4	20	71	0
tert-Amyl methyl ether	1.067	1.149	-	-7.7	20	67	0
1,2-Dichloroethane-d4	0.277	0.276	-	0.4	20	61	0
1,2-Dichloroethane	0.5	0.588	-	-17.6	20	73	0
Trichloroethene	0.411	0.477	-	-16.1	20	72	0
Dibromomethane	0.251	0.293	-	-16.7	20	71	0
1,2-Dichloropropane	0.371	0.422	-	-13.7	20	70	0
Bromodichloromethane	0.519	0.56	-	-7.9	20	67	0
1,4-Dioxane	1000	1320.982	-	-32.1*	20	66	0
cis-1,3-Dichloropropene	0.614	0.658	-	-7.2	20	65	0
Chlorobenzene-d5	1	1	-	0	20	66	0
Toluene-d8	1.244	1.169	-	6	20	62	0
Toluene	1.202	1.244	-	-3.5	20	71	0
4-Methyl-2-pentanone	0.185	0.193	-	-4.3	20	71	0
Tetrachloroethene	0.484	0.506	-	-4.5	20	70	0
trans-1,3-Dichloropropene	0.701	0.648	-	7.6	20	63	0
1,1,2-Trichloroethane	0.366	0.383	-	-4.6	20	71	0
Chlorodibromomethane	0.545	0.503	-	7.7	20	64	0

\* Value outside of QC limits.



**Continuing Calibration  
Form 7**

Client	: Vertex Environmental Services, Inc.	Lab Number	: L1703745		
Project Name	: EAST BOSTON	Project Number	: 43068		
Instrument ID	: CHARLIE	Calibration Date	: 02/09/17 08:02		
Lab File ID	: VC170209A02	Init. Calib. Date(s)	: 01/25/17		01/25/17
Sample No	: WG976794-2	Init. Calib. Times	: 15:01		18:59
Channel	:				

Compound	Ave. RRF	RRF	Min RRF	%D	Max %D	Area%	Dev(min)
1,3-Dichloropropane	0.727	0.759	-	-4.4	20	70	0
1,2-Dibromoethane	0.454	0.47	-	-3.5	20	70	0
2-Hexanone	0.345	0.326	-	5.5	20	67	0
Chlorobenzene	1.414	1.463	-	-3.5	20	70	0
Ethylbenzene	2.362	2.483	-	-5.1	20	72	0
1,1,1,2-Tetrachloroethane	0.507	0.454	-	10.5	20	62	0
p/m Xylene	0.914	0.976	-	-6.8	20	72	0
o Xylene	0.877	0.915	-	-4.3	20	70	0
Styrene	1.491	1.56	-	-4.6	20	71	0
1,4-Dichlorobenzene-d4	1	1	-	0	20	70	0
Bromoform	0.671	0.513	-	23.5*	20	57	0
Isopropylbenzene	4.756	4.708	-	1	20	72	0
4-Bromofluorobenzene	1.019	0.976	-	4.2	20	67	0
Bromobenzene	1.146	1.111	-	3.1	20	70	0
n-Propylbenzene	5.63	5.716	-	-1.5	20	73	0
1,1,2,2-Tetrachloroethane	1.232	1.241	-	-0.7	20	72	0
2-Chlorotoluene	3.421	3.431	-	-0.3	20	72	0
1,3,5-Trimethylbenzene	4.068	4.129	-	-1.5	20	73	0
1,2,3-Trichloropropane	0.957	1.009	-	-5.4	20	75	0
4-Chlorotoluene	3.456	3.448	-	0.2	20	72	0
tert-Butylbenzene	3.431	3.434	-	-0.1	20	73	0
1,2,4-Trimethylbenzene	4.109	4.112	-	-0.1	20	72	0
sec-Butylbenzene	5.224	5.357	-	-2.5	20	74	0
p-Isopropyltoluene	4.405	4.496	-	-2.1	20	74	0
1,3-Dichlorobenzene	2.254	2.215	-	1.7	20	72	0
1,4-Dichlorobenzene	2.254	2.245	-	0.4	20	72	0
n-Butylbenzene	4.073	4.259	-	-4.6	20	75	0
1,2-Dichlorobenzene	2.105	2.089	-	0.8	20	73	0
1,2-Dibromo-3-chloropropan	0.22	0.188	-	14.5	20	64	0
Hexachlorobutadiene	0.618	0.582	-	5.8	20	69	0
1,2,4-Trichlorobenzene	1.372	1.338	-	2.5	20	70	0
Naphthalene	3.987	3.938	-	1.2	20	74	0
1,2,3-Trichlorobenzene	1.291	1.233	-	4.5	20	70	0

\* Value outside of QC limits.



**Continuing Calibration  
Form 7**

Client	: Vertex Environmental Services, Inc.	Lab Number	: L1703745
Project Name	: EAST BOSTON	Project Number	: 43068
Instrument ID	: VOA111	Calibration Date	: 02/10/17 08:30
Lab File ID	: V11170210A01	Init. Calib. Date(s)	: 01/30/17
Sample No	: WG976906-2	Init. Calib. Times	: 21:39 01/31/17 00:38
Channel	:		

Compound	Ave. RRF	RRF	Min RRF	%D	Max %D	Area%	Dev(min)
Fluorobenzene	1	1	-	0	20	81	-.01
Dichlorodifluoromethane	0.292	0.261	-	10.6	20	73	0
Chloromethane	0.451	0.475	-	-5.3	20	85	0
Vinyl chloride	0.346	0.369	-	-6.6	20	87	0
Bromomethane	0.152	0.16	-	-5.3	20	87	0
Chloroethane	0.177	0.206	-	-16.4	20	87	0
Trichlorofluoromethane	0.361	0.371	-	-2.8	20	83	0
Ethyl ether	0.146	0.147	-	-0.7	20	82	0
1,1-Dichloroethene	0.199	0.206	-	-3.5	20	85	0
Carbon disulfide	0.765	0.826	-	-8	20	91	0
Freon-113	0.18	0.176	-	2.2	20	79	0
Acrolein	0.034	0.029	-	14.7	20	58	-.01
Methylene chloride	0.264	0.323	-	-22.3*	20	101	0
Acetone	0.106	0.108	-	-1.9	20	76	0
trans-1,2-Dichloroethene	0.234	0.244	-	-4.3	20	83	0
Methyl acetate	0.222	0.217	-	2.3	20	85	0
Methyl tert-butyl ether	0.756	0.764	-	-1.1	20	84	-.01
tert-Butyl alcohol	0.026	0.025	-	3.8	20	83	-.01
Diisopropyl ether	1.413	1.487	-	-5.2	20	86	0
1,1-Dichloroethane	0.565	0.597	-	-5.7	20	86	0
Halothane	0.14	0.143	-	-2.1	20	84	0
Acrylonitrile	0.105	0.108	-	-2.9	20	82	0
Ethyl tert-butyl ether	1.043	1.067	-	-2.3	20	85	0
Vinyl acetate	0.941	0.977	-	-3.8	20	85	-.01
cis-1,2-Dichloroethene	0.265	0.269	-	-1.5	20	82	0
2,2-Dichloropropane	0.39	0.426	-	-9.2	20	88	0
Bromochloromethane	0.114	0.114	-	0	20	80	-.01
Cyclohexane	0.523	0.529	-	-1.1	20	83	0
Chloroform	0.478	0.497	-	-4	20	84	-.01
Ethyl acetate	0.342	0.345	-	-0.9	20	84	-.01
Carbon tetrachloride	0.317	0.33	-	-4.1	20	84	0
Tetrahydrofuran	0.128	0.135	-	-5.5	20	86	-.01
Dibromofluoromethane	0.236	0.234	-	0.8	20	80	0
1,1,1-Trichloroethane	0.389	0.416	-	-6.9	20	85	0
2-Butanone	0.158	0.146	-	7.6	20	77	0
1,1-Dichloropropene	0.348	0.378	-	-8.6	20	87	-.01
Benzene	1.024	1.069	-	-4.4	20	85	-.01
tert-Amyl methyl ether	0.7	0.702	-	-0.3	20	82	-.01
1,2-Dichloroethane-d4	0.321	0.326	-	-1.6	20	83	-.01
1,2-Dichloroethane	0.45	0.472	-	-4.9	20	84	-.01
Methyl cyclohexane	0.357	0.355	-	0.6	20	81	-.01
Trichloroethene	0.257	0.272	-	-5.8	20	86	-.01
Dibromomethane	0.151	0.151	-	0	20	82	0
1,2-Dichloropropane	0.318	0.328	-	-3.1	20	83	-.01
2-Chloroethyl vinyl ether	0.161	0.162	-	-0.6	20	81	-.01

\* Value outside of QC limits.



**Continuing Calibration  
Form 7**

Client	: Vertex Environmental Services, Inc.	Lab Number	: L1703745
Project Name	: EAST BOSTON	Project Number	: 43068
Instrument ID	: VOA111	Calibration Date	: 02/10/17 08:30
Lab File ID	: V11170210A01	Init. Calib. Date(s)	: 01/30/17
Sample No	: WG976906-2	Init. Calib. Times	: 21:39 01/31/17 00:38
Channel	:		

Compound	Ave. RRF	RRF	Min RRF	%D	Max %D	Area%	Dev(min)
Bromodichloromethane	0.365	0.365	-	0	20	82	-.01
1,4-Dioxane	0.00225	0.00182	-	19.1	20	64	-.01
cis-1,3-Dichloropropene	0.432	0.438	-	-1.4	20	84	0
Chlorobenzene-d5	1	1	-	0	20	82	0
Toluene-d8	1.352	1.362	-	-0.7	20	82	0
Toluene	0.899	0.928	-	-3.2	20	85	0
4-Methyl-2-pentanone	0.145	0.133	-	8.3	20	80	0
Tetrachloroethene	0.327	0.335	-	-2.4	20	83	0
trans-1,3-Dichloropropene	0.548	0.551	-	-0.5	20	84	-.01
Ethyl methacrylate	20	17.779	-	11.1	20	80	-.01
1,1,2-Trichloroethane	0.261	0.268	-	-2.7	20	83	0
Chlorodibromomethane	0.335	0.326	-	2.7	20	80	-.01
1,3-Dichloropropane	0.562	0.579	-	-3	20	84	0
1,2-Dibromoethane	0.285	0.281	-	1.4	20	80	0
2-Hexanone	0.306	0.292	-	4.6	20	80	-.01
Chlorobenzene	0.972	0.978	-	-0.6	20	83	0
Ethylbenzene	1.74	1.823	-	-4.8	20	86	0
1,1,1,2-Tetrachloroethane	0.341	0.34	-	0.3	20	82	0
p/m Xylene	0.631	0.659	-	-4.4	20	85	0
o Xylene	0.603	0.618	-	-2.5	20	83	0
Styrene	1.018	1.037	-	-1.9	20	83	0
1,4-Dichlorobenzene-d4	1	1	-	0	20	82	0
Bromoform	0.412	0.386	-	6.3	20	77	0
Isopropylbenzene	3.309	3.485	-	-5.3	20	85	0
4-Bromofluorobenzene	1.064	1.095	-	-2.9	20	84	0
Bromobenzene	0.78	0.759	-	2.7	20	81	0
n-Propylbenzene	4.144	4.428	-	-6.9	20	86	0
1,4-Dichlorobutane	1.642	1.677	-	-2.1	20	85	0
1,1,2,2-Tetrachloroethane	0.783	0.778	-	0.6	20	81	0
4-Ethyltoluene	3.249	3.468	-	-6.7	20	86	0
2-Chlorotoluene	2.943	3.094	-	-5.1	20	86	0
1,3,5-Trimethylbenzene	2.832	2.987	-	-5.5	20	86	0
1,2,3-Trichloropropane	0.664	0.679	-	-2.3	20	84	0
trans-1,4-Dichloro-2-butene	0.327	0.341	-	-4.3	20	85	0
4-Chlorotoluene	2.607	2.752	-	-5.6	20	86	0
tert-Butylbenzene	2.294	2.399	-	-4.6	20	84	0
1,2,4-Trimethylbenzene	2.895	3.013	-	-4.1	20	84	0
sec-Butylbenzene	3.577	3.813	-	-6.6	20	86	0
p-Isopropyltoluene	2.913	3.101	-	-6.5	20	85	0
1,3-Dichlorobenzene	1.545	1.551	-	-0.4	20	82	0
1,4-Dichlorobenzene	1.555	1.566	-	-0.7	20	84	0
p-Diethylbenzene	1.703	1.824	-	-7.1	20	86	0
n-Butylbenzene	2.973	3.248	-	-9.2	20	90	0
1,2-Dichlorobenzene	1.448	1.424	-	1.7	20	81	0
1,2,4,5-Tetramethylbenzene	2.748	2.789	-	-1.5	20	83	0

\* Value outside of QC limits.



# Continuing Calibration

## Form 7

Client : Vertex Environmental Services, Inc.      Lab Number : L1703745  
 Project Name : EAST BOSTON      Project Number : 43068  
 Instrument ID : VOA111      Calibration Date : 02/10/17 08:30  
 Lab File ID : V11170210A01      Init. Calib. Date(s) : 01/30/17      01/31/17  
 Sample No : WG976906-2      Init. Calib. Times : 21:39      00:38  
 Channel :

Compound	Ave. RRF	RRF	Min RRF	%D	Max %D	Area%	Dev(min)
1,2-Dibromo-3-chloropropan	0.104	0.088	-	15.4	20	75	0
1,3,5-Trichlorobenzene	1.101	1.095	-	0.5	20	80	0
Hexachlorobutadiene	0.485	0.462	-	4.7	20	77	0
1,2,4-Trichlorobenzene	0.985	0.954	-	3.1	20	79	0
Naphthalene	2.073	1.989	-	4.1	20	79	0
1,2,3-Trichlorobenzene	0.892	0.845	-	5.3	20	77	0

---

\* Value outside of QC limits.



I:\Pest18\170211\18170211-01.d

Data File Name **18170211-01.d**  
 Data File Path **I:\Pest18\170211\**  
 Operator **PEST18:keg**  
 Date Acquired **2/11/2017 14:28**  
 Acq. Method File **PEST.M**  
 Sample Name **pem1817021101,42ee,,de**  
 Instrument Name **Pest 18**

Name	Ret Time	Response	
4,4'-DDT	4.79	490888526.9	% Breakdown
4,4'-DDE	4.13	799642.2	
4,4'-DDD	4.59	680046.514	0.30%
Endrin	4.52	249467030.4	% Breakdown
Endrin Aldehyde	4.99	1602293.112	
Endrin Ketone	5.49	3673965.552	2.07%
<b>Name #2</b>			
4,4'-DDT #2	5.42	246549903.35	% Breakdown
4,4'-DDE #2	4.77	743040.513	
4,4'-DDD #2	5.20	1317447.5	0.83%
Endrin #2	5.13	138569969.7	% Breakdown
Endrin Aldehyde #2	5.52	1465127.148	
Endrin Ketone #2	6.07	2051341.759	2.47%

wg96172-1,-2,-3

11703745-03



## ANALYTICAL REPORT

Lab Number:	L1703748
Client:	Vertex Environmental Services, Inc. 400 Libbey Pkwy Weymouth, MA 02184
ATTN:	Bill Gibbons
Phone:	(617) 830-1540
Project Name:	EAST BOSTON
Project Number:	43068
Report Date:	02/13/17

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*Certifications & Approvals:* MA (M-MA086), NH NELAP (2064), NJ NELAP (MA935), CT (PH-0574), IL (200077), ME (MA00086), MD (348), NH (2003), NY (1111-25700/666), PA (68-03671), RI (LA000065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #P330-14-00197).

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Eight Walkup Drive, Westborough, MA 01581-1019  
508-898-9220 (Fax) 508-898-9193 800-624-9220 - [www.alphalab.com](http://www.alphalab.com)



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703748  
**Report Date:** 02/13/17

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L1703748-01	VES-WEST	SOIL	EAST BOSTON, MA	02/06/17 13:55	02/06/17
L1703748-02	VES-EAST-1	SOIL	EAST BOSTON, MA	02/06/17 14:05	02/06/17
L1703748-03	VES-EAST-2	SOIL	EAST BOSTON, MA	02/06/17 14:15	02/06/17

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703748  
**Report Date:** 02/13/17

### MADEP MCP Response Action Analytical Report Certification

This form provides certifications for all samples performed by MCP methods. Please refer to the Sample Results and Container Information sections of this report for specification of MCP methods used for each analysis. The following questions pertain only to MCP Analytical Methods.

<b>An affirmative response to questions A through F is required for "Presumptive Certainty" status</b>		
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
B	Were the analytical method(s) and all associated QC requirements specified in the selected CAM protocol(s) followed?	YES
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
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
E a.	VPH, EPH, and APH Methods only: Was each method conducted without significant modification(s)? (Refer to the individual method(s) for a list of significant modifications).	YES
E b.	APH and TO-15 Methods only: Was the complete analyte list reported for each method?	N/A
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

<b>A response to questions G, H and I is required for "Presumptive Certainty" status</b>		
G	Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocol(s)?	NO
H	Were all QC performance standards specified in the CAM protocol(s) achieved?	NO
I	Were results reported for the complete analyte list specified in the selected CAM protocol(s)?	NO

**For any questions answered "No", please refer to the case narrative section on the following page(s).**

Please note that sample matrix information is located in the Sample Results section of this report.



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703748  
**Report Date:** 02/13/17

### Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively. When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. All specific QC information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated usability implications. Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances the specific failure is not narrated but noted in the associated QC table. The information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated usability implications.

Please see the associated ADEx data file for a comparison of laboratory reporting limits that were achieved with the regulatory Numerical Standards requested on the Chain of Custody.

#### HOLD POLICY

For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Client Service Representative and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Client Services at 800-624-9220 with any questions.

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### Case Narrative (continued)

#### MCP Related Narratives

Sample Receipt

In reference to question H:

A Matrix Spike was not submitted for the analysis of Total Metals.

#### Volatile Organics

In reference to question H:

The continuing calibration standard, associated with L1703748-01 through -03, is outside the acceptance criteria for several compounds; however, it is within overall method allowances. A copy of the continuing calibration standard is included as an addendum to this report.

#### VPH

In reference to question I:

All samples were analyzed for a subset of MCP analytes per the Chain of Custody.

#### EPH

In reference to question I:

All samples were analyzed for a subset of MCP analytes per the Chain of Custody.

#### Pesticides

A copy of the Degradation Standards for 4,4'-DDT and Endrin breakdown products is included as an addendum.

In reference to question G:

L1703748-01 through -03: One or more of the target analytes did not achieve the requested CAM reporting limits.

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**Case Narrative (continued)**

Total Metals

In reference to question I:

All samples were analyzed for a subset of MCP analytes per the Chain of Custody.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature:

 Michelle M. Morris

Title: Technical Director/Representative

Date: 02/13/17

# ORGANICS



# VOLATILES



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703748  
**Report Date:** 02/13/17

**SAMPLE RESULTS**

Lab ID: L1703748-01  
Client ID: VES-WEST  
Sample Location: EAST BOSTON, MA  
Matrix: Soil  
Analytical Method: 97,8260C  
Analytical Date: 02/09/17 16:17  
Analyst: TE  
Percent Solids: 91%

Date Collected: 02/06/17 13:55  
Date Received: 02/06/17  
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics by 8260/5035 - Westborough Lab</b>						
Methylene chloride	ND	ug/kg	8.8	--	--	1
1,1-Dichloroethane	ND	ug/kg	1.3	--	--	1
Chloroform	ND	ug/kg	1.3	--	--	1
Carbon tetrachloride	ND	ug/kg	0.88	--	--	1
1,2-Dichloropropane	ND	ug/kg	3.1	--	--	1
Dibromochloromethane	ND	ug/kg	0.88	--	--	1
1,1,2-Trichloroethane	ND	ug/kg	1.3	--	--	1
Tetrachloroethene	ND	ug/kg	0.88	--	--	1
Chlorobenzene	ND	ug/kg	0.88	--	--	1
Trichlorofluoromethane	ND	ug/kg	3.5	--	--	1
1,2-Dichloroethane	ND	ug/kg	0.88	--	--	1
1,1,1-Trichloroethane	ND	ug/kg	0.88	--	--	1
Bromodichloromethane	ND	ug/kg	0.88	--	--	1
trans-1,3-Dichloropropene	ND	ug/kg	0.88	--	--	1
cis-1,3-Dichloropropene	ND	ug/kg	0.88	--	--	1
1,3-Dichloropropene, Total	ND	ug/kg	0.88	--	--	1
1,1-Dichloropropene	ND	ug/kg	3.5	--	--	1
Bromoform	ND	ug/kg	3.5	--	--	1
1,1,2,2-Tetrachloroethane	ND	ug/kg	0.88	--	--	1
Benzene	ND	ug/kg	0.88	--	--	1
Toluene	ND	ug/kg	1.3	--	--	1
Ethylbenzene	ND	ug/kg	0.88	--	--	1
Chloromethane	ND	ug/kg	3.5	--	--	1
Bromomethane	ND	ug/kg	1.8	--	--	1
Vinyl chloride	ND	ug/kg	1.8	--	--	1
Chloroethane	ND	ug/kg	1.8	--	--	1
1,1-Dichloroethene	ND	ug/kg	0.88	--	--	1
trans-1,2-Dichloroethene	ND	ug/kg	1.3	--	--	1
Trichloroethene	ND	ug/kg	0.88	--	--	1
1,2-Dichlorobenzene	ND	ug/kg	3.5	--	--	1



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703748  
**Report Date:** 02/13/17

**SAMPLE RESULTS**

Lab ID:	L1703748-01	Date Collected:	02/06/17 13:55			
Client ID:	VES-WEST	Date Received:	02/06/17			
Sample Location:	EAST BOSTON, MA	Field Prep:	Not Specified			
Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics by 8260/5035 - Westborough Lab</b>						
1,3-Dichlorobenzene	ND	ug/kg	3.5	--	1	
1,4-Dichlorobenzene	ND	ug/kg	3.5	--	1	
Methyl tert butyl ether	ND	ug/kg	1.8	--	1	
p/m-Xylene	ND	ug/kg	1.8	--	1	
o-Xylene	ND	ug/kg	1.8	--	1	
Xylenes, Total	ND	ug/kg	1.8	--	1	
cis-1,2-Dichloroethene	ND	ug/kg	0.88	--	1	
1,2-Dichloroethene, Total	ND	ug/kg	0.88	--	1	
Dibromomethane	ND	ug/kg	3.5	--	1	
1,2,3-Trichloropropane	ND	ug/kg	3.5	--	1	
Styrene	ND	ug/kg	1.8	--	1	
Dichlorodifluoromethane	ND	ug/kg	8.8	--	1	
Acetone	ND	ug/kg	32	--	1	
Carbon disulfide	ND	ug/kg	3.5	--	1	
Methyl ethyl ketone	ND	ug/kg	8.8	--	1	
Methyl isobutyl ketone	ND	ug/kg	8.8	--	1	
2-Hexanone	ND	ug/kg	8.8	--	1	
Bromochloromethane	ND	ug/kg	3.5	--	1	
Tetrahydrofuran	ND	ug/kg	3.5	--	1	
2,2-Dichloropropane	ND	ug/kg	4.4	--	1	
1,2-Dibromoethane	ND	ug/kg	3.5	--	1	
1,3-Dichloropropane	ND	ug/kg	3.5	--	1	
1,1,1,2-Tetrachloroethane	ND	ug/kg	0.88	--	1	
Bromobenzene	ND	ug/kg	4.4	--	1	
n-Butylbenzene	ND	ug/kg	0.88	--	1	
sec-Butylbenzene	ND	ug/kg	0.88	--	1	
tert-Butylbenzene	ND	ug/kg	3.5	--	1	
o-Chlorotoluene	ND	ug/kg	3.5	--	1	
p-Chlorotoluene	ND	ug/kg	3.5	--	1	
1,2-Dibromo-3-chloropropane	ND	ug/kg	3.5	--	1	
Hexachlorobutadiene	ND	ug/kg	3.5	--	1	
Isopropylbenzene	ND	ug/kg	0.88	--	1	
p-Isopropyltoluene	ND	ug/kg	0.88	--	1	
Naphthalene	ND	ug/kg	3.5	--	1	
n-Propylbenzene	ND	ug/kg	0.88	--	1	
1,2,3-Trichlorobenzene	ND	ug/kg	3.5	--	1	
1,2,4-Trichlorobenzene	ND	ug/kg	3.5	--	1	
1,3,5-Trimethylbenzene	ND	ug/kg	3.5	--	1	
1,2,4-Trimethylbenzene	ND	ug/kg	3.5	--	1	



Project Name: EAST BOSTON

Lab Number: L1703748

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**SAMPLE RESULTS**

Lab ID: L1703748-01 Date Collected: 02/06/17 13:55  
 Client ID: VES-WEST Date Received: 02/06/17  
 Sample Location: EAST BOSTON, MA Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics by 8260/5035 - Westborough Lab						
Diethyl ether	ND	ug/kg	4.4	--	--	1
Diisopropyl Ether	ND	ug/kg	3.5	--	--	1
Ethyl-Tert-Butyl-Ether	ND	ug/kg	3.5	--	--	1
Tertiary-Amyl Methyl Ether	ND	ug/kg	3.5	--	--	1
1,4-Dioxane	ND	ug/kg	35	--	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	98		70-130
Toluene-d8	98		70-130
4-Bromofluorobenzene	102		70-130
Dibromofluoromethane	100		70-130

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703748  
**Report Date:** 02/13/17

**SAMPLE RESULTS**

Lab ID: L1703748-02  
Client ID: VES-EAST-1  
Sample Location: EAST BOSTON, MA  
Matrix: Soil  
Analytical Method: 97,8260C  
Analytical Date: 02/09/17 16:44  
Analyst: TE  
Percent Solids: 93%

Date Collected: 02/06/17 14:05  
Date Received: 02/06/17  
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics by 8260/5035 - Westborough Lab</b>						
Methylene chloride	ND	ug/kg	7.7	--	--	1
1,1-Dichloroethane	ND	ug/kg	1.2	--	--	1
Chloroform	ND	ug/kg	1.2	--	--	1
Carbon tetrachloride	ND	ug/kg	0.77	--	--	1
1,2-Dichloropropane	ND	ug/kg	2.7	--	--	1
Dibromochloromethane	ND	ug/kg	0.77	--	--	1
1,1,2-Trichloroethane	ND	ug/kg	1.2	--	--	1
Tetrachloroethene	ND	ug/kg	0.77	--	--	1
Chlorobenzene	ND	ug/kg	0.77	--	--	1
Trichlorofluoromethane	ND	ug/kg	3.1	--	--	1
1,2-Dichloroethane	ND	ug/kg	0.77	--	--	1
1,1,1-Trichloroethane	ND	ug/kg	0.77	--	--	1
Bromodichloromethane	ND	ug/kg	0.77	--	--	1
trans-1,3-Dichloropropene	ND	ug/kg	0.77	--	--	1
cis-1,3-Dichloropropene	ND	ug/kg	0.77	--	--	1
1,3-Dichloropropene, Total	ND	ug/kg	0.77	--	--	1
1,1-Dichloropropene	ND	ug/kg	3.1	--	--	1
Bromoform	ND	ug/kg	3.1	--	--	1
1,1,2,2-Tetrachloroethane	ND	ug/kg	0.77	--	--	1
Benzene	ND	ug/kg	0.77	--	--	1
Toluene	ND	ug/kg	1.2	--	--	1
Ethylbenzene	ND	ug/kg	0.77	--	--	1
Chloromethane	ND	ug/kg	3.1	--	--	1
Bromomethane	ND	ug/kg	1.5	--	--	1
Vinyl chloride	ND	ug/kg	1.5	--	--	1
Chloroethane	ND	ug/kg	1.5	--	--	1
1,1-Dichloroethene	ND	ug/kg	0.77	--	--	1
trans-1,2-Dichloroethene	ND	ug/kg	1.2	--	--	1
Trichloroethene	ND	ug/kg	0.77	--	--	1
1,2-Dichlorobenzene	ND	ug/kg	3.1	--	--	1



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703748  
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**SAMPLE RESULTS**

Lab ID:	L1703748-02	Date Collected:	02/06/17 14:05			
Client ID:	VES-EAST-1	Date Received:	02/06/17			
Sample Location:	EAST BOSTON, MA	Field Prep:	Not Specified			
Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics by 8260/5035 - Westborough Lab</b>						
1,3-Dichlorobenzene	ND	ug/kg	3.1	--	1	
1,4-Dichlorobenzene	ND	ug/kg	3.1	--	1	
Methyl tert butyl ether	ND	ug/kg	1.5	--	1	
p/m-Xylene	ND	ug/kg	1.5	--	1	
o-Xylene	ND	ug/kg	1.5	--	1	
Xylenes, Total	ND	ug/kg	1.5	--	1	
cis-1,2-Dichloroethene	ND	ug/kg	0.77	--	1	
1,2-Dichloroethene, Total	ND	ug/kg	0.77	--	1	
Dibromomethane	ND	ug/kg	3.1	--	1	
1,2,3-Trichloropropane	ND	ug/kg	3.1	--	1	
Styrene	ND	ug/kg	1.5	--	1	
Dichlorodifluoromethane	ND	ug/kg	7.7	--	1	
Acetone	ND	ug/kg	28	--	1	
Carbon disulfide	ND	ug/kg	3.1	--	1	
Methyl ethyl ketone	ND	ug/kg	7.7	--	1	
Methyl isobutyl ketone	ND	ug/kg	7.7	--	1	
2-Hexanone	ND	ug/kg	7.7	--	1	
Bromochloromethane	ND	ug/kg	3.1	--	1	
Tetrahydrofuran	ND	ug/kg	3.1	--	1	
2,2-Dichloropropane	ND	ug/kg	3.8	--	1	
1,2-Dibromoethane	ND	ug/kg	3.1	--	1	
1,3-Dichloropropane	ND	ug/kg	3.1	--	1	
1,1,1,2-Tetrachloroethane	ND	ug/kg	0.77	--	1	
Bromobenzene	ND	ug/kg	3.8	--	1	
n-Butylbenzene	ND	ug/kg	0.77	--	1	
sec-Butylbenzene	ND	ug/kg	0.77	--	1	
tert-Butylbenzene	ND	ug/kg	3.1	--	1	
o-Chlorotoluene	ND	ug/kg	3.1	--	1	
p-Chlorotoluene	ND	ug/kg	3.1	--	1	
1,2-Dibromo-3-chloropropane	ND	ug/kg	3.1	--	1	
Hexachlorobutadiene	ND	ug/kg	3.1	--	1	
Isopropylbenzene	ND	ug/kg	0.77	--	1	
p-Isopropyltoluene	ND	ug/kg	0.77	--	1	
Naphthalene	ND	ug/kg	3.1	--	1	
n-Propylbenzene	ND	ug/kg	0.77	--	1	
1,2,3-Trichlorobenzene	ND	ug/kg	3.1	--	1	
1,2,4-Trichlorobenzene	ND	ug/kg	3.1	--	1	
1,3,5-Trimethylbenzene	ND	ug/kg	3.1	--	1	
1,2,4-Trimethylbenzene	ND	ug/kg	3.1	--	1	



Project Name: EAST BOSTON

Lab Number: L1703748

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Report Date: 02/13/17

**SAMPLE RESULTS**

Lab ID:	L1703748-02	Date Collected:	02/06/17 14:05
Client ID:	VES-EAST-1	Date Received:	02/06/17
Sample Location:	EAST BOSTON, MA	Field Prep:	Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics by 8260/5035 - Westborough Lab						
Diethyl ether	ND	ug/kg	3.8	--	--	1
Diisopropyl Ether	ND	ug/kg	3.1	--	--	1
Ethyl-Tert-Butyl-Ether	ND	ug/kg	3.1	--	--	1
Tertiary-Amyl Methyl Ether	ND	ug/kg	3.1	--	--	1
1,4-Dioxane	ND	ug/kg	31	--	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	99		70-130
Toluene-d8	97		70-130
4-Bromofluorobenzene	107		70-130
Dibromofluoromethane	99		70-130

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703748  
**Report Date:** 02/13/17

**SAMPLE RESULTS**

Lab ID: L1703748-03  
Client ID: VES-EAST-2  
Sample Location: EAST BOSTON, MA  
Matrix: Soil  
Analytical Method: 97,8260C  
Analytical Date: 02/09/17 17:11  
Analyst: TE  
Percent Solids: 90%

Date Collected: 02/06/17 14:15  
Date Received: 02/06/17  
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics by 8260/5035 - Westborough Lab</b>						
Methylene chloride	ND	ug/kg	12	--	--	1
1,1-Dichloroethane	ND	ug/kg	1.7	--	--	1
Chloroform	ND	ug/kg	1.7	--	--	1
Carbon tetrachloride	ND	ug/kg	1.2	--	--	1
1,2-Dichloropropane	ND	ug/kg	4.0	--	--	1
Dibromochloromethane	ND	ug/kg	1.2	--	--	1
1,1,2-Trichloroethane	ND	ug/kg	1.7	--	--	1
Tetrachloroethene	ND	ug/kg	1.2	--	--	1
Chlorobenzene	ND	ug/kg	1.2	--	--	1
Trichlorofluoromethane	ND	ug/kg	4.6	--	--	1
1,2-Dichloroethane	ND	ug/kg	1.2	--	--	1
1,1,1-Trichloroethane	ND	ug/kg	1.2	--	--	1
Bromodichloromethane	ND	ug/kg	1.2	--	--	1
trans-1,3-Dichloropropene	ND	ug/kg	1.2	--	--	1
cis-1,3-Dichloropropene	ND	ug/kg	1.2	--	--	1
1,3-Dichloropropene, Total	ND	ug/kg	1.2	--	--	1
1,1-Dichloropropene	ND	ug/kg	4.6	--	--	1
Bromoform	ND	ug/kg	4.6	--	--	1
1,1,2,2-Tetrachloroethane	ND	ug/kg	1.2	--	--	1
Benzene	ND	ug/kg	1.2	--	--	1
Toluene	ND	ug/kg	1.7	--	--	1
Ethylbenzene	ND	ug/kg	1.2	--	--	1
Chloromethane	ND	ug/kg	4.6	--	--	1
Bromomethane	ND	ug/kg	2.3	--	--	1
Vinyl chloride	ND	ug/kg	2.3	--	--	1
Chloroethane	ND	ug/kg	2.3	--	--	1
1,1-Dichloroethene	ND	ug/kg	1.2	--	--	1
trans-1,2-Dichloroethene	ND	ug/kg	1.7	--	--	1
Trichloroethene	ND	ug/kg	1.2	--	--	1
1,2-Dichlorobenzene	ND	ug/kg	4.6	--	--	1



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**Project Number:** 43068

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**Report Date:** 02/13/17

**SAMPLE RESULTS**

Lab ID:	L1703748-03	Date Collected:	02/06/17 14:15			
Client ID:	VES-EAST-2	Date Received:	02/06/17			
Sample Location:	EAST BOSTON, MA	Field Prep:	Not Specified			
Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics by 8260/5035 - Westborough Lab</b>						
1,3-Dichlorobenzene	ND	ug/kg	4.6	--	1	
1,4-Dichlorobenzene	ND	ug/kg	4.6	--	1	
Methyl tert butyl ether	ND	ug/kg	2.3	--	1	
p/m-Xylene	ND	ug/kg	2.3	--	1	
o-Xylene	ND	ug/kg	2.3	--	1	
Xylenes, Total	ND	ug/kg	2.3	--	1	
cis-1,2-Dichloroethene	ND	ug/kg	1.2	--	1	
1,2-Dichloroethene, Total	ND	ug/kg	1.2	--	1	
Dibromomethane	ND	ug/kg	4.6	--	1	
1,2,3-Trichloropropane	ND	ug/kg	4.6	--	1	
Styrene	ND	ug/kg	2.3	--	1	
Dichlorodifluoromethane	ND	ug/kg	12	--	1	
Acetone	ND	ug/kg	42	--	1	
Carbon disulfide	ND	ug/kg	4.6	--	1	
Methyl ethyl ketone	ND	ug/kg	12	--	1	
Methyl isobutyl ketone	ND	ug/kg	12	--	1	
2-Hexanone	ND	ug/kg	12	--	1	
Bromochloromethane	ND	ug/kg	4.6	--	1	
Tetrahydrofuran	ND	ug/kg	4.6	--	1	
2,2-Dichloropropane	ND	ug/kg	5.8	--	1	
1,2-Dibromoethane	ND	ug/kg	4.6	--	1	
1,3-Dichloropropane	ND	ug/kg	4.6	--	1	
1,1,1,2-Tetrachloroethane	ND	ug/kg	1.2	--	1	
Bromobenzene	ND	ug/kg	5.8	--	1	
n-Butylbenzene	ND	ug/kg	1.2	--	1	
sec-Butylbenzene	ND	ug/kg	1.2	--	1	
tert-Butylbenzene	ND	ug/kg	4.6	--	1	
o-Chlorotoluene	ND	ug/kg	4.6	--	1	
p-Chlorotoluene	ND	ug/kg	4.6	--	1	
1,2-Dibromo-3-chloropropane	ND	ug/kg	4.6	--	1	
Hexachlorobutadiene	ND	ug/kg	4.6	--	1	
Isopropylbenzene	ND	ug/kg	1.2	--	1	
p-Isopropyltoluene	ND	ug/kg	1.2	--	1	
Naphthalene	ND	ug/kg	4.6	--	1	
n-Propylbenzene	ND	ug/kg	1.2	--	1	
1,2,3-Trichlorobenzene	ND	ug/kg	4.6	--	1	
1,2,4-Trichlorobenzene	ND	ug/kg	4.6	--	1	
1,3,5-Trimethylbenzene	ND	ug/kg	4.6	--	1	
1,2,4-Trimethylbenzene	ND	ug/kg	4.6	--	1	



Project Name: EAST BOSTON

Lab Number: L1703748

Project Number: 43068

Report Date: 02/13/17

**SAMPLE RESULTS**

Lab ID: L1703748-03 Date Collected: 02/06/17 14:15  
 Client ID: VES-EAST-2 Date Received: 02/06/17  
 Sample Location: EAST BOSTON, MA Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics by 8260/5035 - Westborough Lab						
Diethyl ether	ND	ug/kg	5.8	--	--	1
Diisopropyl Ether	ND	ug/kg	4.6	--	--	1
Ethyl-Tert-Butyl-Ether	ND	ug/kg	4.6	--	--	1
Tertiary-Amyl Methyl Ether	ND	ug/kg	4.6	--	--	1
1,4-Dioxane	ND	ug/kg	46	--	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	99		70-130
Toluene-d8	93		70-130
4-Bromofluorobenzene	95		70-130
Dibromofluoromethane	99		70-130

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703748  
**Report Date:** 02/13/17

### Method Blank Analysis Batch Quality Control

Analytical Method: 97,8260C  
Analytical Date: 02/09/17 09:53  
Analyst: TE

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics by 8260/5035 - Westborough Lab for sample(s):	01-03	Batch:	WG976794-5		
Methylene chloride	ND		ug/kg	10	--
1,1-Dichloroethane	ND		ug/kg	1.5	--
Chloroform	ND		ug/kg	1.5	--
Carbon tetrachloride	ND		ug/kg	1.0	--
1,2-Dichloropropane	ND		ug/kg	3.5	--
Dibromochloromethane	ND		ug/kg	1.0	--
1,1,2-Trichloroethane	ND		ug/kg	1.5	--
Tetrachloroethene	ND		ug/kg	1.0	--
Chlorobenzene	ND		ug/kg	1.0	--
Trichlorofluoromethane	ND		ug/kg	4.0	--
1,2-Dichloroethane	ND		ug/kg	1.0	--
1,1,1-Trichloroethane	ND		ug/kg	1.0	--
Bromodichloromethane	ND		ug/kg	1.0	--
trans-1,3-Dichloropropene	ND		ug/kg	1.0	--
cis-1,3-Dichloropropene	ND		ug/kg	1.0	--
1,3-Dichloropropene, Total	ND		ug/kg	1.0	--
1,1-Dichloropropene	ND		ug/kg	4.0	--
Bromoform	ND		ug/kg	4.0	--
1,1,2,2-Tetrachloroethane	ND		ug/kg	1.0	--
Benzene	ND		ug/kg	1.0	--
Toluene	ND		ug/kg	1.5	--
Ethylbenzene	ND		ug/kg	1.0	--
Chloromethane	ND		ug/kg	4.0	--
Bromomethane	ND		ug/kg	2.0	--
Vinyl chloride	ND		ug/kg	2.0	--
Chloroethane	ND		ug/kg	2.0	--
1,1-Dichloroethene	ND		ug/kg	1.0	--
trans-1,2-Dichloroethene	ND		ug/kg	1.5	--
Trichloroethene	ND		ug/kg	1.0	--



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703748  
**Report Date:** 02/13/17

**Method Blank Analysis**  
**Batch Quality Control**

Analytical Method: 97,8260C  
Analytical Date: 02/09/17 09:53  
Analyst: TE

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics by 8260/5035 - Westborough Lab for sample(s):	01-03	Batch:	WG976794-5		
1,2-Dichlorobenzene	ND	ug/kg	4.0	--	
1,3-Dichlorobenzene	ND	ug/kg	4.0	--	
1,4-Dichlorobenzene	ND	ug/kg	4.0	--	
Methyl tert butyl ether	ND	ug/kg	2.0	--	
p/m-Xylene	ND	ug/kg	2.0	--	
o-Xylene	ND	ug/kg	2.0	--	
Xylenes, Total	ND	ug/kg	2.0	--	
cis-1,2-Dichloroethene	ND	ug/kg	1.0	--	
1,2-Dichloroethene, Total	ND	ug/kg	1.0	--	
Dibromomethane	ND	ug/kg	4.0	--	
1,2,3-Trichloropropane	ND	ug/kg	4.0	--	
Styrene	ND	ug/kg	2.0	--	
Dichlorodifluoromethane	ND	ug/kg	10	--	
Acetone	ND	ug/kg	36	--	
Carbon disulfide	ND	ug/kg	4.0	--	
Methyl ethyl ketone	ND	ug/kg	10	--	
Methyl isobutyl ketone	ND	ug/kg	10	--	
2-Hexanone	ND	ug/kg	10	--	
Bromochloromethane	ND	ug/kg	4.0	--	
Tetrahydrofuran	ND	ug/kg	4.0	--	
2,2-Dichloropropane	ND	ug/kg	5.0	--	
1,2-Dibromoethane	ND	ug/kg	4.0	--	
1,3-Dichloropropane	ND	ug/kg	4.0	--	
1,1,1,2-Tetrachloroethane	ND	ug/kg	1.0	--	
Bromobenzene	ND	ug/kg	5.0	--	
n-Butylbenzene	ND	ug/kg	1.0	--	
sec-Butylbenzene	ND	ug/kg	1.0	--	
tert-Butylbenzene	ND	ug/kg	4.0	--	
o-Chlorotoluene	ND	ug/kg	4.0	--	



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703748  
**Report Date:** 02/13/17

### Method Blank Analysis Batch Quality Control

Analytical Method: 97,8260C  
Analytical Date: 02/09/17 09:53  
Analyst: TE

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics by 8260/5035 - Westborough Lab for sample(s):	01-03	Batch:	WG976794-5		
p-Chlorotoluene	ND		ug/kg	4.0	--
1,2-Dibromo-3-chloropropane	ND		ug/kg	4.0	--
Hexachlorobutadiene	ND		ug/kg	4.0	--
Isopropylbenzene	ND		ug/kg	1.0	--
p-Isopropyltoluene	ND		ug/kg	1.0	--
Naphthalene	ND		ug/kg	4.0	--
n-Propylbenzene	ND		ug/kg	1.0	--
1,2,3-Trichlorobenzene	ND		ug/kg	4.0	--
1,2,4-Trichlorobenzene	ND		ug/kg	4.0	--
1,3,5-Trimethylbenzene	ND		ug/kg	4.0	--
1,2,4-Trimethylbenzene	ND		ug/kg	4.0	--
Diethyl ether	ND		ug/kg	5.0	--
Diisopropyl Ether	ND		ug/kg	4.0	--
Ethyl-Tert-Butyl-Ether	ND		ug/kg	4.0	--
Tertiary-Amyl Methyl Ether	ND		ug/kg	4.0	--
1,4-Dioxane	ND		ug/kg	40	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	97		70-130
Toluene-d8	93		70-130
4-Bromofluorobenzene	98		70-130
Dibromofluoromethane	92		70-130

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703748  
**Report Date:** 02/13/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics by 8260/5035 - Westborough Lab Associated sample(s): 01-03 Batch: WG976794-3 WG976794-4								
Methylene chloride	147	Q	115		70-130	24	Q	20
1,1-Dichloroethane	114		106		70-130	7		20
Chloroform	115		108		70-130	6		20
Carbon tetrachloride	100		92		70-130	8		20
1,2-Dichloropropane	114		109		70-130	4		20
Dibromochloromethane	92		92		70-130	0		20
1,1,2-Trichloroethane	105		105		70-130	0		20
Tetrachloroethene	105		95		70-130	10		20
Chlorobenzene	103		98		70-130	5		20
Trichlorofluoromethane	153	Q	138	Q	70-130	10		20
1,2-Dichloroethane	118		115		70-130	3		20
1,1,1-Trichloroethane	112		103		70-130	8		20
Bromodichloromethane	108		107		70-130	1		20
trans-1,3-Dichloropropene	92		92		70-130	0		20
cis-1,3-Dichloropropene	107		104		70-130	3		20
1,1-Dichloropropene	116		106		70-130	9		20
Bromoform	76		82		70-130	8		20
1,1,2,2-Tetrachloroethane	101		103		70-130	2		20
Benzene	116		109		70-130	6		20
Toluene	104		96		70-130	8		20
Ethylbenzene	105		97		70-130	8		20

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703748  
**Report Date:** 02/13/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics by 8260/5035 - Westborough Lab Associated sample(s): 01-03 Batch: WG976794-3 WG976794-4								
Chloromethane	97		88		70-130	10		20
Bromomethane	156	Q	142	Q	70-130	9		20
Vinyl chloride	130		115		70-130	12		20
Chloroethane	147	Q	132	Q	70-130	11		20
1,1-Dichloroethene	114		105		70-130	8		20
trans-1,2-Dichloroethene	118		108		70-130	9		20
Trichloroethene	116		107		70-130	8		20
1,2-Dichlorobenzene	99		94		70-130	5		20
1,3-Dichlorobenzene	98		93		70-130	5		20
1,4-Dichlorobenzene	100		93		70-130	7		20
Methyl tert butyl ether	114		114		70-130	0		20
p/m-Xylene	107		99		70-130	8		20
o-Xylene	104		98		70-130	6		20
cis-1,2-Dichloroethene	117		110		70-130	6		20
Dibromomethane	117		117		70-130	0		20
1,2,3-Trichloropropane	105		108		70-130	3		20
Styrene	105		100		70-130	5		20
Dichlorodifluoromethane	93		82		70-130	13		20
Acetone	105		101		70-130	4		20
Carbon disulfide	135	Q	113		70-130	18		20
Methyl ethyl ketone	108		110		70-130	2		20

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703748  
**Report Date:** 02/13/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics by 8260/5035 - Westborough Lab Associated sample(s): 01-03 Batch: WG976794-3 WG976794-4								
Methyl isobutyl ketone	104		111		70-130	7		20
2-Hexanone	94		99		70-130	5		20
Bromochloromethane	120		117		70-130	3		20
Tetrahydrofuran	116		119		70-130	3		20
2,2-Dichloropropane	101		94		70-130	7		20
1,2-Dibromoethane	103		106		70-130	3		20
1,3-Dichloropropane	104		103		70-130	1		20
1,1,1,2-Tetrachloroethane	90		88		70-130	2		20
Bromobenzene	97		93		70-130	4		20
n-Butylbenzene	104		95		70-130	9		20
sec-Butylbenzene	102		93		70-130	9		20
tert-Butylbenzene	100		92		70-130	8		20
o-Chlorotoluene	100		79		70-130	23	Q	20
p-Chlorotoluene	100		94		70-130	6		20
1,2-Dibromo-3-chloropropane	86		90		70-130	5		20
Hexachlorobutadiene	94		86		70-130	9		20
Isopropylbenzene	99		92		70-130	7		20
p-Isopropyltoluene	102		93		70-130	9		20
Naphthalene	99		100		70-130	1		20
n-Propylbenzene	102		94		70-130	8		20
1,2,3-Trichlorobenzene	96		93		70-130	3		20

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703748  
**Report Date:** 02/13/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics by 8260/5035 - Westborough Lab Associated sample(s): 01-03 Batch: WG976794-3 WG976794-4								
1,2,4-Trichlorobenzene	98		92		70-130	6		20
1,3,5-Trimethylbenzene	101		94		70-130	7		20
1,2,4-Trimethylbenzene	100		95		70-130	5		20
Diethyl ether	139	Q	121		70-130	14		20
Diisopropyl Ether	107		102		70-130	5		20
Ethyl-Tert-Butyl-Ether	108		106		70-130	2		20
Tertiary-Amyl Methyl Ether	108		105		70-130	3		20
1,4-Dioxane	132	Q	142	Q	70-130	7		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	100		101		70-130
Toluene-d8	94		93		70-130
4-Bromofluorobenzene	96		96		70-130
Dibromofluoromethane	101		101		70-130

# **SEMIVOLATILES**



**Project Name:** EAST BOSTON  
**Project Number:** 43068

Serial\_No:02131715:19

**Lab Number:** L1703748  
**Report Date:** 02/13/17

### SAMPLE RESULTS

Lab ID: L1703748-01  
Client ID: VES-WEST  
Sample Location: EAST BOSTON, MA  
Matrix: Soil  
Analytical Method: 97,8270D  
Analytical Date: 02/11/17 05:17  
Analyst: CB  
Percent Solids: 91%

Date Collected: 02/06/17 13:55  
Date Received: 02/06/17  
Field Prep: Not Specified  
Extraction Method: EPA 3546  
Extraction Date: 02/08/17 16:03

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Semivolatile Organics - Westborough Lab						
Acenaphthene	ND	ug/kg	140	--	--	1
1,2,4-Trichlorobenzene	ND	ug/kg	180	--	--	1
Hexachlorobenzene	ND	ug/kg	110	--	--	1
Bis(2-chloroethyl)ether	ND	ug/kg	160	--	--	1
2-Chloronaphthalene	ND	ug/kg	180	--	--	1
1,2-Dichlorobenzene	ND	ug/kg	180	--	--	1
1,3-Dichlorobenzene	ND	ug/kg	180	--	--	1
1,4-Dichlorobenzene	ND	ug/kg	180	--	--	1
3,3'-Dichlorobenzidine	ND	ug/kg	180	--	--	1
2,4-Dinitrotoluene	ND	ug/kg	180	--	--	1
2,6-Dinitrotoluene	ND	ug/kg	180	--	--	1
Azobenzene	ND	ug/kg	180	--	--	1
Fluoranthene	280	ug/kg	110	--	--	1
4-Bromophenyl phenyl ether	ND	ug/kg	180	--	--	1
Bis(2-chloroisopropyl)ether	ND	ug/kg	220	--	--	1
Bis(2-chloroethoxy)methane	ND	ug/kg	190	--	--	1
Hexachlorobutadiene	ND	ug/kg	180	--	--	1
Hexachloroethane	ND	ug/kg	140	--	--	1
Isophorone	ND	ug/kg	160	--	--	1
Naphthalene	ND	ug/kg	180	--	--	1
Nitrobenzene	ND	ug/kg	160	--	--	1
Bis(2-ethylhexyl)phthalate	ND	ug/kg	180	--	--	1
Butyl benzyl phthalate	ND	ug/kg	180	--	--	1
Di-n-butylphthalate	ND	ug/kg	180	--	--	1
Di-n-octylphthalate	ND	ug/kg	180	--	--	1
Diethyl phthalate	ND	ug/kg	180	--	--	1
Dimethyl phthalate	ND	ug/kg	180	--	--	1
Benzo(a)anthracene	120	ug/kg	110	--	--	1
Benzo(a)pyrene	140	ug/kg	140	--	--	1
Benzo(b)fluoranthene	230	ug/kg	110	--	--	1



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703748  
**Report Date:** 02/13/17

**SAMPLE RESULTS**

Lab ID:	L1703748-01	Date Collected:	02/06/17 13:55
Client ID:	VES-WEST	Date Received:	02/06/17
Sample Location:	EAST BOSTON, MA	Field Prep:	Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Semivolatile Organics - Westborough Lab</b>						
Benzo(k)fluoranthene	ND	ug/kg	110	--	--	1
Chrysene	180	ug/kg	110	--	--	1
Acenaphthylene	ND	ug/kg	140	--	--	1
Anthracene	ND	ug/kg	110	--	--	1
Benzo(ghi)perylene	ND	ug/kg	140	--	--	1
Fluorene	ND	ug/kg	180	--	--	1
Phenanthrene	110	ug/kg	110	--	--	1
Dibenzo(a,h)anthracene	ND	ug/kg	110	--	--	1
Indeno(1,2,3-cd)pyrene	ND	ug/kg	140	--	--	1
Pyrene	230	ug/kg	110	--	--	1
Aniline	ND	ug/kg	220	--	--	1
4-Chloroaniline	ND	ug/kg	180	--	--	1
Dibenzofuran	ND	ug/kg	180	--	--	1
2-Methylnaphthalene	ND	ug/kg	220	--	--	1
Acetophenone	ND	ug/kg	180	--	--	1
2,4,6-Trichlorophenol	ND	ug/kg	110	--	--	1
2-Chlorophenol	ND	ug/kg	180	--	--	1
2,4-Dichlorophenol	ND	ug/kg	160	--	--	1
2,4-Dimethylphenol	ND	ug/kg	180	--	--	1
2-Nitrophenol	ND	ug/kg	390	--	--	1
4-Nitrophenol	ND	ug/kg	250	--	--	1
2,4-Dinitrophenol	ND	ug/kg	870	--	--	1
Pentachlorophenol	ND	ug/kg	360	--	--	1
Phenol	ND	ug/kg	180	--	--	1
2-Methylphenol	ND	ug/kg	180	--	--	1
3-Methylphenol/4-Methylphenol	ND	ug/kg	260	--	--	1
2,4,5-Trichlorophenol	ND	ug/kg	180	--	--	1
Pyridine	ND	ug/kg	190	--	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	62		30-130
Phenol-d6	65		30-130
Nitrobenzene-d5	76		30-130
2-Fluorobiphenyl	67		30-130
2,4,6-Tribromophenol	71		30-130
4-Terphenyl-d14	68		30-130



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703748  
**Report Date:** 02/13/17

**SAMPLE RESULTS**

Lab ID: L1703748-02  
Client ID: VES-EAST-1  
Sample Location: EAST BOSTON, MA  
Matrix: Soil  
Analytical Method: 97,8270D  
Analytical Date: 02/11/17 05:43  
Analyst: CB  
Percent Solids: 93%

Date Collected: 02/06/17 14:05  
Date Received: 02/06/17  
Field Prep: Not Specified  
Extraction Method: EPA 3546  
Extraction Date: 02/08/17 16:03

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Semivolatile Organics - Westborough Lab</b>						
Acenaphthene	200	ug/kg	140	--	--	1
1,2,4-Trichlorobenzene	ND	ug/kg	180	--	--	1
Hexachlorobenzene	ND	ug/kg	110	--	--	1
Bis(2-chloroethyl)ether	ND	ug/kg	160	--	--	1
2-Chloronaphthalene	ND	ug/kg	180	--	--	1
1,2-Dichlorobenzene	ND	ug/kg	180	--	--	1
1,3-Dichlorobenzene	ND	ug/kg	180	--	--	1
1,4-Dichlorobenzene	ND	ug/kg	180	--	--	1
3,3'-Dichlorobenzidine	ND	ug/kg	180	--	--	1
2,4-Dinitrotoluene	ND	ug/kg	180	--	--	1
2,6-Dinitrotoluene	ND	ug/kg	180	--	--	1
Azobenzene	ND	ug/kg	180	--	--	1
Fluoranthene	4800	ug/kg	110	--	--	1
4-Bromophenyl phenyl ether	ND	ug/kg	180	--	--	1
Bis(2-chloroisopropyl)ether	ND	ug/kg	210	--	--	1
Bis(2-chloroethoxy)methane	ND	ug/kg	190	--	--	1
Hexachlorobutadiene	ND	ug/kg	180	--	--	1
Hexachloroethane	ND	ug/kg	140	--	--	1
Isophorone	ND	ug/kg	160	--	--	1
Naphthalene	ND	ug/kg	180	--	--	1
Nitrobenzene	ND	ug/kg	160	--	--	1
Bis(2-ethylhexyl)phthalate	ND	ug/kg	180	--	--	1
Butyl benzyl phthalate	ND	ug/kg	180	--	--	1
Di-n-butylphthalate	ND	ug/kg	180	--	--	1
Di-n-octylphthalate	ND	ug/kg	180	--	--	1
Diethyl phthalate	ND	ug/kg	180	--	--	1
Dimethyl phthalate	ND	ug/kg	180	--	--	1
Benzo(a)anthracene	2600	ug/kg	110	--	--	1
Benzo(a)pyrene	2400	ug/kg	140	--	--	1
Benzo(b)fluoranthene	3200	ug/kg	110	--	--	1



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703748  
**Report Date:** 02/13/17

**SAMPLE RESULTS**

Lab ID:	L1703748-02	Date Collected:	02/06/17 14:05
Client ID:	VES-EAST-1	Date Received:	02/06/17
Sample Location:	EAST BOSTON, MA	Field Prep:	Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Semivolatile Organics - Westborough Lab</b>						
Benzo(k)fluoranthene	1100	ug/kg	110	--	--	1
Chrysene	2700	ug/kg	110	--	--	1
Acenaphthylene	ND	ug/kg	140	--	--	1
Anthracene	570	ug/kg	110	--	--	1
Benzo(ghi)perylene	1400	ug/kg	140	--	--	1
Fluorene	ND	ug/kg	180	--	--	1
Phenanthrene	3300	ug/kg	110	--	--	1
Dibenzo(a,h)anthracene	390	ug/kg	110	--	--	1
Indeno(1,2,3-cd)pyrene	1500	ug/kg	140	--	--	1
Pyrene	4300	ug/kg	110	--	--	1
Aniline	ND	ug/kg	210	--	--	1
4-Chloroaniline	ND	ug/kg	180	--	--	1
Dibenzofuran	ND	ug/kg	180	--	--	1
2-Methylnaphthalene	ND	ug/kg	210	--	--	1
Acetophenone	ND	ug/kg	180	--	--	1
2,4,6-Trichlorophenol	ND	ug/kg	110	--	--	1
2-Chlorophenol	ND	ug/kg	180	--	--	1
2,4-Dichlorophenol	ND	ug/kg	160	--	--	1
2,4-Dimethylphenol	ND	ug/kg	180	--	--	1
2-Nitrophenol	ND	ug/kg	390	--	--	1
4-Nitrophenol	ND	ug/kg	250	--	--	1
2,4-Dinitrophenol	ND	ug/kg	860	--	--	1
Pentachlorophenol	ND	ug/kg	360	--	--	1
Phenol	ND	ug/kg	180	--	--	1
2-Methylphenol	ND	ug/kg	180	--	--	1
3-Methylphenol/4-Methylphenol	ND	ug/kg	260	--	--	1
2,4,5-Trichlorophenol	ND	ug/kg	180	--	--	1
Pyridine	ND	ug/kg	190	--	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	76		30-130
Phenol-d6	81		30-130
Nitrobenzene-d5	88		30-130
2-Fluorobiphenyl	81		30-130
2,4,6-Tribromophenol	85		30-130
4-Terphenyl-d14	81		30-130

**Project Name:** EAST BOSTON  
**Project Number:** 43068

Serial\_No:02131715:19

**Lab Number:** L1703748  
**Report Date:** 02/13/17

### SAMPLE RESULTS

Lab ID: L1703748-03  
Client ID: VES-EAST-2  
Sample Location: EAST BOSTON, MA  
Matrix: Soil  
Analytical Method: 97,8270D  
Analytical Date: 02/11/17 06:09  
Analyst: CB  
Percent Solids: 90%

Date Collected: 02/06/17 14:15  
Date Received: 02/06/17  
Field Prep: Not Specified  
Extraction Method: EPA 3546  
Extraction Date: 02/08/17 16:03

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Semivolatile Organics - Westborough Lab						
Acenaphthene	ND	ug/kg	150	--	--	1
1,2,4-Trichlorobenzene	ND	ug/kg	180	--	--	1
Hexachlorobenzene	ND	ug/kg	110	--	--	1
Bis(2-chloroethyl)ether	ND	ug/kg	160	--	--	1
2-Chloronaphthalene	ND	ug/kg	180	--	--	1
1,2-Dichlorobenzene	ND	ug/kg	180	--	--	1
1,3-Dichlorobenzene	ND	ug/kg	180	--	--	1
1,4-Dichlorobenzene	ND	ug/kg	180	--	--	1
3,3'-Dichlorobenzidine	ND	ug/kg	180	--	--	1
2,4-Dinitrotoluene	ND	ug/kg	180	--	--	1
2,6-Dinitrotoluene	ND	ug/kg	180	--	--	1
Azobenzene	ND	ug/kg	180	--	--	1
Fluoranthene	280	ug/kg	110	--	--	1
4-Bromophenyl phenyl ether	ND	ug/kg	180	--	--	1
Bis(2-chloroisopropyl)ether	ND	ug/kg	220	--	--	1
Bis(2-chloroethoxy)methane	ND	ug/kg	200	--	--	1
Hexachlorobutadiene	ND	ug/kg	180	--	--	1
Hexachloroethane	ND	ug/kg	150	--	--	1
Isophorone	ND	ug/kg	160	--	--	1
Naphthalene	ND	ug/kg	180	--	--	1
Nitrobenzene	ND	ug/kg	160	--	--	1
Bis(2-ethylhexyl)phthalate	ND	ug/kg	180	--	--	1
Butyl benzyl phthalate	ND	ug/kg	180	--	--	1
Di-n-butylphthalate	ND	ug/kg	180	--	--	1
Di-n-octylphthalate	ND	ug/kg	180	--	--	1
Diethyl phthalate	ND	ug/kg	180	--	--	1
Dimethyl phthalate	ND	ug/kg	180	--	--	1
Benzo(a)anthracene	170	ug/kg	110	--	--	1
Benzo(a)pyrene	170	ug/kg	150	--	--	1
Benzo(b)fluoranthene	220	ug/kg	110	--	--	1



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703748  
**Report Date:** 02/13/17

**SAMPLE RESULTS**

Lab ID:	L1703748-03	Date Collected:	02/06/17 14:15			
Client ID:	VES-EAST-2	Date Received:	02/06/17			
Sample Location:	EAST BOSTON, MA	Field Prep:	Not Specified			
Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Semivolatile Organics - Westborough Lab</b>						
Benzo(k)fluoranthene	ND	ug/kg	110	--	--	1
Chrysene	170	ug/kg	110	--	--	1
Acenaphthylene	ND	ug/kg	150	--	--	1
Anthracene	ND	ug/kg	110	--	--	1
Benzo(ghi)perylene	ND	ug/kg	150	--	--	1
Fluorene	ND	ug/kg	180	--	--	1
Phenanthrene	160	ug/kg	110	--	--	1
Dibenzo(a,h)anthracene	ND	ug/kg	110	--	--	1
Indeno(1,2,3-cd)pyrene	ND	ug/kg	150	--	--	1
Pyrene	280	ug/kg	110	--	--	1
Aniline	ND	ug/kg	220	--	--	1
4-Chloroaniline	ND	ug/kg	180	--	--	1
Dibenzofuran	ND	ug/kg	180	--	--	1
2-Methylnaphthalene	ND	ug/kg	220	--	--	1
Acetophenone	ND	ug/kg	180	--	--	1
2,4,6-Trichlorophenol	ND	ug/kg	110	--	--	1
2-Chlorophenol	ND	ug/kg	180	--	--	1
2,4-Dichlorophenol	ND	ug/kg	160	--	--	1
2,4-Dimethylphenol	ND	ug/kg	180	--	--	1
2-Nitrophenol	ND	ug/kg	400	--	--	1
4-Nitrophenol	ND	ug/kg	260	--	--	1
2,4-Dinitrophenol	ND	ug/kg	880	--	--	1
Pentachlorophenol	ND	ug/kg	370	--	--	1
Phenol	ND	ug/kg	180	--	--	1
2-Methylphenol	ND	ug/kg	180	--	--	1
3-Methylphenol/4-Methylphenol	ND	ug/kg	260	--	--	1
2,4,5-Trichlorophenol	ND	ug/kg	180	--	--	1
Pyridine	ND	ug/kg	200	--	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	77		30-130
Phenol-d6	84		30-130
Nitrobenzene-d5	90		30-130
2-Fluorobiphenyl	84		30-130
2,4,6-Tribromophenol	89		30-130
4-Terphenyl-d14	79		30-130

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703748  
**Report Date:** 02/13/17

### Method Blank Analysis Batch Quality Control

Analytical Method: 97,8270D  
Analytical Date: 02/11/17 02:17  
Analyst: CB

Extraction Method: EPA 3546  
Extraction Date: 02/08/17 16:03

Parameter	Result	Qualifier	Units	RL	MDL
MCP Semivolatile Organics - Westborough Lab for sample(s): 01-03 Batch: WG976440-1					
Acenaphthene	ND		ug/kg	130	--
1,2,4-Trichlorobenzene	ND		ug/kg	160	--
Hexachlorobenzene	ND		ug/kg	98	--
Bis(2-chloroethyl)ether	ND		ug/kg	150	--
2-Chloronaphthalene	ND		ug/kg	160	--
1,2-Dichlorobenzene	ND		ug/kg	160	--
1,3-Dichlorobenzene	ND		ug/kg	160	--
1,4-Dichlorobenzene	ND		ug/kg	160	--
3,3'-Dichlorobenzidine	ND		ug/kg	160	--
2,4-Dinitrotoluene	ND		ug/kg	160	--
2,6-Dinitrotoluene	ND		ug/kg	160	--
Azobenzene	ND		ug/kg	160	--
Fluoranthene	ND		ug/kg	98	--
4-Bromophenyl phenyl ether	ND		ug/kg	160	--
Bis(2-chloroisopropyl)ether	ND		ug/kg	200	--
Bis(2-chloroethoxy)methane	ND		ug/kg	180	--
Hexachlorobutadiene	ND		ug/kg	160	--
Hexachloroethane	ND		ug/kg	130	--
Isophorone	ND		ug/kg	150	--
Naphthalene	ND		ug/kg	160	--
Nitrobenzene	ND		ug/kg	150	--
Bis(2-ethylhexyl)phthalate	ND		ug/kg	160	--
Butyl benzyl phthalate	ND		ug/kg	160	--
Di-n-butylphthalate	ND		ug/kg	160	--
Di-n-octylphthalate	ND		ug/kg	160	--
Diethyl phthalate	ND		ug/kg	160	--
Dimethyl phthalate	ND		ug/kg	160	--
Benzo(a)anthracene	ND		ug/kg	98	--
Benzo(a)pyrene	ND		ug/kg	130	--



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703748  
**Report Date:** 02/13/17

### Method Blank Analysis Batch Quality Control

Analytical Method: 97,8270D  
Analytical Date: 02/11/17 02:17  
Analyst: CB

Extraction Method: EPA 3546  
Extraction Date: 02/08/17 16:03

Parameter	Result	Qualifier	Units	RL	MDL
MCP Semivolatile Organics - Westborough Lab for sample(s): 01-03 Batch: WG976440-1					
Benzo(b)fluoranthene	ND		ug/kg	98	--
Benzo(k)fluoranthene	ND		ug/kg	98	--
Chrysene	ND		ug/kg	98	--
Acenaphthylene	ND		ug/kg	130	--
Anthracene	ND		ug/kg	98	--
Benzo(ghi)perylene	ND		ug/kg	130	--
Fluorene	ND		ug/kg	160	--
Phenanthrene	ND		ug/kg	98	--
Dibenzo(a,h)anthracene	ND		ug/kg	98	--
Indeno(1,2,3-cd)pyrene	ND		ug/kg	130	--
Pyrene	ND		ug/kg	98	--
Aniline	ND		ug/kg	200	--
4-Chloroaniline	ND		ug/kg	160	--
Dibenzofuran	ND		ug/kg	160	--
2-Methylnaphthalene	ND		ug/kg	200	--
Acetophenone	ND		ug/kg	160	--
2,4,6-Trichlorophenol	ND		ug/kg	98	--
2-Chlorophenol	ND		ug/kg	160	--
2,4-Dichlorophenol	ND		ug/kg	150	--
2,4-Dimethylphenol	ND		ug/kg	160	--
2-Nitrophenol	ND		ug/kg	350	--
4-Nitrophenol	ND		ug/kg	230	--
2,4-Dinitrophenol	ND		ug/kg	780	--
Pentachlorophenol	ND		ug/kg	330	--
Phenol	ND		ug/kg	160	--
2-Methylphenol	ND		ug/kg	160	--
3-Methylphenol/4-Methylphenol	ND		ug/kg	240	--
2,4,5-Trichlorophenol	ND		ug/kg	160	--
Pyridine	ND		ug/kg	180	--



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703748  
**Report Date:** 02/13/17

### **Method Blank Analysis**

#### **Batch Quality Control**

Analytical Method: 97,8270D  
Analytical Date: 02/11/17 02:17  
Analyst: CB

Extraction Method: EPA 3546  
Extraction Date: 02/08/17 16:03

Parameter	Result	Qualifier	Units	RL	MDL
MCP Semivolatile Organics - Westborough Lab for sample(s): 01-03 Batch: WG976440-1					

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	78		30-130
Phenol-d6	80		30-130
Nitrobenzene-d5	77		30-130
2-Fluorobiphenyl	75		30-130
2,4,6-Tribromophenol	62		30-130
4-Terphenyl-d14	82		30-130

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703748  
**Report Date:** 02/13/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Semivolatile Organics - Westborough Lab Associated sample(s): 01-03 Batch: WG976440-2 WG976440-3								
Acenaphthene	72		76		40-140	5		30
1,2,4-Trichlorobenzene	71		74		40-140	4		30
Hexachlorobenzene	75		76		40-140	1		30
Bis(2-chloroethyl)ether	74		78		40-140	5		30
2-Chloronaphthalene	72		76		40-140	5		30
1,2-Dichlorobenzene	72		74		40-140	3		30
1,3-Dichlorobenzene	70		73		40-140	4		30
1,4-Dichlorobenzene	70		72		40-140	3		30
3,3'-Dichlorobenzidine	38	Q	40		40-140	5		30
2,4-Dinitrotoluene	78		82		40-140	5		30
2,6-Dinitrotoluene	83		90		40-140	8		30
Azobenzene	78		81		40-140	4		30
Fluoranthene	76		81		40-140	6		30
4-Bromophenyl phenyl ether	74		77		40-140	4		30
Bis(2-chloroisopropyl)ether	76		80		40-140	5		30
Bis(2-chloroethoxy)methane	74		78		40-140	5		30
Hexachlorobutadiene	72		75		40-140	4		30
Hexachloroethane	71		73		40-140	3		30
Isophorone	73		77		40-140	5		30
Naphthalene	72		75		40-140	4		30
Nitrobenzene	78		84		40-140	7		30

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703748  
**Report Date:** 02/13/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Semivolatile Organics - Westborough Lab Associated sample(s): 01-03 Batch: WG976440-2 WG976440-3								
Bis(2-ethylhexyl)phthalate	78		83		40-140	6		30
Butyl benzyl phthalate	77		80		40-140	4		30
Di-n-butylphthalate	78		82		40-140	5		30
Di-n-octylphthalate	75		81		40-140	8		30
Diethyl phthalate	74		78		40-140	5		30
Dimethyl phthalate	73		78		40-140	7		30
Benzo(a)anthracene	73		78		40-140	7		30
Benzo(a)pyrene	71		76		40-140	7		30
Benzo(b)fluoranthene	72		77		40-140	7		30
Benzo(k)fluoranthene	72		77		40-140	7		30
Chrysene	72		76		40-140	5		30
Acenaphthylene	76		81		40-140	6		30
Anthracene	75		80		40-140	6		30
Benzo(ghi)perylene	72		78		40-140	8		30
Fluorene	74		77		40-140	4		30
Phenanthrene	73		77		40-140	5		30
Dibenz(a,h)anthracene	72		77		40-140	7		30
Indeno(1,2,3-cd)pyrene	71		76		40-140	7		30
Pyrene	75		79		40-140	5		30
Aniline	38	Q	37	Q	40-140	3		30
4-Chloroaniline	68		72		40-140	6		30

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703748  
**Report Date:** 02/13/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Semivolatile Organics - Westborough Lab Associated sample(s): 01-03 Batch: WG976440-2 WG976440-3								
1-Methylnaphthalene <sup>1</sup>	74		78		40-140	5		30
Dibenzofuran	73		76		40-140	4		30
2-Methylnaphthalene	72		76		40-140	5		30
Acetophenone	76		80		40-140	5		30
n-Nitrosodimethylamine	76		79		22-100	4		30
2,4,6-Trichlorophenol	76		82		30-130	8		30
2-Chlorophenol	75		80		30-130	6		30
2,4-Dichlorophenol	75		80		30-130	6		30
2,4-Dimethylphenol	84		89		30-130	6		30
2-Nitrophenol	73		80		30-130	9		30
4-Nitrophenol	84		88		30-130	5		30
2,4-Dinitrophenol	62		55		30-130	12		30
Pentachlorophenol	57		58		30-130	2		30
Phenol	75		79		30-130	5		30
2-Methylphenol	78		83		30-130	6		30
3-Methylphenol/4-Methylphenol	78		84		30-130	7		30
2,4,5-Trichlorophenol	74		81		30-130	9		30
Pyridine	63		68		30-130	8		30
4-Chlorophenyl phenyl ether	74		77		40-140	4		30
Hexachlorocyclopentadiene	68		70		40-140	3		30
NitrosoDiPhenylAmine(NDPA)/DPA	75		79		40-140	5		30

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703748  
**Report Date:** 02/13/17

<b>Parameter</b>	<i>LCS</i> <i>%Recovery</i>	<i>Qual</i>	<i>LCSD</i> <i>%Recovery</i>	<i>Qual</i>	<i>%Recovery</i> <i>Limits</i>	<i>RPD</i>	<i>Qual</i>	<i>RPD</i> <i>Limits</i>
MCP Semivolatile Organics - Westborough Lab Associated sample(s): 01-03 Batch: WG976440-2 WG976440-3								
n-Nitrosodi-n-propylamine	75		79		40-140	5		30
2-Nitroaniline	78		86		40-140	10		30
3-Nitroaniline	75		80		40-140	6		30
4-Nitroaniline	75		80		40-140	6		30
P-Chloro-M-Cresol	78		84		30-130	7		30
4,6-Dinitro-o-cresol	74		78		30-130	5		30
Carbazole	75		80		40-140	6		30

<b>Surrogate</b>	<i>LCS</i> <i>%Recovery</i>	<i>Qual</i>	<i>LCSD</i> <i>%Recovery</i>	<i>Qual</i>	<b>Acceptance Criteria</b>
					30-130
2-Fluorophenol	76		79		30-130
Phenol-d6	76		80		30-130
Nitrobenzene-d5	74		78		30-130
2-Fluorobiphenyl	70		74		30-130
2,4,6-Tribromophenol	74		77		30-130
4-Terphenyl-d14	75		78		30-130

# **PETROLEUM HYDROCARBONS**



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703748  
**Report Date:** 02/13/17

**SAMPLE RESULTS**

Lab ID:	L1703748-01	Date Collected:	02/06/17 13:55
Client ID:	VES-WEST	Date Received:	02/06/17
Sample Location:	EAST BOSTON, MA	Field Prep:	Not Specified
Matrix:	Soil		
Analytical Method:	100,VPH-04-1.1		
Analytical Date:	02/10/17 19:12		
Analyst:	KD		
Percent Solids:	91%		

**Quality Control Information**

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>Volatile Petroleum Hydrocarbons - Westborough Lab</b>						
C5-C8 Aliphatics	ND		mg/kg	2.66	--	1
C9-C12 Aliphatics	ND		mg/kg	2.66	--	1
C9-C10 Aromatics	ND		mg/kg	2.66	--	1
C5-C8 Aliphatics, Adjusted	ND		mg/kg	2.66	--	1
C9-C12 Aliphatics, Adjusted	ND		mg/kg	2.66	--	1
Surrogate	% Recovery	Qualifier	Acceptance Criteria			
2,5-Dibromotoluene-PID	94		70-130			
2,5-Dibromotoluene-FID	97		70-130			

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703748  
**Report Date:** 02/13/17

**SAMPLE RESULTS**

Lab ID:	L1703748-01	Date Collected:	02/06/17 13:55
Client ID:	VES-WEST	Date Received:	02/06/17
Sample Location:	EAST BOSTON, MA	Field Prep:	Not Specified
Matrix:	Soil	Extraction Method:	EPA 3546
Analytical Method:	98,EPH-04-1.1	Extraction Date:	02/08/17 17:28
Analytical Date:	02/10/17 16:42	Cleanup Method1:	EPH-04-1
Analyst:	EK	Cleanup Date1:	02/10/17
Percent Solids:	91%		

**Quality Control Information**

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>Extractable Petroleum Hydrocarbons - Westborough Lab</b>						
C9-C18 Aliphatics	ND		mg/kg	7.06	--	1
C19-C36 Aliphatics	66.1		mg/kg	7.06	--	1
C11-C22 Aromatics	51.6		mg/kg	7.06	--	1
C11-C22 Aromatics, Adjusted	51.6		mg/kg	7.06	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Chloro-Octadecane	44		40-140
o-Terphenyl	69		40-140
2-Fluorobiphenyl	84		40-140
2-Bromonaphthalene	86		40-140

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703748  
**Report Date:** 02/13/17

### SAMPLE RESULTS

Lab ID:	L1703748-02	Date Collected:	02/06/17 14:05
Client ID:	VES-EAST-1	Date Received:	02/06/17
Sample Location:	EAST BOSTON, MA	Field Prep:	Not Specified
Matrix:	Soil		
Analytical Method:	100,VPH-04-1.1		
Analytical Date:	02/10/17 19:52		
Analyst:	KD		
Percent Solids:	93%		

### Quality Control Information

Condition of sample received:	Satisfactory
Sample Temperature upon receipt:	Received on Ice
Were samples received in methanol?	Yes (Covering the Soil)
Methanol ratio:	1:1 +/- 25%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>Volatile Petroleum Hydrocarbons - Westborough Lab</b>						
C5-C8 Aliphatics	ND		mg/kg	2.61	--	1
C9-C12 Aliphatics	ND		mg/kg	2.61	--	1
C9-C10 Aromatics	ND		mg/kg	2.61	--	1
C5-C8 Aliphatics, Adjusted	ND		mg/kg	2.61	--	1
C9-C12 Aliphatics, Adjusted	ND		mg/kg	2.61	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2,5-Dibromotoluene-PID	105		70-130
2,5-Dibromotoluene-FID	107		70-130

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703748  
**Report Date:** 02/13/17

### SAMPLE RESULTS

Lab ID:	L1703748-02	Date Collected:	02/06/17 14:05
Client ID:	VES-EAST-1	Date Received:	02/06/17
Sample Location:	EAST BOSTON, MA	Field Prep:	Not Specified
Matrix:	Soil	Extraction Method:	EPA 3546
Analytical Method:	98,EPH-04-1.1	Extraction Date:	02/08/17 17:28
Analytical Date:	02/10/17 17:14	Cleanup Method1:	EPH-04-1
Analyst:	EK	Cleanup Date1:	02/10/17
Percent Solids:	93%		

### Quality Control Information

Condition of sample received:	Satisfactory
Sample Temperature upon receipt:	Received on Ice
Sample Extraction method:	Extracted Per the Method

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>Extractable Petroleum Hydrocarbons - Westborough Lab</b>						
C9-C18 Aliphatics	ND		mg/kg	6.87	--	1
C19-C36 Aliphatics	49.7		mg/kg	6.87	--	1
C11-C22 Aromatics	51.2		mg/kg	6.87	--	1
C11-C22 Aromatics, Adjusted	43.5		mg/kg	6.87	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Chloro-Octadecane	57		40-140
o-Terphenyl	71		40-140
2-Fluorobiphenyl	79		40-140
2-Bromonaphthalene	82		40-140

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703748  
**Report Date:** 02/13/17

### SAMPLE RESULTS

Lab ID:	L1703748-03	Date Collected:	02/06/17 14:15
Client ID:	VES-EAST-2	Date Received:	02/06/17
Sample Location:	EAST BOSTON, MA	Field Prep:	Not Specified
Matrix:	Soil		
Analytical Method:	100,VPH-04-1.1		
Analytical Date:	02/10/17 20:32		
Analyst:	KD		
Percent Solids:	90%		

### Quality Control Information

Condition of sample received:	Satisfactory
Sample Temperature upon receipt:	Received on Ice
Were samples received in methanol?	Yes (Covering the Soil)
Methanol ratio:	1:1.3

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>Volatile Petroleum Hydrocarbons - Westborough Lab</b>						
C5-C8 Aliphatics	ND		mg/kg	2.62	--	1
C9-C12 Aliphatics	ND		mg/kg	2.62	--	1
C9-C10 Aromatics	ND		mg/kg	2.62	--	1
C5-C8 Aliphatics, Adjusted	ND		mg/kg	2.62	--	1
C9-C12 Aliphatics, Adjusted	ND		mg/kg	2.62	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2,5-Dibromotoluene-PID	100		70-130
2,5-Dibromotoluene-FID	103		70-130

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703748  
**Report Date:** 02/13/17

### SAMPLE RESULTS

Lab ID:	L1703748-03	Date Collected:	02/06/17 14:15
Client ID:	VES-EAST-2	Date Received:	02/06/17
Sample Location:	EAST BOSTON, MA	Field Prep:	Not Specified
Matrix:	Soil	Extraction Method:	EPA 3546
Analytical Method:	98,EPH-04-1.1	Extraction Date:	02/08/17 17:28
Analytical Date:	02/10/17 17:45	Cleanup Method1:	EPH-04-1
Analyst:	EK	Cleanup Date1:	02/10/17
Percent Solids:	90%		

### Quality Control Information

Condition of sample received:	Satisfactory
Sample Temperature upon receipt:	Received on Ice
Sample Extraction method:	Extracted Per the Method

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>Extractable Petroleum Hydrocarbons - Westborough Lab</b>						
C9-C18 Aliphatics	ND		mg/kg	7.28	--	1
C19-C36 Aliphatics	15.8		mg/kg	7.28	--	1
C11-C22 Aromatics	20.3		mg/kg	7.28	--	1
C11-C22 Aromatics, Adjusted	20.3		mg/kg	7.28	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Chloro-Octadecane	54		40-140
o-Terphenyl	78		40-140
2-Fluorobiphenyl	81		40-140
2-Bromonaphthalene	84		40-140

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703748  
**Report Date:** 02/13/17

### Method Blank Analysis Batch Quality Control

Analytical Method: 98,EPH-04-1.1  
Analytical Date: 02/10/17 13:03  
Analyst: EK

Extraction Method: EPA 3546  
Extraction Date: 02/08/17 17:28  
Cleanup Method: EPH-04-1  
Cleanup Date: 02/10/17

Parameter	Result	Qualifier	Units	RL	MDL
Extractable Petroleum Hydrocarbons - Westborough Lab for sample(s):	01-03			Batch:	WG976461-1
C9-C18 Aliphatics	ND		mg/kg	6.44	--
C19-C36 Aliphatics	ND		mg/kg	6.44	--
C11-C22 Aromatics	ND		mg/kg	6.44	--
C11-C22 Aromatics, Adjusted	ND		mg/kg	6.44	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Chloro-Octadecane	62		40-140
o-Terphenyl	74		40-140
2-Fluorobiphenyl	86		40-140
2-Bromonaphthalene	87		40-140

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703748  
**Report Date:** 02/13/17

**Method Blank Analysis**  
**Batch Quality Control**

Analytical Method: 100,VPH-04-1.1  
Analytical Date: 02/10/17 13:22  
Analyst: JM

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Petroleum Hydrocarbons - Westborough Lab for sample(s):	01-03			Batch:	WG977166-4
C5-C8 Aliphatics	ND		mg/kg	2.67	--
C9-C12 Aliphatics	ND		mg/kg	2.67	--
C9-C10 Aromatics	ND		mg/kg	2.67	--
C5-C8 Aliphatics, Adjusted	ND		mg/kg	2.67	--
C9-C12 Aliphatics, Adjusted	ND		mg/kg	2.67	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2,5-Dibromotoluene-PID	104		70-130
2,5-Dibromotoluene-FID	104		70-130

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703748  
**Report Date:** 02/13/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Extractable Petroleum Hydrocarbons - Westborough Lab Associated sample(s): 01-03 Batch: WG976461-2 WG976461-3								
C9-C18 Aliphatics	49		48		40-140	2		25
C19-C36 Aliphatics	59		56		40-140	5		25
C11-C22 Aromatics	67		71		40-140	6		25
Naphthalene	52		60		40-140	14		25
2-Methylnaphthalene	54		60		40-140	11		25
Acenaphthylene	54		60		40-140	11		25
Acenaphthene	57		62		40-140	8		25
Fluorene	61		65		40-140	6		25
Phenanthrene	64		68		40-140	6		25
Anthracene	68		71		40-140	4		25
Fluoranthene	67		71		40-140	6		25
Pyrene	68		72		40-140	6		25
Benzo(a)anthracene	66		70		40-140	6		25
Chrysene	68		72		40-140	6		25
Benzo(b)fluoranthene	68		71		40-140	4		25
Benzo(k)fluoranthene	73		77		40-140	5		25
Benzo(a)pyrene	62		66		40-140	6		25
Indeno(1,2,3-cd)Pyrene	67		71		40-140	6		25
Dibenzo(a,h)anthracene	65		68		40-140	5		25
Benzo(ghi)perylene	63		66		40-140	5		25
Nonane (C9)	41		41		30-140	0		25

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703748  
**Report Date:** 02/13/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Extractable Petroleum Hydrocarbons - Westborough Lab Associated sample(s): 01-03 Batch: WG976461-2 WG976461-3								
Decane (C10)	45		46		40-140	2		25
Dodecane (C12)	46		47		40-140	2		25
Tetradecane (C14)	48		47		40-140	2		25
Hexadecane (C16)	51		50		40-140	2		25
Octadecane (C18)	56		54		40-140	4		25
Nonadecane (C19)	56		53		40-140	6		25
Eicosane (C20)	57		54		40-140	5		25
Docosane (C22)	57		55		40-140	4		25
Tetracosane (C24)	57		54		40-140	5		25
Hexacosane (C26)	57		54		40-140	5		25
Octacosane (C28)	57		54		40-140	5		25
Triacontane (C30)	57		54		40-140	5		25
Hexatriacontane (C36)	59		54		40-140	9		25

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Chloro-Octadecane	50		53		40-140
o-Terphenyl	81		83		40-140
2-Fluorobiphenyl	73		75		40-140
2-Bromonaphthalene	76		78		40-140
% Naphthalene Breakthrough	0		0		
% 2-Methylnaphthalene Breakthrough	0		0		

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703748  
**Report Date:** 02/13/17

<b>Parameter</b>	<i>LCS</i> <b>%Recovery</b>	<i>LCS</i> <b>%Recovery</b>	<i>%Recovery</i> <b>Limits</b>	<i>RPD</i>	<i>RPD</i> <b>Limits</b>
	<b>Qual</b>	<b>Qual</b>	<b>Limits</b>	<b>Qual</b>	
Volatile Petroleum Hydrocarbons - Westborough Lab Associated sample(s): 01-03 Batch: WG977166-2 WG977166-3					
C5-C8 Aliphatics	100	100	70-130	0	25
C9-C12 Aliphatics	100	101	70-130	1	25
C9-C10 Aromatics	100	101	70-130	1	25
Benzene	97	99	70-130	2	25
Toluene	98	99	70-130	1	25
Ethylbenzene	98	99	70-130	0	25
p/m-Xylene	100	100	70-130	0	25
o-Xylene	100	100	70-130	0	25
Methyl tert butyl ether	98	107	70-130	8	25
Naphthalene	105	113	70-130	7	25
1,2,4-Trimethylbenzene	100	101	70-130	1	25
Pentane	97	96	70-130	1	25
2-Methylpentane	100	99	70-130	1	25
2,2,4-Trimethylpentane	102	101	70-130	1	25
n-Nonane	101	101	30-130	0	25
n-Decane	100	100	70-130	0	25
n-Butylcyclohexane	100	102	70-130	2	25

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703748  
**Report Date:** 02/13/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
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Volatile Petroleum Hydrocarbons - Westborough Lab Associated sample(s): 01-03 Batch: WG977166-2 WG977166-3

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2,5-Dibromotoluene-PID	102		104		70-130
2,5-Dibromotoluene-FID	98		102		70-130

**PCBS**



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703748  
**Report Date:** 02/13/17

**SAMPLE RESULTS**

Lab ID: L1703748-01  
Client ID: VES-WEST  
Sample Location: EAST BOSTON, MA  
Matrix: Soil  
Analytical Method: 97,8082A  
Analytical Date: 02/09/17 05:58  
Analyst: JA  
Percent Solids: 91%

Date Collected: 02/06/17 13:55  
Date Received: 02/06/17  
Field Prep: Not Specified  
Extraction Method: EPA 3540C  
Extraction Date: 02/08/17 00:43  
Cleanup Method: EPA 3665A  
Cleanup Date: 02/09/17  
Cleanup Method: EPA 3660B  
Cleanup Date: 02/09/17

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
<b>MCP Polychlorinated Biphenyls - Westborough Lab</b>							
Aroclor 1016	ND		ug/kg	35.2	--	1	A
Aroclor 1221	ND		ug/kg	35.2	--	1	A
Aroclor 1232	ND		ug/kg	35.2	--	1	A
Aroclor 1242	ND		ug/kg	35.2	--	1	A
Aroclor 1248	ND		ug/kg	35.2	--	1	A
Aroclor 1254	ND		ug/kg	35.2	--	1	A
Aroclor 1260	ND		ug/kg	35.2	--	1	A
Aroclor 1262	ND		ug/kg	35.2	--	1	A
Aroclor 1268	ND		ug/kg	35.2	--	1	A
PCBs, Total	ND		ug/kg	35.2	--	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	62		30-150	A
Decachlorobiphenyl	35		30-150	A
2,4,5,6-Tetrachloro-m-xylene	61		30-150	B
Decachlorobiphenyl	47		30-150	B

Project Name: EAST BOSTON

Lab Number: L1703748

Project Number: 43068

Report Date: 02/13/17

**SAMPLE RESULTS**

Lab ID: L1703748-02  
 Client ID: VES-EAST-1  
 Sample Location: EAST BOSTON, MA  
 Matrix: Soil  
 Analytical Method: 97,8082A  
 Analytical Date: 02/09/17 06:10  
 Analyst: JA  
 Percent Solids: 93%

Date Collected: 02/06/17 14:05  
 Date Received: 02/06/17  
 Field Prep: Not Specified  
 Extraction Method: EPA 3540C  
 Extraction Date: 02/08/17 00:43  
 Cleanup Method: EPA 3665A  
 Cleanup Date: 02/09/17  
 Cleanup Method: EPA 3660B  
 Cleanup Date: 02/09/17

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
<b>MCP Polychlorinated Biphenyls - Westborough Lab</b>							
Aroclor 1016	ND		ug/kg	35.7	--	1	A
Aroclor 1221	ND		ug/kg	35.7	--	1	A
Aroclor 1232	ND		ug/kg	35.7	--	1	A
Aroclor 1242	ND		ug/kg	35.7	--	1	A
Aroclor 1248	ND		ug/kg	35.7	--	1	A
Aroclor 1254	ND		ug/kg	35.7	--	1	A
Aroclor 1260	ND		ug/kg	35.7	--	1	A
Aroclor 1262	ND		ug/kg	35.7	--	1	A
Aroclor 1268	ND		ug/kg	35.7	--	1	A
PCBs, Total	ND		ug/kg	35.7	--	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	64		30-150	A
Decachlorobiphenyl	36		30-150	A
2,4,5,6-Tetrachloro-m-xylene	59		30-150	B
Decachlorobiphenyl	41		30-150	B

Project Name: EAST BOSTON

Lab Number: L1703748

Project Number: 43068

Report Date: 02/13/17

**SAMPLE RESULTS**

Lab ID: L1703748-03  
 Client ID: VES-EAST-2  
 Sample Location: EAST BOSTON, MA  
 Matrix: Soil  
 Analytical Method: 97,8082A  
 Analytical Date: 02/09/17 06:22  
 Analyst: JA  
 Percent Solids: 90%

Date Collected: 02/06/17 14:15  
 Date Received: 02/06/17  
 Field Prep: Not Specified  
 Extraction Method: EPA 3540C  
 Extraction Date: 02/08/17 00:43  
 Cleanup Method: EPA 3665A  
 Cleanup Date: 02/09/17  
 Cleanup Method: EPA 3660B  
 Cleanup Date: 02/09/17

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
<b>MCP Polychlorinated Biphenyls - Westborough Lab</b>							
Aroclor 1016	ND		ug/kg	36.3	--	1	A
Aroclor 1221	ND		ug/kg	36.3	--	1	A
Aroclor 1232	ND		ug/kg	36.3	--	1	A
Aroclor 1242	ND		ug/kg	36.3	--	1	A
Aroclor 1248	ND		ug/kg	36.3	--	1	A
Aroclor 1254	ND		ug/kg	36.3	--	1	A
Aroclor 1260	ND		ug/kg	36.3	--	1	A
Aroclor 1262	ND		ug/kg	36.3	--	1	A
Aroclor 1268	ND		ug/kg	36.3	--	1	A
PCBs, Total	ND		ug/kg	36.3	--	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	64		30-150	A
Decachlorobiphenyl	34		30-150	A
2,4,5,6-Tetrachloro-m-xylene	61		30-150	B
Decachlorobiphenyl	39		30-150	B

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703748  
**Report Date:** 02/13/17

### Method Blank Analysis Batch Quality Control

Analytical Method: 97,8082A  
Analytical Date: 02/09/17 04:31  
Analyst: JA

Extraction Method: EPA 3540C  
Extraction Date: 02/08/17 00:43  
Cleanup Method: EPA 3665A  
Cleanup Date: 02/09/17  
Cleanup Method: EPA 3660B  
Cleanup Date: 02/09/17

Parameter	Result	Qualifier	Units	RL	MDL	Column
MCP Polychlorinated Biphenyls - Westborough Lab for sample(s): 01-03 Batch: WG976168-1						
Aroclor 1016	ND		ug/kg	31.7	--	A
Aroclor 1221	ND		ug/kg	31.7	--	A
Aroclor 1232	ND		ug/kg	31.7	--	A
Aroclor 1242	ND		ug/kg	31.7	--	A
Aroclor 1248	ND		ug/kg	31.7	--	A
Aroclor 1254	ND		ug/kg	31.7	--	A
Aroclor 1260	ND		ug/kg	31.7	--	A
Aroclor 1262	ND		ug/kg	31.7	--	A
Aroclor 1268	ND		ug/kg	31.7	--	A
PCBs, Total	ND		ug/kg	31.7	--	A

Surrogate	%Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	72		30-150	A
Decachlorobiphenyl	49		30-150	A
2,4,5,6-Tetrachloro-m-xylene	69		30-150	B
Decachlorobiphenyl	55		30-150	B

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703748  
**Report Date:** 02/13/17

<b>Parameter</b>	<i>LCS</i> %Recovery	<i>Qual</i>	<i>LCSD</i> %Recovery	<i>Qual</i>	<i>%Recovery</i> <i>Limits</i>	<i>RPD</i>	<i>Qual</i>	<i>RPD</i> <i>Limits</i>	<i>Column</i>
MCP Polychlorinated Biphenyls - Westborough Lab Associated sample(s): 01-03 Batch: WG976168-2 WG976168-3									
Aroclor 1016	63		70		40-140	11		30	A
Aroclor 1260	45		48		40-140	6		30	A

<b>Surrogate</b>	<i>LCS</i> %Recovery	<i>Qual</i>	<i>LCSD</i> %Recovery	<i>Qual</i>	<i>Acceptance</i> <i>Criteria</i>	<i>Column</i>
2,4,5,6-Tetrachloro-m-xylene						
Decachlorobiphenyl	78		77		30-150	A
2,4,5,6-Tetrachloro-m-xylene	42		41		30-150	A
Decachlorobiphenyl	70		74		30-150	B
2,4,5,6-Tetrachloro-m-xylene	51		51		30-150	B

# **PESTICIDES**



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703748  
**Report Date:** 02/13/17

**SAMPLE RESULTS**

Lab ID: L1703748-01  
Client ID: VES-WEST  
Sample Location: EAST BOSTON, MA  
Matrix: Soil  
Analytical Method: 97,8081B  
Analytical Date: 02/11/17 18:26  
Analyst: JW  
Percent Solids: 91%

Date Collected: 02/06/17 13:55  
Date Received: 02/06/17  
Field Prep: Not Specified  
Extraction Method: EPA 3546  
Extraction Date: 02/08/17 01:25  
Cleanup Method: EPA 3620B  
Cleanup Date: 02/08/17

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
<b>MCP Organochlorine Pesticides - Westborough Lab</b>							
Delta-BHC	ND		ug/kg	8.70	--	1	A
Lindane	ND		ug/kg	2.90	--	1	A
Alpha-BHC	ND		ug/kg	3.63	--	1	A
Beta-BHC	ND		ug/kg	8.70	--	1	A
Heptachlor	ND		ug/kg	4.35	--	1	A
Aldrin	ND		ug/kg	8.70	--	1	A
Heptachlor epoxide	ND		ug/kg	16.3	--	1	B
Endrin	ND		ug/kg	3.63	--	1	A
Endrin ketone	ND		ug/kg	8.70	--	1	A
Dieldrin	ND		ug/kg	5.44	--	1	A
4,4'-DDE	ND		ug/kg	8.70	--	1	A
4,4'-DDD	ND		ug/kg	8.70	--	1	A
4,4'-DDT	ND		ug/kg	16.3	--	1	A
Endosulfan I	ND		ug/kg	8.70	--	1	A
Endosulfan II	ND		ug/kg	8.70	--	1	A
Endosulfan sulfate	ND		ug/kg	3.63	--	1	A
Methoxychlor	ND		ug/kg	16.3	--	1	A
Chlordane	ND	PI	ug/kg	70.7	--	1	B
Hexachlorobenzene	ND		ug/kg	8.70	--	1	A
Toxaphene	ND		ug/kg	163	--	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	78		30-150	B
Decachlorobiphenyl	69		30-150	B
2,4,5,6-Tetrachloro-m-xylene	88		30-150	A
Decachlorobiphenyl	65		30-150	A

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703748  
**Report Date:** 02/13/17

**SAMPLE RESULTS**

Lab ID: L1703748-02  
Client ID: VES-EAST-1  
Sample Location: EAST BOSTON, MA  
Matrix: Soil  
Analytical Method: 97,8081B  
Analytical Date: 02/11/17 18:39  
Analyst: JW  
Percent Solids: 93%

Date Collected: 02/06/17 14:05  
Date Received: 02/06/17  
Field Prep: Not Specified  
Extraction Method: EPA 3546  
Extraction Date: 02/08/17 01:25  
Cleanup Method: EPA 3620B  
Cleanup Date: 02/08/17

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
<b>MCP Organochlorine Pesticides - Westborough Lab</b>							
Delta-BHC	ND		ug/kg	8.46	--	1	A
Lindane	ND		ug/kg	2.82	--	1	A
Alpha-BHC	ND		ug/kg	3.52	--	1	A
Beta-BHC	ND		ug/kg	8.46	--	1	A
Heptachlor	ND		ug/kg	4.23	--	1	A
Aldrin	ND		ug/kg	8.46	--	1	A
Heptachlor epoxide	ND		ug/kg	15.9	--	1	A
Endrin	ND		ug/kg	3.52	--	1	A
Endrin ketone	ND		ug/kg	8.46	--	1	A
Dieldrin	ND		ug/kg	5.29	--	1	A
4,4'-DDE	ND		ug/kg	8.46	--	1	A
4,4'-DDD	ND		ug/kg	8.46	--	1	A
4,4'-DDT	ND		ug/kg	15.9	--	1	A
Endosulfan I	ND		ug/kg	8.46	--	1	A
Endosulfan II	ND		ug/kg	8.46	--	1	A
Endosulfan sulfate	ND		ug/kg	3.52	--	1	A
Methoxychlor	ND		ug/kg	15.9	--	1	A
Chlordane	ND		ug/kg	68.7	--	1	A
Hexachlorobenzene	ND		ug/kg	8.46	--	1	A
Toxaphene	ND		ug/kg	159	--	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	73		30-150	B
Decachlorobiphenyl	67		30-150	B
2,4,5,6-Tetrachloro-m-xylene	78		30-150	A
Decachlorobiphenyl	53		30-150	A

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703748  
**Report Date:** 02/13/17

**SAMPLE RESULTS**

Lab ID: L1703748-03  
Client ID: VES-EAST-2  
Sample Location: EAST BOSTON, MA  
Matrix: Soil  
Analytical Method: 97,8081B  
Analytical Date: 02/11/17 18:52  
Analyst: JW  
Percent Solids: 90%

Date Collected: 02/06/17 14:15  
Date Received: 02/06/17  
Field Prep: Not Specified  
Extraction Method: EPA 3546  
Extraction Date: 02/08/17 01:25  
Cleanup Method: EPA 3620B  
Cleanup Date: 02/08/17

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
<b>MCP Organochlorine Pesticides - Westborough Lab</b>							
Delta-BHC	ND		ug/kg	8.67	--	1	A
Lindane	ND		ug/kg	2.89	--	1	A
Alpha-BHC	ND		ug/kg	3.61	--	1	A
Beta-BHC	ND		ug/kg	8.67	--	1	A
Heptachlor	ND		ug/kg	4.34	--	1	A
Aldrin	ND		ug/kg	8.67	--	1	A
Heptachlor epoxide	ND		ug/kg	16.3	--	1	A
Endrin	ND		ug/kg	3.61	--	1	A
Endrin ketone	ND		ug/kg	8.67	--	1	A
Dieldrin	ND		ug/kg	5.42	--	1	A
4,4'-DDE	ND		ug/kg	8.67	--	1	A
4,4'-DDD	ND		ug/kg	8.67	--	1	A
4,4'-DDT	37.6		ug/kg	16.3	--	1	B
Endosulfan I	ND		ug/kg	8.67	--	1	A
Endosulfan II	ND		ug/kg	8.67	--	1	A
Endosulfan sulfate	ND		ug/kg	3.61	--	1	A
Methoxychlor	ND		ug/kg	16.3	--	1	A
Chlordane	ND		ug/kg	70.5	--	1	A
Hexachlorobenzene	ND		ug/kg	8.67	--	1	A
Toxaphene	ND		ug/kg	163	--	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	72		30-150	B
Decachlorobiphenyl	65		30-150	B
2,4,5,6-Tetrachloro-m-xylene	77		30-150	A
Decachlorobiphenyl	55		30-150	A

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703748  
**Report Date:** 02/13/17

### Method Blank Analysis Batch Quality Control

Analytical Method: 97,8081B  
Analytical Date: 02/11/17 17:36  
Analyst: JW

Extraction Method: EPA 3546  
Extraction Date: 02/08/17 01:25  
Cleanup Method: EPA 3620B  
Cleanup Date: 02/08/17

Parameter	Result	Qualifier	Units	RL	MDL	Column
MCP Organochlorine Pesticides - Westborough Lab for sample(s): 01-03 Batch: WG976172-1						
Delta-BHC	ND		ug/kg	7.60	--	A
Lindane	ND		ug/kg	2.53	--	A
Alpha-BHC	ND		ug/kg	3.17	--	A
Beta-BHC	ND		ug/kg	7.60	--	A
Heptachlor	ND		ug/kg	3.80	--	A
Aldrin	ND		ug/kg	7.60	--	A
Heptachlor epoxide	ND		ug/kg	14.2	--	A
Endrin	ND		ug/kg	3.17	--	A
Endrin ketone	ND		ug/kg	7.60	--	A
Dieldrin	ND		ug/kg	4.75	--	A
4,4'-DDE	ND		ug/kg	7.60	--	A
4,4'-DDD	ND		ug/kg	7.60	--	A
4,4'-DDT	ND		ug/kg	14.2	--	A
Endosulfan I	ND		ug/kg	7.60	--	A
Endosulfan II	ND		ug/kg	7.60	--	A
Endosulfan sulfate	ND		ug/kg	3.17	--	A
Methoxychlor	ND		ug/kg	14.2	--	A
Chlordane	ND		ug/kg	61.8	--	A
Hexachlorobenzene	ND		ug/kg	7.60	--	A
Toxaphene	ND		ug/kg	142	--	A

Surrogate	%Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	79		30-150	B
Decachlorobiphenyl	68		30-150	B
2,4,5,6-Tetrachloro-m-xylene	84		30-150	A
Decachlorobiphenyl	72		30-150	A



# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703748  
**Report Date:** 02/13/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
MCP Organochlorine Pesticides - Westborough Lab Associated sample(s): 01-03 Batch: WG976172-2 WG976172-3									
Delta-BHC	80		78		40-140	3		30	A
Lindane	80		77		40-140	4		30	A
Alpha-BHC	95		93		40-140	2		30	A
Beta-BHC	90		96		40-140	6		30	A
Heptachlor	84		80		40-140	5		30	A
Aldrin	89		88		40-140	1		30	A
Heptachlor epoxide	84		77		40-140	9		30	A
Endrin	95		83		40-140	13		30	A
Endrin ketone	79		68		40-140	15		30	A
Dieldrin	91		83		40-140	9		30	A
4,4'-DDE	87		81		40-140	7		30	A
4,4'-DDD	86		78		40-140	10		30	A
4,4'-DDT	87		80		40-140	8		30	A
Endosulfan I	84		79		40-140	6		30	A
Endosulfan II	87		77		40-140	12		30	A
Endosulfan sulfate	70		62		40-140	12		30	A
Methoxychlor	91		83		40-140	9		30	A
Hexachlorobenzene	79		83		40-140	5		30	A
Endrin aldehyde	64		53		40-140	19		30	A
cis-Chlordane	73		71		40-140	3		30	A
trans-Chlordane	84		76		40-140	10		30	A

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703748  
**Report Date:** 02/13/17

<b>Parameter</b>	<i>LCS</i> <i>%Recovery</i>	<i>Qual</i>	<i>LCSD</i> <i>%Recovery</i>	<i>Qual</i>	<i>%Recovery</i> <i>Limits</i>	<i>RPD</i>	<i>Qual</i>	<i>RPD</i> <i>Limits</i>
MCP Organochlorine Pesticides - Westborough Lab Associated sample(s): 01-03 Batch: WG976172-2 WG976172-3								
<b>Surrogate</b>	<i>LCS</i> <i>%Recovery</i>	<i>Qual</i>	<i>LCSD</i> <i>%Recovery</i>	<i>Qual</i>	<i>Acceptance</i> <i>Criteria</i>			
2,4,5,6-Tetrachloro-m-xylene	83		74		30-150	B		
Decachlorobiphenyl	78		69		30-150	B		
2,4,5,6-Tetrachloro-m-xylene	80		83		30-150	A		
Decachlorobiphenyl	61		61		30-150	A		

## METALS



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703748  
**Report Date:** 02/13/17

**SAMPLE RESULTS**

Lab ID: L1703748-01  
Client ID: VES-WEST  
Sample Location: EAST BOSTON, MA  
Matrix: Soil  
Percent Solids: 91%

Date Collected: 02/06/17 13:55  
Date Received: 02/06/17  
Field Prep: Not Specified  
TCLP/SPLP Ext. Date: 02/08/17 04:50

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
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**TCLP Metals by EPA 1311 - Mansfield Lab**

Lead, TCLP	ND	mg/l	0.50	--	1	02/10/17 17:50	02/10/17 23:36	EPA 3015	1,6010C	AB
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**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703748  
**Report Date:** 02/13/17

**SAMPLE RESULTS**

Lab ID:	L1703748-01	Date Collected:	02/06/17 13:55
Client ID:	VES-WEST	Date Received:	02/06/17
Sample Location:	EAST BOSTON, MA	Field Prep:	Not Specified
Matrix:	Soil		
Percent Solids:	91%		

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
<b>MCP Total Metals - Mansfield Lab</b>											
Arsenic, Total	3.9		mg/kg	0.43	--	1	02/07/17 21:20	02/08/17 23:31	EPA 3050B	97,6010C	MC
Barium, Total	24		mg/kg	0.43	--	1	02/07/17 21:20	02/08/17 23:31	EPA 3050B	97,6010C	MC
Cadmium, Total	ND		mg/kg	0.43	--	1	02/07/17 21:20	02/08/17 23:31	EPA 3050B	97,6010C	MC
Chromium, Total	13		mg/kg	0.43	--	1	02/07/17 21:20	02/08/17 23:31	EPA 3050B	97,6010C	MC
Lead, Total	37		mg/kg	2.1	--	1	02/07/17 21:20	02/08/17 23:31	EPA 3050B	97,6010C	MC
Mercury, Total	0.111		mg/kg	0.072	--	1	02/07/17 08:10	02/07/17 19:12	EPA 7471B	97,7471B	JH
Selenium, Total	ND		mg/kg	2.1	--	1	02/07/17 21:20	02/08/17 23:31	EPA 3050B	97,6010C	MC
Silver, Total	ND		mg/kg	0.43	--	1	02/07/17 21:20	02/08/17 23:31	EPA 3050B	97,6010C	MC



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703748  
**Report Date:** 02/13/17

**SAMPLE RESULTS**

Lab ID: L1703748-02  
Client ID: VES-EAST-1  
Sample Location: EAST BOSTON, MA  
Matrix: Soil  
Percent Solids: 93%

Date Collected: 02/06/17 14:05  
Date Received: 02/06/17  
Field Prep: Not Specified  
TCLP/SPLP Ext. Date: 02/08/17 04:50

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
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**TCLP Metals by EPA 1311 - Mansfield Lab**

Lead, TCLP	0.65		mg/l	0.50	--	1	02/10/17 17:50	02/10/17 23:54	EPA 3015	1,6010C	AB
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**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703748  
**Report Date:** 02/13/17

**SAMPLE RESULTS**

Lab ID: L1703748-02 Date Collected: 02/06/17 14:05  
Client ID: VES-EAST-1 Date Received: 02/06/17  
Sample Location: EAST BOSTON, MA Field Prep: Not Specified  
Matrix: Soil  
Percent Solids: 93%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
<b>MCP Total Metals - Mansfield Lab</b>											
Arsenic, Total	3.8		mg/kg	0.42	--	1	02/07/17 21:20	02/08/17 23:35	EPA 3050B	97,6010C	MC
Barium, Total	67		mg/kg	0.42	--	1	02/07/17 21:20	02/08/17 23:35	EPA 3050B	97,6010C	MC
Cadmium, Total	ND		mg/kg	0.42	--	1	02/07/17 21:20	02/08/17 23:35	EPA 3050B	97,6010C	MC
Chromium, Total	15		mg/kg	0.42	--	1	02/07/17 21:20	02/08/17 23:35	EPA 3050B	97,6010C	MC
Lead, Total	170		mg/kg	2.1	--	1	02/07/17 21:20	02/08/17 23:35	EPA 3050B	97,6010C	MC
Mercury, Total	0.406		mg/kg	0.067	--	1	02/07/17 08:10	02/07/17 19:14	EPA 7471B	97,7471B	JH
Selenium, Total	ND		mg/kg	2.1	--	1	02/07/17 21:20	02/08/17 23:35	EPA 3050B	97,6010C	MC
Silver, Total	ND		mg/kg	0.42	--	1	02/07/17 21:20	02/08/17 23:35	EPA 3050B	97,6010C	MC



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703748  
**Report Date:** 02/13/17

**SAMPLE RESULTS**

Lab ID: L1703748-03  
Client ID: VES-EAST-2  
Sample Location: EAST BOSTON, MA  
Matrix: Soil  
Percent Solids: 90%

Date Collected: 02/06/17 14:15  
Date Received: 02/06/17  
Field Prep: Not Specified  
TCLP/SPLP Ext. Date: 02/08/17 04:50

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
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**TCLP Metals by EPA 1311 - Mansfield Lab**

Lead, TCLP	ND		mg/l	0.50	--	1	02/10/17 17:50	02/10/17 23:58	EPA 3015	1,6010C	AB
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**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703748  
**Report Date:** 02/13/17

**SAMPLE RESULTS**

Lab ID: L1703748-03  
Client ID: VES-EAST-2  
Sample Location: EAST BOSTON, MA  
Matrix: Soil  
Percent Solids: 90%

Date Collected: 02/06/17 14:15  
Date Received: 02/06/17  
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
<b>MCP Total Metals - Mansfield Lab</b>											
Arsenic, Total	4.9		mg/kg	0.43	--	1	02/07/17 21:20	02/08/17 23:39	EPA 3050B	97,6010C	MC
Barium, Total	40		mg/kg	0.43	--	1	02/07/17 21:20	02/08/17 23:39	EPA 3050B	97,6010C	MC
Cadmium, Total	ND		mg/kg	0.43	--	1	02/07/17 21:20	02/08/17 23:39	EPA 3050B	97,6010C	MC
Chromium, Total	13		mg/kg	0.43	--	1	02/07/17 21:20	02/08/17 23:39	EPA 3050B	97,6010C	MC
Lead, Total	77		mg/kg	2.1	--	1	02/07/17 21:20	02/08/17 23:39	EPA 3050B	97,6010C	MC
Mercury, Total	0.315		mg/kg	0.071	--	1	02/07/17 08:10	02/07/17 19:16	EPA 7471B	97,7471B	JH
Selenium, Total	ND		mg/kg	2.1	--	1	02/07/17 21:20	02/08/17 23:39	EPA 3050B	97,6010C	MC
Silver, Total	ND		mg/kg	0.43	--	1	02/07/17 21:20	02/08/17 23:39	EPA 3050B	97,6010C	MC



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703748  
**Report Date:** 02/13/17

## Method Blank Analysis Batch Quality Control

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
MCP Total Metals - Mansfield Lab for sample(s): 01-03 Batch: WG975847-1									
Mercury, Total	ND	mg/kg	0.083	--	1	02/07/17 08:10	02/07/17 10:38	97,7471B	JH

### Prep Information

Digestion Method: EPA 7471B

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
MCP Total Metals - Mansfield Lab for sample(s): 01-03 Batch: WG976114-1									
Arsenic, Total	ND	mg/kg	0.40	--	1	02/07/17 21:20	02/08/17 22:26	97,6010C	MC
Barium, Total	ND	mg/kg	0.40	--	1	02/07/17 21:20	02/08/17 22:26	97,6010C	MC
Cadmium, Total	ND	mg/kg	0.40	--	1	02/07/17 21:20	02/08/17 22:26	97,6010C	MC
Chromium, Total	ND	mg/kg	0.40	--	1	02/07/17 21:20	02/08/17 22:26	97,6010C	MC
Lead, Total	ND	mg/kg	2.0	--	1	02/07/17 21:20	02/08/17 22:26	97,6010C	MC
Selenium, Total	ND	mg/kg	2.0	--	1	02/07/17 21:20	02/08/17 22:26	97,6010C	MC
Silver, Total	ND	mg/kg	0.40	--	1	02/07/17 21:20	02/08/17 22:26	97,6010C	MC

### Prep Information

Digestion Method: EPA 3050B

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
TCLP Metals by EPA 1311 - Mansfield Lab for sample(s): 01-03 Batch: WG976979-1									
Lead, TCLP	ND	mg/l	0.50	--	1	02/10/17 17:50	02/10/17 23:32	1,6010C	AB

### Prep Information

Digestion Method: EPA 3015

TCLP/SPLP Extraction Date: 02/08/17 04:50



# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703748  
**Report Date:** 02/13/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Total Metals - Mansfield Lab Associated sample(s): 01-03 Batch: WG975847-2 WG975847-3 SRM Lot Number: D091-540								
Mercury, Total	92		110		72-128	18		30
MCP Total Metals - Mansfield Lab Associated sample(s): 01-03 Batch: WG976114-2 WG976114-3 SRM Lot Number: D091-540								
Arsenic, Total	103		103		80-121	0		30
Barium, Total	96		91		84-117	5		30
Cadmium, Total	97		99		83-117	2		30
Chromium, Total	98		98		80-119	0		30
Lead, Total	103		103		82-118	0		30
Selenium, Total	101		101		79-121	0		30
Silver, Total	99		99		76-124	0		30
TCLP Metals by EPA 1311 - Mansfield Lab Associated sample(s): 01-03 Batch: WG976979-2								
Lead, TCLP	102		-		75-125	-		20

**Matrix Spike Analysis**  
**Batch Quality Control**

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703748  
**Report Date:** 02/13/17

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	MSD Qual	MSD Found	MSD %Recovery	MSD Qual	Recovery Limits	RPD RPD	Qual Qual	RPD Limits
TCLP Metals by EPA 1311 - Mansfield Lab Associated sample(s): 01-03 QC Batch ID: WG976979-3 QC Sample: L1703748-01 Client ID: VES-WEST												
Lead, TCLP	ND	5.1	5.4	106	-	-	-	-	75-125	-	-	20

**Lab Duplicate Analysis**  
Batch Quality Control

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703748  
**Report Date:** 02/13/17

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
TCLP Metals by EPA 1311 - Mansfield Lab Associated sample(s): 01-03 QC Batch ID: WG976979-4 QC Sample: L1703748-01 Client ID: VES-WEST						
Lead, TCLP	ND	ND	mg/l	NC		20

# **INORGANICS & MISCELLANEOUS**



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703748  
**Report Date:** 02/13/17

## SAMPLE RESULTS

Lab ID: L1703748-01  
Client ID: VES-WEST  
Sample Location: EAST BOSTON, MA  
Matrix: Soil

Date Collected: 02/06/17 13:55  
Date Received: 02/06/17  
Field Prep: Not Specified

### Test Material Information

Source of Material: Unknown  
Description of Material: Non-Metallic - Damp Soil  
Particle Size: Fine  
Preliminary Burning Time (sec): 120

Parameter	Result	Date Analyzed	Analytical Method	Analyst
Ignitability of Solids - Westborough Lab				
Ignitability	NI	02/07/17 12:38	1,1030	AB



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703748  
**Report Date:** 02/13/17

## SAMPLE RESULTS

Lab ID: L1703748-02  
Client ID: VES-EAST-1  
Sample Location: EAST BOSTON, MA  
Matrix: Soil

Date Collected: 02/06/17 14:05  
Date Received: 02/06/17  
Field Prep: Not Specified

### Test Material Information

Source of Material:	Unknown
Description of Material:	Non-Metallic - Damp Soil
Particle Size:	Fine
Preliminary Burning Time (sec):	120

Parameter	Result	Date Analyzed	Analytical Method	Analyst
<b>Ignitability of Solids - Westborough Lab</b>				
Ignitability	NI	02/07/17 12:38	1,1030	AB



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703748  
**Report Date:** 02/13/17

## SAMPLE RESULTS

Lab ID: L1703748-03  
Client ID: VES-EAST-2  
Sample Location: EAST BOSTON, MA  
Matrix: Soil

Date Collected: 02/06/17 14:15  
Date Received: 02/06/17  
Field Prep: Not Specified

### Test Material Information

Source of Material:	Unknown
Description of Material:	Non-Metallic - Damp Soil
Particle Size:	Fine
Preliminary Burning Time (sec):	120

Parameter	Result	Date Analyzed	Analytical Method	Analyst
<b>Ignitability of Solids - Westborough Lab</b>				
Ignitability	NI	02/07/17 12:38	1,1030	AB



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703748  
**Report Date:** 02/13/17

### SAMPLE RESULTS

Lab ID: L1703748-01  
Client ID: VES-WEST  
Sample Location: EAST BOSTON, MA  
Matrix: Soil

Date Collected: 02/06/17 13:55  
Date Received: 02/06/17  
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>General Chemistry - Westborough Lab</b>										
Specific Conductance @ 25 C	37		umhos/cm	10	--	1	-	02/06/17 23:38	1,9050A	VB
Solids, Total	91.3	%		0.100	NA	1	-	02/07/17 15:17	121,2540G	RI
pH (H)	7.6	SU		-	NA	1	-	02/06/17 21:35	1,9045D	AS
Cyanide, Reactive	ND		mg/kg	10	--	1	02/07/17 17:10	02/07/17 18:47	1,7.3	RP
Sulfide, Reactive	ND		mg/kg	10	--	1	02/07/17 17:10	02/07/17 18:40	1,7.3	RP

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703748  
**Report Date:** 02/13/17

### SAMPLE RESULTS

Lab ID: L1703748-02  
Client ID: VES-EAST-1  
Sample Location: EAST BOSTON, MA  
Matrix: Soil

Date Collected: 02/06/17 14:05  
Date Received: 02/06/17  
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>General Chemistry - Westborough Lab</b>										
Specific Conductance @ 25 C	56		umhos/cm	10	--	1	-	02/06/17 23:38	1,9050A	VB
Solids, Total	92.9	%		0.100	NA	1	-	02/07/17 15:17	121,2540G	RI
pH (H)	7.9	SU		-	NA	1	-	02/06/17 21:35	1,9045D	AS
Cyanide, Reactive	ND		mg/kg	10	--	1	02/07/17 17:10	02/07/17 18:47	1,7.3	RP
Sulfide, Reactive	ND		mg/kg	10	--	1	02/07/17 17:10	02/07/17 18:40	1,7.3	RP

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703748  
**Report Date:** 02/13/17

### SAMPLE RESULTS

Lab ID: L1703748-03  
Client ID: VES-EAST-2  
Sample Location: EAST BOSTON, MA  
Matrix: Soil

Date Collected: 02/06/17 14:15  
Date Received: 02/06/17  
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>General Chemistry - Westborough Lab</b>										
Specific Conductance @ 25 C	34		umhos/cm	10	--	1	-	02/06/17 23:38	1,9050A	VB
Solids, Total	90.0	%		0.100	NA	1	-	02/07/17 15:17	121,2540G	RI
pH (H)	7.8	SU		-	NA	1	-	02/06/17 21:35	1,9045D	AS
Cyanide, Reactive	ND		mg/kg	10	--	1	02/07/17 17:10	02/07/17 18:47	1,7.3	RP
Sulfide, Reactive	ND		mg/kg	10	--	1	02/07/17 17:10	02/07/17 18:41	1,7.3	RP



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703748  
**Report Date:** 02/13/17

**Method Blank Analysis**  
**Batch Quality Control**

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab for sample(s): 01-03 Batch: WG976073-1									
Sulfide, Reactive	ND	mg/kg	10	--	1	02/07/17 17:10	02/07/17 18:36	1,7.3	RP
General Chemistry - Westborough Lab for sample(s): 01-03 Batch: WG976074-1									
Cyanide, Reactive	ND	mg/kg	10	--	1	02/07/17 17:10	02/07/17 18:44	1,7.3	RP



# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703748  
**Report Date:** 02/13/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01-03 Batch: WG975787-1								
pH	100	-	-	-	99-101	-	-	-
General Chemistry - Westborough Lab Associated sample(s): 01-03 Batch: WG975814-1								
Specific Conductance	100	-	-	-	99-101	-	-	-
General Chemistry - Westborough Lab Associated sample(s): 01-03 Batch: WG976073-2								
Sulfide, Reactive	86	-	-	-	60-125	-	-	40
General Chemistry - Westborough Lab Associated sample(s): 01-03 Batch: WG976074-2								
Cyanide, Reactive	56	-	-	-	30-125	-	-	40

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703748  
**Report Date:** 02/13/17

### Sample Receipt and Container Information

Were project specific reporting limits specified? YES

**Reagent H2O Preserved Vials Frozen on:** 02/06/2017 21:14

#### Cooler Information Custody Seal

##### Cooler

A Absent

#### Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L1703748-01A	Vial MeOH preserved	A	N/A	3.6	Y	Absent	VPH-10(28),MCP-8260HLW-10(14)
L1703748-01B	Vial water preserved	A	N/A	3.6	Y	Absent	MCP-8260HLW-10(14)
L1703748-01C	Vial water preserved	A	N/A	3.6	Y	Absent	MCP-8260HLW-10(14)
L1703748-01D	Glass 120ml/4oz unpreserved	A	N/A	3.6	Y	Absent	EPH-10(14),IGNIT-1030(14),REACTS(14),MCP-8081-10(14),MCP-8270-10(14),TS(7),MCP-8082-10-3540C(365),PH-9045(1),REACTCN(14),COND-9050(28)
L1703748-01E	Glass 500ml/16oz unpreserved	A	N/A	3.6	Y	Absent	EPH-10(14),IGNIT-1030(14),REACTS(14),MCP-8081-10(14),MCP-8270-10(14),TS(7),MCP-8082-10-3540C(365),PH-9045(1),REACTCN(14),COND-9050(28)
L1703748-01F	Metals Only - Glass 60mL/2oz unp	A	N/A	3.6	Y	Absent	MCP-CR-6010T-10(180),MCP-AS-6010T-10(180),MCP-7471T-10(28),MCP-CD-6010T-10(180),MCP-AG-6010T-10(180),MCP-SE-6010T-10(180),MCP-BA-6010T-10(180),MCP-PB-6010T-10(180)
L1703748-01X	Plastic 120ml HNO3 preserved Ext	A	<2	3.6	Y	Absent	PB-CI(180)
L1703748-01X9	Tumble Vessel	A	N/A	3.6	Y	Absent	-
L1703748-02A	Vial MeOH preserved	A	N/A	3.6	Y	Absent	VPH-10(28),MCP-8260HLW-10(14)
L1703748-02B	Vial water preserved	A	N/A	3.6	Y	Absent	MCP-8260HLW-10(14)
L1703748-02C	Vial water preserved	A	N/A	3.6	Y	Absent	MCP-8260HLW-10(14)
L1703748-02D	Glass 120ml/4oz unpreserved	A	N/A	3.6	Y	Absent	EPH-10(14),IGNIT-1030(14),REACTS(14),MCP-8081-10(14),MCP-8270-10(14),TS(7),MCP-8082-10-3540C(365),PH-9045(1),REACTCN(14),COND-9050(28)

\*Values in parentheses indicate holding time in days

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703748  
**Report Date:** 02/13/17

**Container Information**

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L1703748-02E	Glass 500ml/16oz unpreserved	A	N/A	3.6	Y	Absent	EPH-10(14),IGNIT-1030(14),REACTS(14),MCP-8081-10(14),MCP-8270-10(14),TS(7),MCP-8082-10-3540C(365),PH-9045(1),REACTCN(14),COND-9050(28)
L1703748-02F	Metals Only - Glass 60mL/2oz unp	A	N/A	3.6	Y	Absent	MCP-CR-6010T-10(180),MCP-AS-6010T-10(180),MCP-7471T-10(28),MCP-CD-6010T-10(180),MCP-AG-6010T-10(180),MCP-SE-6010T-10(180),MCP-BA-6010T-10(180),MCP-PB-6010T-10(180)
L1703748-02X	Plastic 120ml HNO3 preserved Ext	A	<2	3.6	Y	Absent	PB-CI(180)
L1703748-02X9	Tumble Vessel	A	N/A	3.6	Y	Absent	-
L1703748-03A	Vial MeOH preserved	A	N/A	3.6	Y	Absent	VPH-10(28),MCP-8260HLW-10(14)
L1703748-03B	Vial water preserved	A	N/A	3.6	Y	Absent	MCP-8260HLW-10(14)
L1703748-03C	Vial water preserved	A	N/A	3.6	Y	Absent	MCP-8260HLW-10(14)
L1703748-03D	Glass 120ml/4oz unpreserved	A	N/A	3.6	Y	Absent	EPH-10(14),IGNIT-1030(14),REACTS(14),MCP-8081-10(14),MCP-8270-10(14),TS(7),MCP-8082-10-3540C(365),PH-9045(1),REACTCN(14),COND-9050(28)
L1703748-03E	Glass 500ml/16oz unpreserved	A	N/A	3.6	Y	Absent	EPH-10(14),IGNIT-1030(14),REACTS(14),MCP-8081-10(14),MCP-8270-10(14),TS(7),MCP-8082-10-3540C(365),PH-9045(1),REACTCN(14),COND-9050(28)
L1703748-03F	Metals Only - Glass 60mL/2oz unp	A	N/A	3.6	Y	Absent	MCP-CR-6010T-10(180),MCP-AS-6010T-10(180),MCP-7471T-10(28),MCP-CD-6010T-10(180),MCP-AG-6010T-10(180),MCP-SE-6010T-10(180),MCP-BA-6010T-10(180),MCP-PB-6010T-10(180)
L1703748-03X	Plastic 120ml HNO3 preserved Ext	A	<2	3.6	Y	Absent	PB-CI(180)
L1703748-03X9	Tumble Vessel	A	N/A	3.6	Y	Absent	-

\*Values in parentheses indicate holding time in days

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703748  
**Report Date:** 02/13/17

## GLOSSARY

### **Acronyms**

EDL	- Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).
EPA	- Environmental Protection Agency.
LCS	- Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCSD	- Laboratory Control Sample Duplicate: Refer to LCS.
LFB	- Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
MDL	- Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
MS	- Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available.
MSD	- Matrix Spike Sample Duplicate: Refer to MS.
NA	- Not Applicable.
NC	- Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
NDPA/DPA	- N-Nitrosodiphenylamine/Diphenylamine.
NI	- Not Ignitable.
NP	- Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.
RL	- Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
RPD	- Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.
SRM	- Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.
STLP	- Semi-dynamic Tank Leaching Procedure per EPA Method 1315.
TIC	- Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

### **Footnotes**

- 1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

### **Terms**

**Total:** With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

**Analytical Method:** Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

### **Data Qualifiers**

- A** - Spectra identified as "Aldol Condensation Product".
- B** - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the

**Report Format:** Data Usability Report



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703748  
**Report Date:** 02/13/17

**Data Qualifiers**

reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

- C** - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.
- D** - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.
- E** - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.
- G** - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.
- H** - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.
- I** - The lower value for the two columns has been reported due to obvious interference.
- M** - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.
- NJ** - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.
- P** - The RPD between the results for the two columns exceeds the method-specified criteria.
- Q** - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)
- R** - Analytical results are from sample re-analysis.
- RE** - Analytical results are from sample re-extraction.
- S** - Analytical results are from modified screening analysis.
- J** - Estimated value. This represents an estimated concentration for Tentatively Identified Compounds (TICs).
- ND** - Not detected at the reporting limit (RL) for the sample.

*Report Format:* Data Usability Report



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703748  
**Report Date:** 02/13/17

## REFERENCES

- 1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - IV, 2007.
- 97 EPA Test Methods (SW-846) with QC Requirements & Performance Standards for the Analysis of EPA SW-846 Methods under the Massachusetts Contingency Plan, WSC-CAM-IIA, IIB, IIIA, IIIB, IIIC, IID, VA, VB, VC, VIA, VIB, VIIIA and VIIIB, July 2010.
- 98 Method for the Determination of Extractable Petroleum Hydrocarbons (EPH), MassDEP, May 2004, Revision 1.1 with QC Requirements & Performance Standards for the Analysis of EPH under the Massachusetts Contingency Plan, WSC-CAM-IVB, July 2010.
- 100 Method for the Determination of Volatile Petroleum Hydrocarbons (VPH), MassDEP, May 2004, Revision 1.1 with QC Requirements & Performance Standards for the Analysis of VPH under the Massachusetts Contingency Plan, WSC-CAM-IVA, July 2010.
- 121 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. Standard Methods Online.

## LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at its own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.



## Certification Information

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**The following analytes are not included in our Primary NELAP Scope of Accreditation:**

**Westborough Facility**

EPA 624: m/p-xylene, o-xylene

EPA 8260C: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), Methyl methacrylate, 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.

EPA 8270D: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.

EPA 300: DW: Bromide

EPA 6860: NPW and SCM: Perchlorate

EPA 9010: NPW and SCM: Amenable Cyanide Distillation

EPA 9012B: NPW: Total Cyanide

EPA 9050A: NPW: Specific Conductance

SM3500: NPW: Ferrous Iron

SM4500: NPW: Amenable Cyanide, Dissolved Oxygen; SCM: Total Phosphorus, TKN, NO<sub>2</sub>, NO<sub>3</sub>.

SM5310C: DW: Dissolved Organic Carbon

**Mansfield Facility**

SM 2540D: TSS

EPA 3005A NPW

EPA 8082A: NPW: PCB: 1, 5, 31, 87, 101, 110, 141, 151, 153, 180, 183, 187.

EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.

**Biological Tissue Matrix**: EPA 3050B

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**The following analytes are included in our Massachusetts DEP Scope of Accreditation**

**Westborough Facility:**

**Drinking Water**

EPA 300.0: Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C**, **SM4500CN-CE**, **EPA 180.1**,

**SM2130B**, **SM4500CI-D**, **SM2320B**, **SM2540C**, **SM4500H-B**

EPA 332: Perchlorate; **EPA 524.2**: THMs and VOCs; **EPA 504.1**: EDB, DBCP.

Microbiology: **SM9215B**; **SM9223-P/A**, **SM9223B-Colilert-QT**, **SM9222D**.

**Non-Potable Water**

**SM4500H,B**, **EPA 120.1**, **SM2510B**, **SM2540C**, **SM2320B**, **SM4500CL-E**, **SM4500F-BC**, **SM4500NH3-BH**, **EPA 350.1**: Ammonia-N, LACHAT 10-107-06-1-B: Ammonia-N, **SM4500NO3-F**, **EPA 353.2**: Nitrate-N, **EPA 351.1**, **SM4500P-E**, **SM4500P-B**, **E**, **SM4500SO4-E**, **SM5220D**, **EPA 410.4**, **SM5210B**, **SM5310C**, **SM4500CL-D**, **EPA 1664**, **EPA 420.1**, **SM4500-CN-CE**, **SM2540D**.

EPA 624: Volatile Halocarbons & Aromatics,

EPA 608: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs

EPA 625: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045**: PCB-Oil.

Microbiology: **SM9223B-Colilert-QT**; **Enterolert-QT**, **SM9221E**.

**Mansfield Facility:**

**Drinking Water**

EPA 200.7: Ba, Be, Cd, Cr, Cu, Ni, Na, Ca. **EPA 200.8**: Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Ni, Se, TL. **EPA 245.1 Hg**.

**Non-Potable Water**

EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.

EPA 200.8: Al, Sb, As, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn.

EPA 245.1 Hg.

**SM2340B**

---

For a complete listing of analytes and methods, please contact your Alpha Project Manager.



## **CHAIN OF CUSTODY**

PAGE        OF

8 Walkup Drive  
Westboro, MA 01581  
Tel: 508-898-9220

320 Forbes Blvd  
Mansfield, MA 02048  
Tel: 508-822-9300

## **Client Information**

Client: VERTEX

Address: 1 Congress St, 10th Fl  
Boston MA

Phone: 781-974-7595

Email: [bsiloren@vertekeng.com](mailto:bsiloren@vertekeng.com)

### **Additional Project Information:**

<b>Container Type</b>	<b>Preservative</b>
P= Plastic	A= None
A= Amber glass	B= HCl
V= Vial	C= $\text{HNO}_3$
G= Glass	D= $\text{H}_2\text{SO}_4$
B= Bacteria cup	E= $\text{NaOH}$
C= Cube	F= MeOH
O= Other	G= $\text{NaHSO}_4$
E= Encore	H= $\text{Na}_2\text{S}_2\text{O}_3$
D= BOD Bottle	I= Ascorbic Acid
	J= $\text{NH}_4\text{Cl}$
	K= Zn Acetate
	Q= Other

	Container Type				
	Preservative				
Relinquished By:	Date/Time	Received By:	Date/Time	All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.	FORM NO: 01-01 (rev. 12-Mar-2012)
<i>Rob Morris AAL</i>	8/6/17 16:58	<i>Rob Morris AAL</i>	8/6/17 15:15		

**Method Blank Summary  
Form 4**

Client	: Vertex Environmental Services, Inc.	Lab Number	: L1703748
Project Name	: EAST BOSTON	Project Number	: 43068
Lab Sample ID	: WG976794-5	Lab File ID	: VC170209A06
Instrument ID	: CHARLIE		
Matrix	: SOIL	Analysis Date	: 02/09/17 09:53

Client Sample No.	Lab Sample ID	Analysis Date
WG976794-3LCS	WG976794-3	02/09/17 08:02
WG976794-4LCSD	WG976794-4	02/09/17 08:31
VES-WEST	L1703748-01	02/09/17 16:17
VES-EAST-1	L1703748-02	02/09/17 16:44
VES-EAST-2	L1703748-03	02/09/17 17:11

**Continuing Calibration  
Form 7**

Client	: Vertex Environmental Services, Inc.	Lab Number	: L1703748
Project Name	: EAST BOSTON	Project Number	: 43068
Instrument ID	: CHARLIE	Calibration Date	: 02/09/17 08:02
Lab File ID	: VC170209A02	Init. Calib. Date(s)	: 01/25/17
Sample No	: WG976794-2	Init. Calib. Times	: 15:01 01/25/17 18:59
Channel	:		

Compound	Ave. RRF	RRF	Min RRF	%D	Max %D	Area%	Dev(min)
Fluorobenzene	1	1	-	0	20	59	0
Dichlorodifluoromethane	0.398	0.37	-	7	20	57	0
Chloromethane	0.333	0.324	-	2.7	20	61	0
Vinyl chloride	0.381	0.494	-	-29.7*	20	79	0
Bromomethane	20	31.276	-	-56.4*	20	79	0
Chloroethane	0.259	0.38	-	-46.7*	20	91	0
Trichlorofluoromethane	0.537	0.823	-	-53.3*	20	90	0
Ethyl ether	0.215	0.299	-	-39.1*	20	84	0
1,1-Dichloroethene	0.339	0.388	-	-14.5	20	71	0
Carbon disulfide	1.178	1.586	-	-34.6*	20	83	0
Methylene chloride	20	29.426	-	-47.1*	20	89	0
Acetone	20	20.941	-	-4.7	20	58	0
trans-1,2-Dichloroethene	0.382	0.452	-	-18.3	20	72	0
Methyl tert-butyl ether	1.127	1.289	-	-14.4	20	71	0
Diisopropyl ether	1.017	1.085	-	-6.7	20	67	0
1,1-Dichloroethane	0.655	0.75	-	-14.5	20	71	0
Ethyl tert-butyl ether	1.126	1.218	-	-8.2	20	68	0
cis-1,2-Dichloroethene	0.423	0.494	-	-16.8	20	71	0
2,2-Dichloropropane	0.56	0.568	-	-1.4	20	64	0
Bromochloromethane	0.206	0.248	-	-20.4*	20	71	0
Chloroform	0.681	0.784	-	-15.1	20	71	0
Carbon tetrachloride	0.523	0.522	-	0.2	20	62	0
Tetrahydrofuran	0.114	0.132	-	-15.8	20	71	0
Dibromofluoromethane	0.276	0.279	-	-1.1	20	60	0
1,1,1-Trichloroethane	0.609	0.685	-	-12.5	20	70	0
2-Butanone	0.158	0.171	-	-8.2	20	65	0
1,1-Dichloropropene	0.506	0.588	-	-16.2	20	71	0
Benzene	1.458	1.697	-	-16.4	20	71	0
tert-Amyl methyl ether	1.067	1.149	-	-7.7	20	67	0
1,2-Dichloroethane-d4	0.277	0.276	-	0.4	20	61	0
1,2-Dichloroethane	0.5	0.588	-	-17.6	20	73	0
Trichloroethene	0.411	0.477	-	-16.1	20	72	0
Dibromomethane	0.251	0.293	-	-16.7	20	71	0
1,2-Dichloropropane	0.371	0.422	-	-13.7	20	70	0
Bromodichloromethane	0.519	0.56	-	-7.9	20	67	0
1,4-Dioxane	1000	1320.982	-	-32.1*	20	66	0
cis-1,3-Dichloropropene	0.614	0.658	-	-7.2	20	65	0
Chlorobenzene-d5	1	1	-	0	20	66	0
Toluene-d8	1.244	1.169	-	6	20	62	0
Toluene	1.202	1.244	-	-3.5	20	71	0
4-Methyl-2-pentanone	0.185	0.193	-	-4.3	20	71	0
Tetrachloroethene	0.484	0.506	-	-4.5	20	70	0
trans-1,3-Dichloropropene	0.701	0.648	-	7.6	20	63	0
1,1,2-Trichloroethane	0.366	0.383	-	-4.6	20	71	0
Chlorodibromomethane	0.545	0.503	-	7.7	20	64	0

\* Value outside of QC limits.



# Continuing Calibration Form 7

Client : Vertex Environmental Services, Inc.      Lab Number : L1703748  
 Project Name : EAST BOSTON      Project Number : 43068  
 Instrument ID : CHARLIE      Calibration Date : 02/09/17 08:02  
 Lab File ID : VC170209A02      Init. Calib. Date(s) : 01/25/17      01/25/17  
 Sample No : WG976794-2      Init. Calib. Times : 15:01      18:59  
 Channel :

Compound	Ave. RRF	RRF	Min RRF	%D	Max %D	Area%	Dev(min)
1,3-Dichloropropane	0.727	0.759	-	-4.4	20	70	0
1,2-Dibromoethane	0.454	0.47	-	-3.5	20	70	0
2-Hexanone	0.345	0.326	-	5.5	20	67	0
Chlorobenzene	1.414	1.463	-	-3.5	20	70	0
Ethylbenzene	2.362	2.483	-	-5.1	20	72	0
1,1,1,2-Tetrachloroethane	0.507	0.454	-	10.5	20	62	0
p/m Xylene	0.914	0.976	-	-6.8	20	72	0
o Xylene	0.877	0.915	-	-4.3	20	70	0
Styrene	1.491	1.56	-	-4.6	20	71	0
1,4-Dichlorobenzene-d4	1	1	-	0	20	70	0
Bromoform	0.671	0.513	-	23.5*	20	57	0
Isopropylbenzene	4.756	4.708	-	1	20	72	0
4-Bromofluorobenzene	1.019	0.976	-	4.2	20	67	0
Bromobenzene	1.146	1.111	-	3.1	20	70	0
n-Propylbenzene	5.63	5.716	-	-1.5	20	73	0
1,1,2,2-Tetrachloroethane	1.232	1.241	-	-0.7	20	72	0
2-Chlorotoluene	3.421	3.431	-	-0.3	20	72	0
1,3,5-Trimethylbenzene	4.068	4.129	-	-1.5	20	73	0
1,2,3-Trichloropropane	0.957	1.009	-	-5.4	20	75	0
4-Chlorotoluene	3.456	3.448	-	0.2	20	72	0
tert-Butylbenzene	3.431	3.434	-	-0.1	20	73	0
1,2,4-Trimethylbenzene	4.109	4.112	-	-0.1	20	72	0
sec-Butylbenzene	5.224	5.357	-	-2.5	20	74	0
p-Isopropyltoluene	4.405	4.496	-	-2.1	20	74	0
1,3-Dichlorobenzene	2.254	2.215	-	1.7	20	72	0
1,4-Dichlorobenzene	2.254	2.245	-	0.4	20	72	0
n-Butylbenzene	4.073	4.259	-	-4.6	20	75	0
1,2-Dichlorobenzene	2.105	2.089	-	0.8	20	73	0
1,2-Dibromo-3-chloropropan	0.22	0.188	-	14.5	20	64	0
Hexachlorobutadiene	0.618	0.582	-	5.8	20	69	0
1,2,4-Trichlorobenzene	1.372	1.338	-	2.5	20	70	0
Naphthalene	3.987	3.938	-	1.2	20	74	0
1,2,3-Trichlorobenzene	1.291	1.233	-	4.5	20	70	0

\* Value outside of QC limits.



I:\Pest18\170211\18170211-01.d

Data File Name **18170211-01.d**  
 Data File Path **I:\Pest18\170211\**  
 Operator **PEST18:keg**  
 Date Acquired **2/11/2017 14:28**  
 Acq. Method File **PEST.M**  
 Sample Name **pem1817021101,42ee,,de**  
 Instrument Name **Pest 18**

Name	Ret Time	Response	
4,4'-DDT	4.79	490888526.9	% Breakdown
4,4'-DDE	4.13	799642.2	
4,4'-DDD	4.59	680046.514	0.30%
Endrin	4.52	249467030.4	% Breakdown
Endrin Aldehyde	4.99	1602293.112	
Endrin Ketone	5.49	3673965.552	2.07%
<b>Name #2</b>			
4,4'-DDT #2	5.42	246549903.35	% Breakdown
4,4'-DDE #2	4.77	743040.513	
4,4'-DDD #2	5.20	1317447.5	0.83%
Endrin #2	5.13	138569969.7	% Breakdown
Endrin Aldehyde #2	5.52	1465127.148	
Endrin Ketone #2	6.07	2051341.759	2.47%

wg 976172-1 , -2 , -3  
 11703748-01 , -02 , -03



## ANALYTICAL REPORT

Lab Number:	L1703750
Client:	Vertex Environmental Services, Inc. 400 Libbey Pkwy Weymouth, MA 02184
ATTN:	Bill Gibbons
Phone:	(617) 830-1540
Project Name:	EAST BOSTON
Project Number:	43068
Report Date:	02/13/17

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*Certifications & Approvals:* MA (M-MA086), NH NELAP (2064), NJ NELAP (MA935), CT (PH-0574), IL (200077), ME (MA00086), MD (348), NH (2003), NY (1111-25700/666), PA (68-03671), RI (LA000065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #P330-14-00197).

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Eight Walkup Drive, Westborough, MA 01581-1019  
508-898-9220 (Fax) 508-898-9193 800-624-9220 - [www.alphalab.com](http://www.alphalab.com)



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703750  
**Report Date:** 02/13/17

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L1703750-01	VES-S1	SOIL	EAST BOSTON, MA	02/06/17 12:55	02/06/17
L1703750-02	VES-S2	SOIL	EAST BOSTON, MA	02/06/17 13:25	02/06/17

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703750  
**Report Date:** 02/13/17

### MADEP MCP Response Action Analytical Report Certification

This form provides certifications for all samples performed by MCP methods. Please refer to the Sample Results and Container Information sections of this report for specification of MCP methods used for each analysis. The following questions pertain only to MCP Analytical Methods.

<b>An affirmative response to questions A through F is required for "Presumptive Certainty" status</b>		
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
B	Were the analytical method(s) and all associated QC requirements specified in the selected CAM protocol(s) followed?	YES
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
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
E a.	VPH, EPH, and APH Methods only: Was each method conducted without significant modification(s)? (Refer to the individual method(s) for a list of significant modifications).	YES
E b.	APH and TO-15 Methods only: Was the complete analyte list reported for each method?	N/A
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

<b>A response to questions G, H and I is required for "Presumptive Certainty" status</b>		
G	Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocol(s)?	YES
H	Were all QC performance standards specified in the CAM protocol(s) achieved?	NO
I	Were results reported for the complete analyte list specified in the selected CAM protocol(s)?	NO

**For any questions answered "No", please refer to the case narrative section on the following page(s).**

Please note that sample matrix information is located in the Sample Results section of this report.



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703750  
**Report Date:** 02/13/17

### Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively. When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. All specific QC information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated usability implications. Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances the specific failure is not narrated but noted in the associated QC table. The information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated usability implications.

Please see the associated ADEx data file for a comparison of laboratory reporting limits that were achieved with the regulatory Numerical Standards requested on the Chain of Custody.

#### HOLD POLICY

For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Client Service Representative and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Client Services at 800-624-9220 with any questions.

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703750  
**Report Date:** 02/13/17

### Case Narrative (continued)

#### MCP Related Narratives

Sample Receipt

In reference to question H:

A Matrix Spike was not submitted for the analysis of Metals.

#### Volatile Organics

In reference to question H:

The initial calibration, associated with L1703750-02, did not meet the method required minimum response factor on the lowest calibration standard for 1,4-dioxane (0.0020), as well as the average response factor for 1,4-dioxane.

The continuing calibration standards, associated with L1703750-01 and -02, are outside the acceptance criteria for several compounds; however, they are within overall method allowances. A copy of the continuing calibration standards is included as an addendum to this report.

#### VPH

In reference to question I:

All samples were analyzed for a subset of MCP analytes per the Chain of Custody.

#### Metals

In reference to question I:

All samples were analyzed for a subset of MCP analytes per the Chain of Custody.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature:

 Michelle M. Morris

Title: Technical Director/Representative

Date: 02/13/17

# ORGANICS



# VOLATILES



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703750  
**Report Date:** 02/13/17

**SAMPLE RESULTS**

Lab ID:	L1703750-01	Date Collected:	02/06/17 12:55
Client ID:	VES-S1	Date Received:	02/06/17
Sample Location:	EAST BOSTON, MA	Field Prep:	Not Specified
Matrix:	Soil		
Analytical Method:	97,8260C		
Analytical Date:	02/09/17 17:39		
Analyst:	TE		
Percent Solids:	37%		

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics by 8260/5035 - Westborough Lab</b>						
Methylene chloride	ND	ug/kg	25	--	--	1
1,1-Dichloroethane	ND	ug/kg	3.7	--	--	1
Chloroform	ND	ug/kg	3.7	--	--	1
Carbon tetrachloride	ND	ug/kg	2.5	--	--	1
1,2-Dichloropropane	ND	ug/kg	8.7	--	--	1
Dibromochloromethane	ND	ug/kg	2.5	--	--	1
1,1,2-Trichloroethane	ND	ug/kg	3.7	--	--	1
Tetrachloroethene	ND	ug/kg	2.5	--	--	1
Chlorobenzene	ND	ug/kg	2.5	--	--	1
Trichlorofluoromethane	ND	ug/kg	10	--	--	1
1,2-Dichloroethane	ND	ug/kg	2.5	--	--	1
1,1,1-Trichloroethane	ND	ug/kg	2.5	--	--	1
Bromodichloromethane	ND	ug/kg	2.5	--	--	1
trans-1,3-Dichloropropene	ND	ug/kg	2.5	--	--	1
cis-1,3-Dichloropropene	ND	ug/kg	2.5	--	--	1
1,3-Dichloropropene, Total	ND	ug/kg	2.5	--	--	1
1,1-Dichloropropene	ND	ug/kg	10	--	--	1
Bromoform	ND	ug/kg	10	--	--	1
1,1,2,2-Tetrachloroethane	ND	ug/kg	2.5	--	--	1
Benzene	ND	ug/kg	2.5	--	--	1
Toluene	ND	ug/kg	3.7	--	--	1
Ethylbenzene	ND	ug/kg	2.5	--	--	1
Chloromethane	ND	ug/kg	10	--	--	1
Bromomethane	ND	ug/kg	5.0	--	--	1
Vinyl chloride	ND	ug/kg	5.0	--	--	1
Chloroethane	ND	ug/kg	5.0	--	--	1
1,1-Dichloroethene	ND	ug/kg	2.5	--	--	1
trans-1,2-Dichloroethene	ND	ug/kg	3.7	--	--	1
Trichloroethene	ND	ug/kg	2.5	--	--	1
1,2-Dichlorobenzene	ND	ug/kg	10	--	--	1



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703750  
**Report Date:** 02/13/17

**SAMPLE RESULTS**

Lab ID:	L1703750-01	Date Collected:	02/06/17 12:55
Client ID:	VES-S1	Date Received:	02/06/17
Sample Location:	EAST BOSTON, MA	Field Prep:	Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics by 8260/5035 - Westborough Lab</b>						
1,3-Dichlorobenzene	ND	ug/kg	10	--	--	1
1,4-Dichlorobenzene	ND	ug/kg	10	--	--	1
Methyl tert butyl ether	ND	ug/kg	5.0	--	--	1
p/m-Xylene	ND	ug/kg	5.0	--	--	1
o-Xylene	ND	ug/kg	5.0	--	--	1
Xylenes, Total	ND	ug/kg	5.0	--	--	1
cis-1,2-Dichloroethene	ND	ug/kg	2.5	--	--	1
1,2-Dichloroethene, Total	ND	ug/kg	2.5	--	--	1
Dibromomethane	ND	ug/kg	10	--	--	1
1,2,3-Trichloropropane	ND	ug/kg	10	--	--	1
Styrene	ND	ug/kg	5.0	--	--	1
Dichlorodifluoromethane	ND	ug/kg	25	--	--	1
Acetone	230	ug/kg	90	--	--	1
Carbon disulfide	ND	ug/kg	10	--	--	1
Methyl ethyl ketone	57	ug/kg	25	--	--	1
Methyl isobutyl ketone	ND	ug/kg	25	--	--	1
2-Hexanone	ND	ug/kg	25	--	--	1
Bromochloromethane	ND	ug/kg	10	--	--	1
Tetrahydrofuran	ND	ug/kg	10	--	--	1
2,2-Dichloropropane	ND	ug/kg	12	--	--	1
1,2-Dibromoethane	ND	ug/kg	10	--	--	1
1,3-Dichloropropane	ND	ug/kg	10	--	--	1
1,1,1,2-Tetrachloroethane	ND	ug/kg	2.5	--	--	1
Bromobenzene	ND	ug/kg	12	--	--	1
n-Butylbenzene	ND	ug/kg	2.5	--	--	1
sec-Butylbenzene	ND	ug/kg	2.5	--	--	1
tert-Butylbenzene	ND	ug/kg	10	--	--	1
o-Chlorotoluene	ND	ug/kg	10	--	--	1
p-Chlorotoluene	ND	ug/kg	10	--	--	1
1,2-Dibromo-3-chloropropane	ND	ug/kg	10	--	--	1
Hexachlorobutadiene	ND	ug/kg	10	--	--	1
Isopropylbenzene	ND	ug/kg	2.5	--	--	1
p-Isopropyltoluene	ND	ug/kg	2.5	--	--	1
Naphthalene	ND	ug/kg	10	--	--	1
n-Propylbenzene	ND	ug/kg	2.5	--	--	1
1,2,3-Trichlorobenzene	ND	ug/kg	10	--	--	1
1,2,4-Trichlorobenzene	ND	ug/kg	10	--	--	1
1,3,5-Trimethylbenzene	ND	ug/kg	10	--	--	1
1,2,4-Trimethylbenzene	ND	ug/kg	10	--	--	1



Project Name: EAST BOSTON

Lab Number: L1703750

Project Number: 43068

Report Date: 02/13/17

**SAMPLE RESULTS**

Lab ID:	L1703750-01	Date Collected:	02/06/17 12:55
Client ID:	VES-S1	Date Received:	02/06/17
Sample Location:	EAST BOSTON, MA	Field Prep:	Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics by 8260/5035 - Westborough Lab						
Diethyl ether	ND	ug/kg	12	--	--	1
Diisopropyl Ether	ND	ug/kg	10	--	--	1
Ethyl-Tert-Butyl-Ether	ND	ug/kg	10	--	--	1
Tertiary-Amyl Methyl Ether	ND	ug/kg	10	--	--	1
1,4-Dioxane	ND	ug/kg	100	--	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	100		70-130
Toluene-d8	96		70-130
4-Bromofluorobenzene	101		70-130
Dibromofluoromethane	99		70-130

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703750  
**Report Date:** 02/13/17

**SAMPLE RESULTS**

Lab ID: L1703750-02  
Client ID: VES-S2  
Sample Location: EAST BOSTON, MA  
Matrix: Soil  
Analytical Method: 97,8260C  
Analytical Date: 02/10/17 13:36  
Analyst: MV  
Percent Solids: 46%

Date Collected: 02/06/17 13:25  
Date Received: 02/06/17  
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics by 8260/5035 - Westborough Lab</b>						
Methylene chloride	ND	ug/kg	16	--	--	1
1,1-Dichloroethane	ND	ug/kg	2.4	--	--	1
Chloroform	ND	ug/kg	2.4	--	--	1
Carbon tetrachloride	ND	ug/kg	1.6	--	--	1
1,2-Dichloropropane	ND	ug/kg	5.7	--	--	1
Dibromochloromethane	ND	ug/kg	1.6	--	--	1
1,1,2-Trichloroethane	ND	ug/kg	2.4	--	--	1
Tetrachloroethene	ND	ug/kg	1.6	--	--	1
Chlorobenzene	ND	ug/kg	1.6	--	--	1
Trichlorofluoromethane	ND	ug/kg	6.5	--	--	1
1,2-Dichloroethane	ND	ug/kg	1.6	--	--	1
1,1,1-Trichloroethane	ND	ug/kg	1.6	--	--	1
Bromodichloromethane	ND	ug/kg	1.6	--	--	1
trans-1,3-Dichloropropene	ND	ug/kg	1.6	--	--	1
cis-1,3-Dichloropropene	ND	ug/kg	1.6	--	--	1
1,3-Dichloropropene, Total	ND	ug/kg	1.6	--	--	1
1,1-Dichloropropene	ND	ug/kg	6.5	--	--	1
Bromoform	ND	ug/kg	6.5	--	--	1
1,1,2,2-Tetrachloroethane	ND	ug/kg	1.6	--	--	1
Benzene	ND	ug/kg	1.6	--	--	1
Toluene	ND	ug/kg	2.4	--	--	1
Ethylbenzene	ND	ug/kg	1.6	--	--	1
Chloromethane	ND	ug/kg	6.5	--	--	1
Bromomethane	ND	ug/kg	3.3	--	--	1
Vinyl chloride	ND	ug/kg	3.3	--	--	1
Chloroethane	ND	ug/kg	3.3	--	--	1
1,1-Dichloroethene	ND	ug/kg	1.6	--	--	1
trans-1,2-Dichloroethene	ND	ug/kg	2.4	--	--	1
Trichloroethene	ND	ug/kg	1.6	--	--	1
1,2-Dichlorobenzene	ND	ug/kg	6.5	--	--	1



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703750  
**Report Date:** 02/13/17

**SAMPLE RESULTS**

Lab ID:	L1703750-02	Date Collected:	02/06/17 13:25			
Client ID:	VES-S2	Date Received:	02/06/17			
Sample Location:	EAST BOSTON, MA	Field Prep:	Not Specified			
Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics by 8260/5035 - Westborough Lab</b>						
1,3-Dichlorobenzene	ND	ug/kg	6.5	--	1	
1,4-Dichlorobenzene	ND	ug/kg	6.5	--	1	
Methyl tert butyl ether	ND	ug/kg	3.3	--	1	
p/m-Xylene	ND	ug/kg	3.3	--	1	
o-Xylene	ND	ug/kg	3.3	--	1	
Xylenes, Total	ND	ug/kg	3.3	--	1	
cis-1,2-Dichloroethene	ND	ug/kg	1.6	--	1	
1,2-Dichloroethene, Total	ND	ug/kg	1.6	--	1	
Dibromomethane	ND	ug/kg	6.5	--	1	
1,2,3-Trichloropropane	ND	ug/kg	6.5	--	1	
Styrene	ND	ug/kg	3.3	--	1	
Dichlorodifluoromethane	ND	ug/kg	16	--	1	
Acetone	400	ug/kg	59	--	1	
Carbon disulfide	ND	ug/kg	6.5	--	1	
Methyl ethyl ketone	99	ug/kg	16	--	1	
Methyl isobutyl ketone	ND	ug/kg	16	--	1	
2-Hexanone	ND	ug/kg	16	--	1	
Bromochloromethane	ND	ug/kg	6.5	--	1	
Tetrahydrofuran	ND	ug/kg	6.5	--	1	
2,2-Dichloropropane	ND	ug/kg	8.2	--	1	
1,2-Dibromoethane	ND	ug/kg	6.5	--	1	
1,3-Dichloropropane	ND	ug/kg	6.5	--	1	
1,1,1,2-Tetrachloroethane	ND	ug/kg	1.6	--	1	
Bromobenzene	ND	ug/kg	8.2	--	1	
n-Butylbenzene	ND	ug/kg	1.6	--	1	
sec-Butylbenzene	ND	ug/kg	1.6	--	1	
tert-Butylbenzene	ND	ug/kg	6.5	--	1	
o-Chlorotoluene	ND	ug/kg	6.5	--	1	
p-Chlorotoluene	ND	ug/kg	6.5	--	1	
1,2-Dibromo-3-chloropropane	ND	ug/kg	6.5	--	1	
Hexachlorobutadiene	ND	ug/kg	6.5	--	1	
Isopropylbenzene	ND	ug/kg	1.6	--	1	
p-Isopropyltoluene	ND	ug/kg	1.6	--	1	
Naphthalene	ND	ug/kg	6.5	--	1	
n-Propylbenzene	ND	ug/kg	1.6	--	1	
1,2,3-Trichlorobenzene	ND	ug/kg	6.5	--	1	
1,2,4-Trichlorobenzene	ND	ug/kg	6.5	--	1	
1,3,5-Trimethylbenzene	ND	ug/kg	6.5	--	1	
1,2,4-Trimethylbenzene	ND	ug/kg	6.5	--	1	

Project Name: EAST BOSTON

Lab Number: L1703750

Project Number: 43068

Report Date: 02/13/17

**SAMPLE RESULTS**

Lab ID: L1703750-02 Date Collected: 02/06/17 13:25  
 Client ID: VES-S2 Date Received: 02/06/17  
 Sample Location: EAST BOSTON, MA Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics by 8260/5035 - Westborough Lab						
Diethyl ether	ND	ug/kg	8.2	--	--	1
Diisopropyl Ether	ND	ug/kg	6.5	--	--	1
Ethyl-Tert-Butyl-Ether	ND	ug/kg	6.5	--	--	1
Tertiary-Amyl Methyl Ether	ND	ug/kg	6.5	--	--	1
1,4-Dioxane	ND	ug/kg	65	--	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	108		70-130
Toluene-d8	103		70-130
4-Bromofluorobenzene	118		70-130
Dibromofluoromethane	102		70-130

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703750  
**Report Date:** 02/13/17

### Method Blank Analysis Batch Quality Control

Analytical Method: 97,8260C  
Analytical Date: 02/09/17 09:53  
Analyst: TE

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics by 8260/5035 - Westborough Lab for sample(s):	01			Batch: WG976794-5	
Methylene chloride	ND		ug/kg	10	--
1,1-Dichloroethane	ND		ug/kg	1.5	--
Chloroform	ND		ug/kg	1.5	--
Carbon tetrachloride	ND		ug/kg	1.0	--
1,2-Dichloropropane	ND		ug/kg	3.5	--
Dibromochloromethane	ND		ug/kg	1.0	--
1,1,2-Trichloroethane	ND		ug/kg	1.5	--
Tetrachloroethene	ND		ug/kg	1.0	--
Chlorobenzene	ND		ug/kg	1.0	--
Trichlorofluoromethane	ND		ug/kg	4.0	--
1,2-Dichloroethane	ND		ug/kg	1.0	--
1,1,1-Trichloroethane	ND		ug/kg	1.0	--
Bromodichloromethane	ND		ug/kg	1.0	--
trans-1,3-Dichloropropene	ND		ug/kg	1.0	--
cis-1,3-Dichloropropene	ND		ug/kg	1.0	--
1,3-Dichloropropene, Total	ND		ug/kg	1.0	--
1,1-Dichloropropene	ND		ug/kg	4.0	--
Bromoform	ND		ug/kg	4.0	--
1,1,2,2-Tetrachloroethane	ND		ug/kg	1.0	--
Benzene	ND		ug/kg	1.0	--
Toluene	ND		ug/kg	1.5	--
Ethylbenzene	ND		ug/kg	1.0	--
Chloromethane	ND		ug/kg	4.0	--
Bromomethane	ND		ug/kg	2.0	--
Vinyl chloride	ND		ug/kg	2.0	--
Chloroethane	ND		ug/kg	2.0	--
1,1-Dichloroethene	ND		ug/kg	1.0	--
trans-1,2-Dichloroethene	ND		ug/kg	1.5	--
Trichloroethene	ND		ug/kg	1.0	--



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703750  
**Report Date:** 02/13/17

### Method Blank Analysis Batch Quality Control

Analytical Method: 97,8260C  
Analytical Date: 02/09/17 09:53  
Analyst: TE

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics by 8260/5035 - Westborough Lab for sample(s):	01		Batch:	WG976794-5	
1,2-Dichlorobenzene	ND		ug/kg	4.0	--
1,3-Dichlorobenzene	ND		ug/kg	4.0	--
1,4-Dichlorobenzene	ND		ug/kg	4.0	--
Methyl tert butyl ether	ND		ug/kg	2.0	--
p/m-Xylene	ND		ug/kg	2.0	--
o-Xylene	ND		ug/kg	2.0	--
Xylenes, Total	ND		ug/kg	2.0	--
cis-1,2-Dichloroethene	ND		ug/kg	1.0	--
1,2-Dichloroethene, Total	ND		ug/kg	1.0	--
Dibromomethane	ND		ug/kg	4.0	--
1,2,3-Trichloropropane	ND		ug/kg	4.0	--
Styrene	ND		ug/kg	2.0	--
Dichlorodifluoromethane	ND		ug/kg	10	--
Acetone	ND		ug/kg	36	--
Carbon disulfide	ND		ug/kg	4.0	--
Methyl ethyl ketone	ND		ug/kg	10	--
Methyl isobutyl ketone	ND		ug/kg	10	--
2-Hexanone	ND		ug/kg	10	--
Bromochloromethane	ND		ug/kg	4.0	--
Tetrahydrofuran	ND		ug/kg	4.0	--
2,2-Dichloropropane	ND		ug/kg	5.0	--
1,2-Dibromoethane	ND		ug/kg	4.0	--
1,3-Dichloropropane	ND		ug/kg	4.0	--
1,1,1,2-Tetrachloroethane	ND		ug/kg	1.0	--
Bromobenzene	ND		ug/kg	5.0	--
n-Butylbenzene	ND		ug/kg	1.0	--
sec-Butylbenzene	ND		ug/kg	1.0	--
tert-Butylbenzene	ND		ug/kg	4.0	--
o-Chlorotoluene	ND		ug/kg	4.0	--



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703750  
**Report Date:** 02/13/17

### Method Blank Analysis Batch Quality Control

Analytical Method: 97,8260C  
Analytical Date: 02/09/17 09:53  
Analyst: TE

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics by 8260/5035 - Westborough Lab for sample(s):	01		Batch:	WG976794-5	
p-Chlorotoluene	ND		ug/kg	4.0	--
1,2-Dibromo-3-chloropropane	ND		ug/kg	4.0	--
Hexachlorobutadiene	ND		ug/kg	4.0	--
Isopropylbenzene	ND		ug/kg	1.0	--
p-Isopropyltoluene	ND		ug/kg	1.0	--
Naphthalene	ND		ug/kg	4.0	--
n-Propylbenzene	ND		ug/kg	1.0	--
1,2,3-Trichlorobenzene	ND		ug/kg	4.0	--
1,2,4-Trichlorobenzene	ND		ug/kg	4.0	--
1,3,5-Trimethylbenzene	ND		ug/kg	4.0	--
1,2,4-Trimethylbenzene	ND		ug/kg	4.0	--
Diethyl ether	ND		ug/kg	5.0	--
Diisopropyl Ether	ND		ug/kg	4.0	--
Ethyl-Tert-Butyl-Ether	ND		ug/kg	4.0	--
Tertiary-Amyl Methyl Ether	ND		ug/kg	4.0	--
1,4-Dioxane	ND		ug/kg	40	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	97		70-130
Toluene-d8	93		70-130
4-Bromofluorobenzene	98		70-130
Dibromofluoromethane	92		70-130

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703750  
**Report Date:** 02/13/17

### Method Blank Analysis Batch Quality Control

Analytical Method: 97,8260C  
Analytical Date: 02/10/17 10:12  
Analyst: MV

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics by 8260/5035 - Westborough Lab for sample(s):	02		Batch:	WG976906-5	
Methylene chloride	ND		ug/kg	10	--
1,1-Dichloroethane	ND		ug/kg	1.5	--
Chloroform	ND		ug/kg	1.5	--
Carbon tetrachloride	ND		ug/kg	1.0	--
1,2-Dichloropropane	ND		ug/kg	3.5	--
Dibromochloromethane	ND		ug/kg	1.0	--
1,1,2-Trichloroethane	ND		ug/kg	1.5	--
Tetrachloroethene	ND		ug/kg	1.0	--
Chlorobenzene	ND		ug/kg	1.0	--
Trichlorofluoromethane	ND		ug/kg	4.0	--
1,2-Dichloroethane	ND		ug/kg	1.0	--
1,1,1-Trichloroethane	ND		ug/kg	1.0	--
Bromodichloromethane	ND		ug/kg	1.0	--
trans-1,3-Dichloropropene	ND		ug/kg	1.0	--
cis-1,3-Dichloropropene	ND		ug/kg	1.0	--
1,3-Dichloropropene, Total	ND		ug/kg	1.0	--
1,1-Dichloropropene	ND		ug/kg	4.0	--
Bromoform	ND		ug/kg	4.0	--
1,1,2,2-Tetrachloroethane	ND		ug/kg	1.0	--
Benzene	ND		ug/kg	1.0	--
Toluene	ND		ug/kg	1.5	--
Ethylbenzene	ND		ug/kg	1.0	--
Chloromethane	ND		ug/kg	4.0	--
Bromomethane	ND		ug/kg	2.0	--
Vinyl chloride	ND		ug/kg	2.0	--
Chloroethane	ND		ug/kg	2.0	--
1,1-Dichloroethene	ND		ug/kg	1.0	--
trans-1,2-Dichloroethene	ND		ug/kg	1.5	--
Trichloroethene	ND		ug/kg	1.0	--



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703750  
**Report Date:** 02/13/17

### Method Blank Analysis Batch Quality Control

Analytical Method: 97,8260C  
Analytical Date: 02/10/17 10:12  
Analyst: MV

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics by 8260/5035 - Westborough Lab for sample(s):	02		Batch:	WG976906-5	
1,2-Dichlorobenzene	ND		ug/kg	4.0	--
1,3-Dichlorobenzene	ND		ug/kg	4.0	--
1,4-Dichlorobenzene	ND		ug/kg	4.0	--
Methyl tert butyl ether	ND		ug/kg	2.0	--
p/m-Xylene	ND		ug/kg	2.0	--
o-Xylene	ND		ug/kg	2.0	--
Xylenes, Total	ND		ug/kg	2.0	--
cis-1,2-Dichloroethene	ND		ug/kg	1.0	--
1,2-Dichloroethene, Total	ND		ug/kg	1.0	--
Dibromomethane	ND		ug/kg	4.0	--
1,4-Dichlorobutane	ND		ug/kg	10	--
1,2,3-Trichloropropane	ND		ug/kg	4.0	--
Styrene	ND		ug/kg	2.0	--
Dichlorodifluoromethane	ND		ug/kg	10	--
Acetone	ND		ug/kg	36	--
Carbon disulfide	ND		ug/kg	4.0	--
Methyl ethyl ketone	ND		ug/kg	10	--
Methyl isobutyl ketone	ND		ug/kg	10	--
2-Hexanone	ND		ug/kg	10	--
Ethyl methacrylate	ND		ug/kg	10	--
Acrylonitrile	ND		ug/kg	4.0	--
Bromochloromethane	ND		ug/kg	4.0	--
Tetrahydrofuran	ND		ug/kg	4.0	--
2,2-Dichloropropane	ND		ug/kg	5.0	--
1,2-Dibromoethane	ND		ug/kg	4.0	--
1,3-Dichloropropane	ND		ug/kg	4.0	--
1,1,1,2-Tetrachloroethane	ND		ug/kg	1.0	--
Bromobenzene	ND		ug/kg	5.0	--
n-Butylbenzene	ND		ug/kg	1.0	--



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703750  
**Report Date:** 02/13/17

**Method Blank Analysis**  
**Batch Quality Control**

Analytical Method: 97,8260C  
Analytical Date: 02/10/17 10:12  
Analyst: MV

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics by 8260/5035 - Westborough Lab for sample(s):	02		Batch:	WG976906-5	
sec-Butylbenzene	ND		ug/kg	1.0	--
tert-Butylbenzene	ND		ug/kg	4.0	--
o-Chlorotoluene	ND		ug/kg	4.0	--
p-Chlorotoluene	ND		ug/kg	4.0	--
1,2-Dibromo-3-chloropropane	ND		ug/kg	4.0	--
Hexachlorobutadiene	ND		ug/kg	4.0	--
Isopropylbenzene	ND		ug/kg	1.0	--
p-Isopropyltoluene	ND		ug/kg	1.0	--
Naphthalene	ND		ug/kg	4.0	--
n-Propylbenzene	ND		ug/kg	1.0	--
1,2,3-Trichlorobenzene	ND		ug/kg	4.0	--
1,2,4-Trichlorobenzene	ND		ug/kg	4.0	--
1,3,5-Trimethylbenzene	ND		ug/kg	4.0	--
1,2,4-Trimethylbenzene	ND		ug/kg	4.0	--
trans-1,4-Dichloro-2-butene	ND		ug/kg	5.0	--
Diethyl ether	ND		ug/kg	5.0	--
Diisopropyl Ether	ND		ug/kg	4.0	--
Ethyl-Tert-Butyl-Ether	ND		ug/kg	4.0	--
Tertiary-Amyl Methyl Ether	ND		ug/kg	4.0	--
1,4-Dioxane	ND		ug/kg	40	--
2-Chloroethylvinyl ether	ND		ug/kg	20	--
Halothane	ND		ug/kg	40	--
Ethyl Acetate	ND		ug/kg	20	--
Freon-113	ND		ug/kg	20	--
Vinyl acetate	ND		ug/kg	10	--

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703750  
**Report Date:** 02/13/17

**Method Blank Analysis**  
**Batch Quality Control**

Analytical Method: 97,8260C  
Analytical Date: 02/10/17 10:12  
Analyst: MV

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics by 8260/5035 - Westborough Lab for sample(s): 02				Batch:	WG976906-5

Surrogate	%Recovery	Qualifier	Acceptance
			Criteria
1,2-Dichloroethane-d4	101		70-130
Toluene-d8	102		70-130
4-Bromofluorobenzene	104		70-130
Dibromofluoromethane	94		70-130

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703750  
**Report Date:** 02/13/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics by 8260/5035 - Westborough Lab Associated sample(s): 01 Batch: WG976794-3 WG976794-4								
Methylene chloride	147	Q	115		70-130	24	Q	20
1,1-Dichloroethane	114		106		70-130	7		20
Chloroform	115		108		70-130	6		20
Carbon tetrachloride	100		92		70-130	8		20
1,2-Dichloropropane	114		109		70-130	4		20
Dibromochloromethane	92		92		70-130	0		20
1,1,2-Trichloroethane	105		105		70-130	0		20
Tetrachloroethene	105		95		70-130	10		20
Chlorobenzene	103		98		70-130	5		20
Trichlorofluoromethane	153	Q	138	Q	70-130	10		20
1,2-Dichloroethane	118		115		70-130	3		20
1,1,1-Trichloroethane	112		103		70-130	8		20
Bromodichloromethane	108		107		70-130	1		20
trans-1,3-Dichloropropene	92		92		70-130	0		20
cis-1,3-Dichloropropene	107		104		70-130	3		20
1,1-Dichloropropene	116		106		70-130	9		20
Bromoform	76		82		70-130	8		20
1,1,2,2-Tetrachloroethane	101		103		70-130	2		20
Benzene	116		109		70-130	6		20
Toluene	104		96		70-130	8		20
Ethylbenzene	105		97		70-130	8		20

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703750  
**Report Date:** 02/13/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics by 8260/5035 - Westborough Lab Associated sample(s): 01 Batch: WG976794-3 WG976794-4								
Chloromethane	97		88		70-130	10		20
Bromomethane	156	Q	142	Q	70-130	9		20
Vinyl chloride	130		115		70-130	12		20
Chloroethane	147	Q	132	Q	70-130	11		20
1,1-Dichloroethene	114		105		70-130	8		20
trans-1,2-Dichloroethene	118		108		70-130	9		20
Trichloroethene	116		107		70-130	8		20
1,2-Dichlorobenzene	99		94		70-130	5		20
1,3-Dichlorobenzene	98		93		70-130	5		20
1,4-Dichlorobenzene	100		93		70-130	7		20
Methyl tert butyl ether	114		114		70-130	0		20
p/m-Xylene	107		99		70-130	8		20
o-Xylene	104		98		70-130	6		20
cis-1,2-Dichloroethene	117		110		70-130	6		20
Dibromomethane	117		117		70-130	0		20
1,2,3-Trichloropropane	105		108		70-130	3		20
Styrene	105		100		70-130	5		20
Dichlorodifluoromethane	93		82		70-130	13		20
Acetone	105		101		70-130	4		20
Carbon disulfide	135	Q	113		70-130	18		20
Methyl ethyl ketone	108		110		70-130	2		20

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703750  
**Report Date:** 02/13/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics by 8260/5035 - Westborough Lab Associated sample(s): 01 Batch: WG976794-3 WG976794-4								
Methyl isobutyl ketone	104		111		70-130	7		20
2-Hexanone	94		99		70-130	5		20
Bromochloromethane	120		117		70-130	3		20
Tetrahydrofuran	116		119		70-130	3		20
2,2-Dichloropropane	101		94		70-130	7		20
1,2-Dibromoethane	103		106		70-130	3		20
1,3-Dichloropropane	104		103		70-130	1		20
1,1,1,2-Tetrachloroethane	90		88		70-130	2		20
Bromobenzene	97		93		70-130	4		20
n-Butylbenzene	104		95		70-130	9		20
sec-Butylbenzene	102		93		70-130	9		20
tert-Butylbenzene	100		92		70-130	8		20
o-Chlorotoluene	100		79		70-130	23	Q	20
p-Chlorotoluene	100		94		70-130	6		20
1,2-Dibromo-3-chloropropane	86		90		70-130	5		20
Hexachlorobutadiene	94		86		70-130	9		20
Isopropylbenzene	99		92		70-130	7		20
p-Isopropyltoluene	102		93		70-130	9		20
Naphthalene	99		100		70-130	1		20
n-Propylbenzene	102		94		70-130	8		20
1,2,3-Trichlorobenzene	96		93		70-130	3		20

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703750  
**Report Date:** 02/13/17

<b>Parameter</b>	<i>LCS</i> <i>%Recovery</i>	<i>Qual</i>	<i>LCSD</i> <i>%Recovery</i>	<i>Qual</i>	<i>%Recovery</i> <i>Limits</i>	<i>RPD</i>	<i>Qual</i>	<i>RPD</i> <i>Limits</i>
MCP Volatile Organics by 8260/5035 - Westborough Lab Associated sample(s): 01 Batch: WG976794-3 WG976794-4								
1,2,4-Trichlorobenzene	98		92		70-130	6		20
1,3,5-Trimethylbenzene	101		94		70-130	7		20
1,2,4-Trimethylbenzene	100		95		70-130	5		20
Diethyl ether	139	Q	121		70-130	14		20
Diisopropyl Ether	107		102		70-130	5		20
Ethyl-Tert-Butyl-Ether	108		106		70-130	2		20
Tertiary-Amyl Methyl Ether	108		105		70-130	3		20
1,4-Dioxane	132	Q	142	Q	70-130	7		20

<b>Surrogate</b>	<i>LCS</i> <i>%Recovery</i>	<i>Qual</i>	<i>LCSD</i> <i>%Recovery</i>	<i>Qual</i>	<b>Acceptance Criteria</b>
1,2-Dichloroethane-d4	100		101		70-130
Toluene-d8	94		93		70-130
4-Bromofluorobenzene	96		96		70-130
Dibromofluoromethane	101		101		70-130

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703750  
**Report Date:** 02/13/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics by 8260/5035 - Westborough Lab Associated sample(s): 02 Batch: WG976906-3 WG976906-4								
Methylene chloride	122		125		70-130	2		20
1,1-Dichloroethane	106		104		70-130	2		20
Chloroform	104		104		70-130	0		20
Carbon tetrachloride	104		101		70-130	3		20
1,2-Dichloropropane	103		105		70-130	2		20
Dibromochloromethane	97		100		70-130	3		20
1,1,2-Trichloroethane	102		104		70-130	2		20
Tetrachloroethene	103		98		70-130	5		20
Chlorobenzene	100		99		70-130	1		20
Trichlorofluoromethane	103		98		70-130	5		20
1,2-Dichloroethane	105		106		70-130	1		20
1,1,1-Trichloroethane	107		105		70-130	2		20
Bromodichloromethane	100		101		70-130	1		20
trans-1,3-Dichloropropene	101		102		70-130	1		20
cis-1,3-Dichloropropene	102		103		70-130	1		20
1,1-Dichloropropene	109		105		70-130	4		20
Bromoform	94		97		70-130	3		20
1,1,2,2-Tetrachloroethane	99		102		70-130	3		20
Benzene	104		103		70-130	1		20
Toluene	103		101		70-130	2		20
Ethylbenzene	105		102		70-130	3		20

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703750  
**Report Date:** 02/13/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics by 8260/5035 - Westborough Lab Associated sample(s): 02 Batch: WG976906-3 WG976906-4								
Chloromethane	105		104		70-130	1		20
Bromomethane	105		105		70-130	0		20
Vinyl chloride	106		100		70-130	6		20
Chloroethane	117		112		70-130	4		20
1,1-Dichloroethene	104		101		70-130	3		20
trans-1,2-Dichloroethene	104		103		70-130	1		20
Trichloroethene	106		103		70-130	3		20
1,2-Dichlorobenzene	98		99		70-130	1		20
1,3-Dichlorobenzene	100		100		70-130	0		20
1,4-Dichlorobenzene	101		100		70-130	1		20
Methyl tert butyl ether	101		103		70-130	2		20
p/m-Xylene	104		102		70-130	2		20
o-Xylene	102		101		70-130	1		20
cis-1,2-Dichloroethene	102		102		70-130	0		20
Dibromomethane	100		103		70-130	3		20
1,4-Dichlorobutane	102		105		70-130	3		20
1,2,3-Trichloropropane	102		105		70-130	3		20
Styrene	102		101		70-130	1		20
Dichlorodifluoromethane	89		86		70-130	3		20
Acetone	102		100		70-130	2		20
Carbon disulfide	108		98		70-130	10		20

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703750  
**Report Date:** 02/13/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics by 8260/5035 - Westborough Lab Associated sample(s): 02 Batch: WG976906-3 WG976906-4								
Methyl ethyl ketone	92		97		70-130	5		20
Methyl isobutyl ketone	92		95		70-130	3		20
2-Hexanone	95		100		70-130	5		20
Ethyl methacrylate	89		90		70-130	1		20
Acrylonitrile	103		107		70-130	4		20
Bromochloromethane	100		100		70-130	0		20
Tetrahydrofuran	106		110		70-130	4		20
2,2-Dichloropropane	109		107		70-130	2		20
1,2-Dibromoethane	98		101		70-130	3		20
1,3-Dichloropropane	103		104		70-130	1		20
1,1,1,2-Tetrachloroethane	100		99		70-130	1		20
Bromobenzene	97		98		70-130	1		20
n-Butylbenzene	109		106		70-130	3		20
sec-Butylbenzene	106		104		70-130	2		20
tert-Butylbenzene	104		101		70-130	3		20
o-Chlorotoluene	105		104		70-130	1		20
p-Chlorotoluene	106		105		70-130	1		20
1,2-Dibromo-3-chloropropane	85		87		70-130	2		20
Hexachlorobutadiene	95		93		70-130	2		20
Isopropylbenzene	105		102		70-130	3		20
p-Isopropyltoluene	106		104		70-130	2		20

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703750  
**Report Date:** 02/13/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics by 8260/5035 - Westborough Lab Associated sample(s): 02 Batch: WG976906-3 WG976906-4								
Naphthalene	96		100		70-130	4		20
n-Propylbenzene	107		104		70-130	3		20
1,2,3-Trichlorobenzene	95		96		70-130	1		20
1,2,4-Trichlorobenzene	97		98		70-130	1		20
1,3,5-Trimethylbenzene	105		103		70-130	2		20
1,2,4-Trimethylbenzene	104		103		70-130	1		20
trans-1,4-Dichloro-2-butene	104		108		70-130	4		20
Diethyl ether	101		103		70-130	2		20
Diisopropyl Ether	105		107		70-130	2		20
tert-Butyl Alcohol <sup>1</sup>	97		100		70-130	3		20
Ethyl-Tert-Butyl-Ether	102		105		70-130	3		20
Tertiary-Amyl Methyl Ether	100		103		70-130	3		20
1,4-Dioxane	81		85		70-130	5		20
2-Chloroethylvinyl ether	101		105		70-130	4		20
Halothane	102		99		70-130	3		20
Ethyl Acetate	101		108		70-130	7		20
Freon-113	98		94		70-130	4		20
Vinyl acetate	104		108		70-130	4		20

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703750  
**Report Date:** 02/13/17

<b>Parameter</b>	<i>LCS</i> <i>%Recovery</i>	<i>Qual</i>	<i>LCSD</i> <i>%Recovery</i>	<i>Qual</i>	<i>%Recovery</i> <i>Limits</i>	<i>RPD</i>	<i>Qual</i>	<i>RPD</i> <i>Limits</i>
MCP Volatile Organics by 8260/5035 - Westborough Lab Associated sample(s): 02 Batch: WG976906-3 WG976906-4								
<b>Surrogate</b>	<i>LCS</i> <i>%Recovery</i>	<i>Qual</i>	<i>LCSD</i> <i>%Recovery</i>	<i>Qual</i>	<i>Acceptance</i> <i>Criteria</i>			
1,2-Dichloroethane-d4	101		102		70-130			
Toluene-d8	101		100		70-130			
4-Bromofluorobenzene	103		104		70-130			
Dibromofluoromethane	99		101		70-130			

# **SEMIVOLATILES**



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703750  
**Report Date:** 02/13/17

**SAMPLE RESULTS**

Lab ID: L1703750-01  
Client ID: VES-S1  
Sample Location: EAST BOSTON, MA  
Matrix: Soil  
Analytical Method: 97,8270D  
Analytical Date: 02/11/17 06:35  
Analyst: CB  
Percent Solids: 37%

Date Collected: 02/06/17 12:55  
Date Received: 02/06/17  
Field Prep: Not Specified  
Extraction Method: EPA 3546  
Extraction Date: 02/08/17 16:03

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Semivolatile Organics - Westborough Lab</b>						
Acenaphthene	ND	ug/kg	350	--	--	1
1,2,4-Trichlorobenzene	ND	ug/kg	440	--	--	1
Hexachlorobenzene	ND	ug/kg	260	--	--	1
Bis(2-chloroethyl)ether	ND	ug/kg	400	--	--	1
2-Chloronaphthalene	ND	ug/kg	440	--	--	1
1,2-Dichlorobenzene	ND	ug/kg	440	--	--	1
1,3-Dichlorobenzene	ND	ug/kg	440	--	--	1
1,4-Dichlorobenzene	ND	ug/kg	440	--	--	1
3,3'-Dichlorobenzidine	ND	ug/kg	440	--	--	1
2,4-Dinitrotoluene	ND	ug/kg	440	--	--	1
2,6-Dinitrotoluene	ND	ug/kg	440	--	--	1
Azobenzene	ND	ug/kg	440	--	--	1
Fluoranthene	920	ug/kg	260	--	--	1
4-Bromophenyl phenyl ether	ND	ug/kg	440	--	--	1
Bis(2-chloroisopropyl)ether	ND	ug/kg	530	--	--	1
Bis(2-chloroethoxy)methane	ND	ug/kg	480	--	--	1
Hexachlorobutadiene	ND	ug/kg	440	--	--	1
Hexachloroethane	ND	ug/kg	350	--	--	1
Isophorone	ND	ug/kg	400	--	--	1
Naphthalene	ND	ug/kg	440	--	--	1
Nitrobenzene	ND	ug/kg	400	--	--	1
Bis(2-ethylhexyl)phthalate	ND	ug/kg	440	--	--	1
Butyl benzyl phthalate	ND	ug/kg	440	--	--	1
Di-n-butylphthalate	ND	ug/kg	440	--	--	1
Di-n-octylphthalate	ND	ug/kg	440	--	--	1
Diethyl phthalate	ND	ug/kg	440	--	--	1
Dimethyl phthalate	ND	ug/kg	440	--	--	1
Benzo(a)anthracene	460	ug/kg	260	--	--	1
Benzo(a)pyrene	490	ug/kg	350	--	--	1
Benzo(b)fluoranthene	730	ug/kg	260	--	--	1



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703750  
**Report Date:** 02/13/17

**SAMPLE RESULTS**

Lab ID:	L1703750-01	Date Collected:	02/06/17 12:55
Client ID:	VES-S1	Date Received:	02/06/17
Sample Location:	EAST BOSTON, MA	Field Prep:	Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Semivolatile Organics - Westborough Lab</b>						
Benzo(k)fluoranthene	ND	ug/kg	260	--	--	1
Chrysene	540	ug/kg	260	--	--	1
Acenaphthylene	ND	ug/kg	350	--	--	1
Anthracene	ND	ug/kg	260	--	--	1
Benzo(ghi)perylene	350	ug/kg	350	--	--	1
Fluorene	ND	ug/kg	440	--	--	1
Phenanthrene	460	ug/kg	260	--	--	1
Dibenzo(a,h)anthracene	ND	ug/kg	260	--	--	1
Indeno(1,2,3-cd)pyrene	370	ug/kg	350	--	--	1
Pyrene	820	ug/kg	260	--	--	1
Aniline	ND	ug/kg	530	--	--	1
4-Chloroaniline	ND	ug/kg	440	--	--	1
Dibenzofuran	ND	ug/kg	440	--	--	1
2-Methylnaphthalene	ND	ug/kg	530	--	--	1
Acetophenone	ND	ug/kg	440	--	--	1
2,4,6-Trichlorophenol	ND	ug/kg	260	--	--	1
2-Chlorophenol	ND	ug/kg	440	--	--	1
2,4-Dichlorophenol	ND	ug/kg	400	--	--	1
2,4-Dimethylphenol	ND	ug/kg	440	--	--	1
2-Nitrophenol	ND	ug/kg	950	--	--	1
4-Nitrophenol	ND	ug/kg	620	--	--	1
2,4-Dinitrophenol	ND	ug/kg	2100	--	--	1
Pentachlorophenol	ND	ug/kg	880	--	--	1
Phenol	ND	ug/kg	440	--	--	1
2-Methylphenol	ND	ug/kg	440	--	--	1
3-Methylphenol/4-Methylphenol	ND	ug/kg	630	--	--	1
2,4,5-Trichlorophenol	ND	ug/kg	440	--	--	1
Pyridine	ND	ug/kg	480	--	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	70		30-130
Phenol-d6	73		30-130
Nitrobenzene-d5	81		30-130
2-Fluorobiphenyl	76		30-130
2,4,6-Tribromophenol	84		30-130
4-Terphenyl-d14	74		30-130

**Project Name:** EAST BOSTON  
**Project Number:** 43068

Serial\_No:02131714:54

**Lab Number:** L1703750  
**Report Date:** 02/13/17

### SAMPLE RESULTS

Lab ID: L1703750-02  
Client ID: VES-S2  
Sample Location: EAST BOSTON, MA  
Matrix: Soil  
Analytical Method: 97,8270D  
Analytical Date: 02/11/17 07:00  
Analyst: CB  
Percent Solids: 46%

Date Collected: 02/06/17 13:25  
Date Received: 02/06/17  
Field Prep: Not Specified  
Extraction Method: EPA 3546  
Extraction Date: 02/08/17 16:03

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Semivolatile Organics - Westborough Lab						
Acenaphthene	ND	ug/kg	290	--	--	1
1,2,4-Trichlorobenzene	ND	ug/kg	360	--	--	1
Hexachlorobenzene	ND	ug/kg	220	--	--	1
Bis(2-chloroethyl)ether	ND	ug/kg	320	--	--	1
2-Chloronaphthalene	ND	ug/kg	360	--	--	1
1,2-Dichlorobenzene	ND	ug/kg	360	--	--	1
1,3-Dichlorobenzene	ND	ug/kg	360	--	--	1
1,4-Dichlorobenzene	ND	ug/kg	360	--	--	1
3,3'-Dichlorobenzidine	ND	ug/kg	360	--	--	1
2,4-Dinitrotoluene	ND	ug/kg	360	--	--	1
2,6-Dinitrotoluene	ND	ug/kg	360	--	--	1
Azobenzene	ND	ug/kg	360	--	--	1
Fluoranthene	ND	ug/kg	220	--	--	1
4-Bromophenyl phenyl ether	ND	ug/kg	360	--	--	1
Bis(2-chloroisopropyl)ether	ND	ug/kg	430	--	--	1
Bis(2-chloroethoxy)methane	ND	ug/kg	390	--	--	1
Hexachlorobutadiene	ND	ug/kg	360	--	--	1
Hexachloroethane	ND	ug/kg	290	--	--	1
Isophorone	ND	ug/kg	320	--	--	1
Naphthalene	ND	ug/kg	360	--	--	1
Nitrobenzene	ND	ug/kg	320	--	--	1
Bis(2-ethylhexyl)phthalate	ND	ug/kg	360	--	--	1
Butyl benzyl phthalate	ND	ug/kg	360	--	--	1
Di-n-butylphthalate	ND	ug/kg	360	--	--	1
Di-n-octylphthalate	ND	ug/kg	360	--	--	1
Diethyl phthalate	ND	ug/kg	360	--	--	1
Dimethyl phthalate	ND	ug/kg	360	--	--	1
Benzo(a)anthracene	ND	ug/kg	220	--	--	1
Benzo(a)pyrene	ND	ug/kg	290	--	--	1
Benzo(b)fluoranthene	ND	ug/kg	220	--	--	1



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703750  
**Report Date:** 02/13/17

**SAMPLE RESULTS**

Lab ID:	L1703750-02	Date Collected:	02/06/17 13:25
Client ID:	VES-S2	Date Received:	02/06/17
Sample Location:	EAST BOSTON, MA	Field Prep:	Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Semivolatile Organics - Westborough Lab</b>						
Benzo(k)fluoranthene	ND	ug/kg	220	--	--	1
Chrysene	ND	ug/kg	220	--	--	1
Acenaphthylene	ND	ug/kg	290	--	--	1
Anthracene	ND	ug/kg	220	--	--	1
Benzo(ghi)perylene	ND	ug/kg	290	--	--	1
Fluorene	ND	ug/kg	360	--	--	1
Phenanthrene	ND	ug/kg	220	--	--	1
Dibenzo(a,h)anthracene	ND	ug/kg	220	--	--	1
Indeno(1,2,3-cd)pyrene	ND	ug/kg	290	--	--	1
Pyrene	ND	ug/kg	220	--	--	1
Aniline	ND	ug/kg	430	--	--	1
4-Chloroaniline	ND	ug/kg	360	--	--	1
Dibenzofuran	ND	ug/kg	360	--	--	1
2-Methylnaphthalene	ND	ug/kg	430	--	--	1
Acetophenone	ND	ug/kg	360	--	--	1
2,4,6-Trichlorophenol	ND	ug/kg	220	--	--	1
2-Chlorophenol	ND	ug/kg	360	--	--	1
2,4-Dichlorophenol	ND	ug/kg	320	--	--	1
2,4-Dimethylphenol	ND	ug/kg	360	--	--	1
2-Nitrophenol	ND	ug/kg	780	--	--	1
4-Nitrophenol	ND	ug/kg	500	--	--	1
2,4-Dinitrophenol	ND	ug/kg	1700	--	--	1
Pentachlorophenol	ND	ug/kg	720	--	--	1
Phenol	ND	ug/kg	360	--	--	1
2-Methylphenol	ND	ug/kg	360	--	--	1
3-Methylphenol/4-Methylphenol	ND	ug/kg	520	--	--	1
2,4,5-Trichlorophenol	ND	ug/kg	360	--	--	1
Pyridine	ND	ug/kg	390	--	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	52		30-130
Phenol-d6	60		30-130
Nitrobenzene-d5	58		30-130
2-Fluorobiphenyl	68		30-130
2,4,6-Tribromophenol	77		30-130
4-Terphenyl-d14	80		30-130

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703750  
**Report Date:** 02/13/17

### Method Blank Analysis Batch Quality Control

Analytical Method: 97,8270D  
Analytical Date: 02/11/17 02:17  
Analyst: CB

Extraction Method: EPA 3546  
Extraction Date: 02/08/17 16:03

Parameter	Result	Qualifier	Units	RL	MDL
MCP Semivolatile Organics - Westborough Lab for sample(s): 01-02 Batch: WG976440-1					
Acenaphthene	ND		ug/kg	130	--
1,2,4-Trichlorobenzene	ND		ug/kg	160	--
Hexachlorobenzene	ND		ug/kg	98	--
Bis(2-chloroethyl)ether	ND		ug/kg	150	--
2-Chloronaphthalene	ND		ug/kg	160	--
1,2-Dichlorobenzene	ND		ug/kg	160	--
1,3-Dichlorobenzene	ND		ug/kg	160	--
1,4-Dichlorobenzene	ND		ug/kg	160	--
3,3'-Dichlorobenzidine	ND		ug/kg	160	--
2,4-Dinitrotoluene	ND		ug/kg	160	--
2,6-Dinitrotoluene	ND		ug/kg	160	--
Azobenzene	ND		ug/kg	160	--
Fluoranthene	ND		ug/kg	98	--
4-Bromophenyl phenyl ether	ND		ug/kg	160	--
Bis(2-chloroisopropyl)ether	ND		ug/kg	200	--
Bis(2-chloroethoxy)methane	ND		ug/kg	180	--
Hexachlorobutadiene	ND		ug/kg	160	--
Hexachloroethane	ND		ug/kg	130	--
Isophorone	ND		ug/kg	150	--
Naphthalene	ND		ug/kg	160	--
Nitrobenzene	ND		ug/kg	150	--
Bis(2-ethylhexyl)phthalate	ND		ug/kg	160	--
Butyl benzyl phthalate	ND		ug/kg	160	--
Di-n-butylphthalate	ND		ug/kg	160	--
Di-n-octylphthalate	ND		ug/kg	160	--
Diethyl phthalate	ND		ug/kg	160	--
Dimethyl phthalate	ND		ug/kg	160	--
Benzo(a)anthracene	ND		ug/kg	98	--
Benzo(a)pyrene	ND		ug/kg	130	--



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703750  
**Report Date:** 02/13/17

### Method Blank Analysis Batch Quality Control

Analytical Method: 97,8270D  
Analytical Date: 02/11/17 02:17  
Analyst: CB

Extraction Method: EPA 3546  
Extraction Date: 02/08/17 16:03

Parameter	Result	Qualifier	Units	RL	MDL
MCP Semivolatile Organics - Westborough Lab for sample(s): 01-02 Batch: WG976440-1					
Benzo(b)fluoranthene	ND		ug/kg	98	--
Benzo(k)fluoranthene	ND		ug/kg	98	--
Chrysene	ND		ug/kg	98	--
Acenaphthylene	ND		ug/kg	130	--
Anthracene	ND		ug/kg	98	--
Benzo(ghi)perylene	ND		ug/kg	130	--
Fluorene	ND		ug/kg	160	--
Phenanthrene	ND		ug/kg	98	--
Dibenzo(a,h)anthracene	ND		ug/kg	98	--
Indeno(1,2,3-cd)pyrene	ND		ug/kg	130	--
Pyrene	ND		ug/kg	98	--
Aniline	ND		ug/kg	200	--
4-Chloroaniline	ND		ug/kg	160	--
Dibenzofuran	ND		ug/kg	160	--
2-Methylnaphthalene	ND		ug/kg	200	--
Acetophenone	ND		ug/kg	160	--
2,4,6-Trichlorophenol	ND		ug/kg	98	--
2-Chlorophenol	ND		ug/kg	160	--
2,4-Dichlorophenol	ND		ug/kg	150	--
2,4-Dimethylphenol	ND		ug/kg	160	--
2-Nitrophenol	ND		ug/kg	350	--
4-Nitrophenol	ND		ug/kg	230	--
2,4-Dinitrophenol	ND		ug/kg	780	--
Pentachlorophenol	ND		ug/kg	330	--
Phenol	ND		ug/kg	160	--
2-Methylphenol	ND		ug/kg	160	--
3-Methylphenol/4-Methylphenol	ND		ug/kg	240	--
2,4,5-Trichlorophenol	ND		ug/kg	160	--
Pyridine	ND		ug/kg	180	--



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703750  
**Report Date:** 02/13/17

### **Method Blank Analysis**

#### **Batch Quality Control**

Analytical Method: 97,8270D  
Analytical Date: 02/11/17 02:17  
Analyst: CB

Extraction Method: EPA 3546  
Extraction Date: 02/08/17 16:03

Parameter	Result	Qualifier	Units	RL	MDL
MCP Semivolatile Organics - Westborough Lab for sample(s):	01-02		Batch:	WG976440-1	

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	78		30-130
Phenol-d6	80		30-130
Nitrobenzene-d5	77		30-130
2-Fluorobiphenyl	75		30-130
2,4,6-Tribromophenol	62		30-130
4-Terphenyl-d14	82		30-130

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703750  
**Report Date:** 02/13/17

<b>Parameter</b>	<i>LCS</i> <b>%Recovery</b>	<i>LCS</i> <b>%Recovery</b>	<i>%Recovery</i> <b>Limits</b>	<i>RPD</i> <b>Qual</b>	<i>RPD</i> <b>Limits</b>
	<b>Qual</b>	<b>Qual</b>	<b>Limits</b>	<b>Qual</b>	
MCP Semivolatile Organics - Westborough Lab Associated sample(s): 01-02 Batch: WG976440-2 WG976440-3					
Acenaphthene	72	76	40-140	5	30
1,2,4-Trichlorobenzene	71	74	40-140	4	30
Hexachlorobenzene	75	76	40-140	1	30
Bis(2-chloroethyl)ether	74	78	40-140	5	30
2-Chloronaphthalene	72	76	40-140	5	30
1,2-Dichlorobenzene	72	74	40-140	3	30
1,3-Dichlorobenzene	70	73	40-140	4	30
1,4-Dichlorobenzene	70	72	40-140	3	30
3,3'-Dichlorobenzidine	38	Q	40-140	5	30
2,4-Dinitrotoluene	78	82	40-140	5	30
2,6-Dinitrotoluene	83	90	40-140	8	30
Azobenzene	78	81	40-140	4	30
Fluoranthene	76	81	40-140	6	30
4-Bromophenyl phenyl ether	74	77	40-140	4	30
Bis(2-chloroisopropyl)ether	76	80	40-140	5	30
Bis(2-chloroethoxy)methane	74	78	40-140	5	30
Hexachlorobutadiene	72	75	40-140	4	30
Hexachloroethane	71	73	40-140	3	30
Isophorone	73	77	40-140	5	30
Naphthalene	72	75	40-140	4	30
Nitrobenzene	78	84	40-140	7	30

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703750  
**Report Date:** 02/13/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Semivolatile Organics - Westborough Lab Associated sample(s): 01-02 Batch: WG976440-2 WG976440-3								
Bis(2-ethylhexyl)phthalate	78		83		40-140	6		30
Butyl benzyl phthalate	77		80		40-140	4		30
Di-n-butylphthalate	78		82		40-140	5		30
Di-n-octylphthalate	75		81		40-140	8		30
Diethyl phthalate	74		78		40-140	5		30
Dimethyl phthalate	73		78		40-140	7		30
Benzo(a)anthracene	73		78		40-140	7		30
Benzo(a)pyrene	71		76		40-140	7		30
Benzo(b)fluoranthene	72		77		40-140	7		30
Benzo(k)fluoranthene	72		77		40-140	7		30
Chrysene	72		76		40-140	5		30
Acenaphthylene	76		81		40-140	6		30
Anthracene	75		80		40-140	6		30
Benzo(ghi)perylene	72		78		40-140	8		30
Fluorene	74		77		40-140	4		30
Phenanthrene	73		77		40-140	5		30
Dibenz(a,h)anthracene	72		77		40-140	7		30
Indeno(1,2,3-cd)pyrene	71		76		40-140	7		30
Pyrene	75		79		40-140	5		30
Aniline	38	Q	37	Q	40-140	3		30
4-Chloroaniline	68		72		40-140	6		30

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703750  
**Report Date:** 02/13/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Semivolatile Organics - Westborough Lab Associated sample(s): 01-02 Batch: WG976440-2 WG976440-3								
1-Methylnaphthalene <sup>1</sup>	74		78		40-140	5		30
Dibenzofuran	73		76		40-140	4		30
2-Methylnaphthalene	72		76		40-140	5		30
Acetophenone	76		80		40-140	5		30
n-Nitrosodimethylamine	76		79		22-100	4		30
2,4,6-Trichlorophenol	76		82		30-130	8		30
2-Chlorophenol	75		80		30-130	6		30
2,4-Dichlorophenol	75		80		30-130	6		30
2,4-Dimethylphenol	84		89		30-130	6		30
2-Nitrophenol	73		80		30-130	9		30
4-Nitrophenol	84		88		30-130	5		30
2,4-Dinitrophenol	62		55		30-130	12		30
Pentachlorophenol	57		58		30-130	2		30
Phenol	75		79		30-130	5		30
2-Methylphenol	78		83		30-130	6		30
3-Methylphenol/4-Methylphenol	78		84		30-130	7		30
2,4,5-Trichlorophenol	74		81		30-130	9		30
Pyridine	63		68		30-130	8		30
4-Chlorophenyl phenyl ether	74		77		40-140	4		30
Hexachlorocyclopentadiene	68		70		40-140	3		30
NitrosoDiPhenylAmine(NDPA)/DPA	75		79		40-140	5		30

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703750  
**Report Date:** 02/13/17

<b>Parameter</b>	<i>LCS</i> <i>%Recovery</i>	<i>Qual</i>	<i>LCSD</i> <i>%Recovery</i>	<i>Qual</i>	<i>%Recovery</i> <i>Limits</i>	<i>RPD</i>	<i>Qual</i>	<i>RPD</i> <i>Limits</i>
MCP Semivolatile Organics - Westborough Lab Associated sample(s): 01-02 Batch: WG976440-2 WG976440-3								
n-Nitrosodi-n-propylamine	75		79		40-140	5		30
2-Nitroaniline	78		86		40-140	10		30
3-Nitroaniline	75		80		40-140	6		30
4-Nitroaniline	75		80		40-140	6		30
P-Chloro-M-Cresol	78		84		30-130	7		30
4,6-Dinitro-o-cresol	74		78		30-130	5		30
Carbazole	75		80		40-140	6		30

<b>Surrogate</b>	<i>LCS</i> <i>%Recovery</i>	<i>Qual</i>	<i>LCSD</i> <i>%Recovery</i>	<i>Qual</i>	<b>Acceptance Criteria</b>
					30-130
2-Fluorophenol	76		79		30-130
Phenol-d6	76		80		30-130
Nitrobenzene-d5	74		78		30-130
2-Fluorobiphenyl	70		74		30-130
2,4,6-Tribromophenol	74		77		30-130
4-Terphenyl-d14	75		78		30-130

# PETROLEUM HYDROCARBONS



Project Name: EAST BOSTON

Lab Number: L1703750

Project Number: 43068

Report Date: 02/13/17

**SAMPLE RESULTS**

Lab ID: L1703750-01  
 Client ID: VES-S1  
 Sample Location: EAST BOSTON, MA  
 Matrix: Soil  
 Analytical Method: 1,8015C(M)  
 Analytical Date: 02/09/17 22:55  
 Analyst: SR  
 Percent Solids: 37%

Date Collected: 02/06/17 12:55  
 Date Received: 02/06/17  
 Field Prep: Not Specified  
 Extraction Method: EPA 3546  
 Extraction Date: 02/08/17 19:03

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Petroleum Hydrocarbon Quantitation - Westborough Lab						
TPH	153000		ug/kg	88400	--	1
Surrogate	% Recovery	Qualifier	Acceptance Criteria			
o-Terphenyl	101		40-140			

Project Name: EAST BOSTON

Lab Number: L1703750

Project Number: 43068

Report Date: 02/13/17

**SAMPLE RESULTS**

Lab ID: L1703750-02  
 Client ID: VES-S2  
 Sample Location: EAST BOSTON, MA  
 Matrix: Soil  
 Analytical Method: 1,8015C(M)  
 Analytical Date: 02/09/17 23:27  
 Analyst: DG  
 Percent Solids: 46%

Date Collected: 02/06/17 13:25  
 Date Received: 02/06/17  
 Field Prep: Not Specified  
 Extraction Method: EPA 3546  
 Extraction Date: 02/08/17 19:03

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Petroleum Hydrocarbon Quantitation - Westborough Lab						
TPH	146000		ug/kg	70600	--	1
Surrogate	% Recovery	Qualifier	Acceptance Criteria			
o-Terphenyl	103		40-140			

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703750  
**Report Date:** 02/13/17

**Method Blank Analysis**  
**Batch Quality Control**

Analytical Method: 1,8015C(M)  
Analytical Date: 02/09/17 21:17  
Analyst: SR

Extraction Method: EPA 3546  
Extraction Date: 02/08/17 19:03

Parameter	Result	Qualifier	Units	RL	MDL
Petroleum Hydrocarbon Quantitation - Westborough Lab for sample(s): 01-02 Batch: WG976489-1					
TPH	ND		ug/kg	33100	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
o-Terphenyl	100		40-140

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703750  
**Report Date:** 02/13/17

<b>Parameter</b>	<i>LCS</i> %Recovery	<i>Qual</i>	<i>LCSD</i> %Recovery	<i>Qual</i>	<i>%Recovery</i> <i>Limits</i>	<i>RPD</i>	<i>Qual</i>	<i>RPD</i> <i>Limits</i>
Petroleum Hydrocarbon Quantitation - Westborough Lab Associated sample(s): 01-02 Batch: WG976489-2								
TPH	94	-	-	-	40-140	-	-	40

<b>Surrogate</b>	<i>LCS</i> %Recovery	<i>Qual</i>	<i>LCSD</i> %Recovery	<i>Qual</i>	<i>Acceptance</i> <i>Criteria</i>
o-Terphenyl					
o-Terphenyl	97	-	-	-	40-140

Project Name: EAST BOSTON  
 Project Number: 43068

**Lab Duplicate Analysis**  
**Batch Quality Control**

Lab Number: L1703750  
 Report Date: 02/13/17

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Petroleum Hydrocarbon Quantitation - Westborough Lab Associated sample(s): 01-02 QC Batch ID: WG976489-3 QC Sample: L1703750-01 Client ID: VES-S1						
TPH	153000	122000	ug/kg	23		40

Surrogate	%Recovery	Qualifier	%Recovery	Qualifier	Acceptance Criteria
o-Terphenyl	101		91		40-140

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703750  
**Report Date:** 02/13/17

### SAMPLE RESULTS

Lab ID:	L1703750-01	Date Collected:	02/06/17 12:55
Client ID:	VES-S1	Date Received:	02/06/17
Sample Location:	EAST BOSTON, MA	Field Prep:	Not Specified
Matrix:	Soil		
Analytical Method:	100,VPH-04-1.1		
Analytical Date:	02/10/17 21:11		
Analyst:	KD		
Percent Solids:	37%		

### Quality Control Information

Condition of sample received:	Satisfactory
Sample Temperature upon receipt:	Received on Ice
Were samples received in methanol?	Yes (Covering the Soil)
Methanol ratio:	1:1 +/- 25%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>Volatile Petroleum Hydrocarbons - Westborough Lab</b>						
C5-C8 Aliphatics	ND		mg/kg	12.4	--	1
C9-C12 Aliphatics	ND		mg/kg	12.4	--	1
C9-C10 Aromatics	ND		mg/kg	12.4	--	1
C5-C8 Aliphatics, Adjusted	ND		mg/kg	12.4	--	1
C9-C12 Aliphatics, Adjusted	ND		mg/kg	12.4	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2,5-Dibromotoluene-PID	89		70-130
2,5-Dibromotoluene-FID	91		70-130

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703750  
**Report Date:** 02/13/17

### SAMPLE RESULTS

Lab ID:	L1703750-01	Date Collected:	02/06/17 12:55
Client ID:	VES-S1	Date Received:	02/06/17
Sample Location:	EAST BOSTON, MA	Field Prep:	Not Specified
Matrix:	Soil	Extraction Method:	EPA 3546
Analytical Method:	98,EPH-04-1.1	Extraction Date:	02/08/17 07:34
Analytical Date:	02/09/17 12:12	Cleanup Method1:	EPH-04-1
Analyst:	SR	Cleanup Date1:	02/08/17
Percent Solids:	37%		

### Quality Control Information

Condition of sample received:	Satisfactory
Sample Temperature upon receipt:	Received on Ice
Sample Extraction method:	Extracted Per the Method

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>Extractable Petroleum Hydrocarbons - Westborough Lab</b>						
C9-C18 Aliphatics	ND		mg/kg	17.1	--	1
C19-C36 Aliphatics	48.3		mg/kg	17.1	--	1
C11-C22 Aromatics	31.2		mg/kg	17.1	--	1
C11-C22 Aromatics, Adjusted	28.9		mg/kg	17.1	--	1
Naphthalene	ND		mg/kg	0.856	--	1
2-Methylnaphthalene	ND		mg/kg	0.856	--	1
Acenaphthylene	ND		mg/kg	0.856	--	1
Acenaphthene	ND		mg/kg	0.856	--	1
Fluorene	ND		mg/kg	0.856	--	1
Phenanthrene	ND		mg/kg	0.856	--	1
Anthracene	ND		mg/kg	0.856	--	1
Fluoranthene	1.22		mg/kg	0.856	--	1
Pyrene	1.10		mg/kg	0.856	--	1
Benzo(a)anthracene	ND		mg/kg	0.856	--	1
Chrysene	ND		mg/kg	0.856	--	1
Benzo(b)fluoranthene	ND		mg/kg	0.856	--	1
Benzo(k)fluoranthene	ND		mg/kg	0.856	--	1
Benzo(a)pyrene	ND		mg/kg	0.856	--	1
Indeno(1,2,3-cd)Pyrene	ND		mg/kg	0.856	--	1
Dibenzo(a,h)anthracene	ND		mg/kg	0.856	--	1
Benzo(ghi)perylene	ND		mg/kg	0.856	--	1



Project Name: EAST BOSTON

Lab Number: L1703750

Project Number: 43068

Report Date: 02/13/17

**SAMPLE RESULTS**

Lab ID:	L1703750-01	Date Collected:	02/06/17 12:55
Client ID:	VES-S1	Date Received:	02/06/17
Sample Location:	EAST BOSTON, MA	Field Prep:	Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
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**Extractable Petroleum Hydrocarbons - Westborough Lab**

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Chloro-Octadecane	69		40-140
o-Terphenyl	68		40-140
2-Fluorobiphenyl	75		40-140
2-Bromonaphthalene	76		40-140



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703750  
**Report Date:** 02/13/17

### SAMPLE RESULTS

Lab ID:	L1703750-02	Date Collected:	02/06/17 13:25
Client ID:	VES-S2	Date Received:	02/06/17
Sample Location:	EAST BOSTON, MA	Field Prep:	Not Specified
Matrix:	Soil		
Analytical Method:	100,VPH-04-1.1		
Analytical Date:	02/10/17 21:51		
Analyst:	KD		
Percent Solids:	46%		

### Quality Control Information

Condition of sample received:	Satisfactory
Sample Temperature upon receipt:	Received on Ice
Were samples received in methanol?	Yes (Covering the Soil)
Methanol ratio:	1:1 +/- 25%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>Volatile Petroleum Hydrocarbons - Westborough Lab</b>						
C5-C8 Aliphatics	ND		mg/kg	8.11	--	1
C9-C12 Aliphatics	ND		mg/kg	8.11	--	1
C9-C10 Aromatics	ND		mg/kg	8.11	--	1
C5-C8 Aliphatics, Adjusted	ND		mg/kg	8.11	--	1
C9-C12 Aliphatics, Adjusted	ND		mg/kg	8.11	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2,5-Dibromotoluene-PID	86		70-130
2,5-Dibromotoluene-FID	90		70-130

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703750  
**Report Date:** 02/13/17

### SAMPLE RESULTS

Lab ID:	L1703750-02	Date Collected:	02/06/17 13:25
Client ID:	VES-S2	Date Received:	02/06/17
Sample Location:	EAST BOSTON, MA	Field Prep:	Not Specified
Matrix:	Soil	Extraction Method:	EPA 3546
Analytical Method:	98,EPH-04-1.1	Extraction Date:	02/08/17 08:23
Analytical Date:	02/09/17 12:50	Cleanup Method1:	EPH-04-1
Analyst:	SR	Cleanup Date1:	02/08/17
Percent Solids:	46%		

### Quality Control Information

Condition of sample received:	Satisfactory
Sample Temperature upon receipt:	Received on Ice
Sample Extraction method:	Extracted Per the Method

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>Extractable Petroleum Hydrocarbons - Westborough Lab</b>						
C9-C18 Aliphatics	17.7	mg/kg	14.4	--	1	
C19-C36 Aliphatics	46.2	mg/kg	14.4	--	1	
C11-C22 Aromatics	ND	mg/kg	14.4	--	1	
C11-C22 Aromatics, Adjusted	ND	mg/kg	14.4	--	1	
Naphthalene	ND	mg/kg	0.721	--	1	
2-Methylnaphthalene	ND	mg/kg	0.721	--	1	
Acenaphthylene	ND	mg/kg	0.721	--	1	
Acenaphthene	ND	mg/kg	0.721	--	1	
Fluorene	ND	mg/kg	0.721	--	1	
Phenanthrene	ND	mg/kg	0.721	--	1	
Anthracene	ND	mg/kg	0.721	--	1	
Fluoranthene	ND	mg/kg	0.721	--	1	
Pyrene	ND	mg/kg	0.721	--	1	
Benzo(a)anthracene	ND	mg/kg	0.721	--	1	
Chrysene	ND	mg/kg	0.721	--	1	
Benzo(b)fluoranthene	ND	mg/kg	0.721	--	1	
Benzo(k)fluoranthene	ND	mg/kg	0.721	--	1	
Benzo(a)pyrene	ND	mg/kg	0.721	--	1	
Indeno(1,2,3-cd)Pyrene	ND	mg/kg	0.721	--	1	
Dibenzo(a,h)anthracene	ND	mg/kg	0.721	--	1	
Benzo(ghi)perylene	ND	mg/kg	0.721	--	1	



Project Name: EAST BOSTON

Lab Number: L1703750

Project Number: 43068

Report Date: 02/13/17

**SAMPLE RESULTS**

Lab ID:	L1703750-02	Date Collected:	02/06/17 13:25
Client ID:	VES-S2	Date Received:	02/06/17
Sample Location:	EAST BOSTON, MA	Field Prep:	Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
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**Extractable Petroleum Hydrocarbons - Westborough Lab**

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Chloro-Octadecane	71		40-140
o-Terphenyl	73		40-140
2-Fluorobiphenyl	80		40-140
2-Bromonaphthalene	82		40-140

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703750  
**Report Date:** 02/13/17

### Method Blank Analysis Batch Quality Control

Analytical Method: 98,EPH-04-1.1  
Analytical Date: 02/08/17 19:31  
Analyst: EK

Extraction Method: EPA 3546  
Extraction Date: 02/08/17 07:34  
Cleanup Method: EPH-04-1  
Cleanup Date: 02/08/17

Parameter	Result	Qualifier	Units	RL	MDL
Extractable Petroleum Hydrocarbons - Westborough Lab for sample(s):	01-02		Batch:	WG976243-1	
C9-C18 Aliphatics	ND		mg/kg	6.51	--
C19-C36 Aliphatics	ND		mg/kg	6.51	--
C11-C22 Aromatics	ND		mg/kg	6.51	--
C11-C22 Aromatics, Adjusted	ND		mg/kg	6.51	--
Naphthalene	ND		mg/kg	0.326	--
2-Methylnaphthalene	ND		mg/kg	0.326	--
Acenaphthylene	ND		mg/kg	0.326	--
Acenaphthene	ND		mg/kg	0.326	--
Fluorene	ND		mg/kg	0.326	--
Phenanthrene	ND		mg/kg	0.326	--
Anthracene	ND		mg/kg	0.326	--
Fluoranthene	ND		mg/kg	0.326	--
Pyrene	ND		mg/kg	0.326	--
Benzo(a)anthracene	ND		mg/kg	0.326	--
Chrysene	ND		mg/kg	0.326	--
Benzo(b)fluoranthene	ND		mg/kg	0.326	--
Benzo(k)fluoranthene	ND		mg/kg	0.326	--
Benzo(a)pyrene	ND		mg/kg	0.326	--
Indeno(1,2,3-cd)Pyrene	ND		mg/kg	0.326	--
Dibenzo(a,h)anthracene	ND		mg/kg	0.326	--
Benzo(ghi)perylene	ND		mg/kg	0.326	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Chloro-Octadecane	60		40-140
o-Terphenyl	63		40-140
2-Fluorobiphenyl	67		40-140
2-Bromonaphthalene	69		40-140



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703750  
**Report Date:** 02/13/17

**Method Blank Analysis**  
**Batch Quality Control**

Analytical Method: 100,VPH-04-1.1  
Analytical Date: 02/10/17 13:22  
Analyst: JM

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Petroleum Hydrocarbons - Westborough Lab for sample(s):	01-02		Batch:	WG977166-4	
C5-C8 Aliphatics	ND		mg/kg	2.67	--
C9-C12 Aliphatics	ND		mg/kg	2.67	--
C9-C10 Aromatics	ND		mg/kg	2.67	--
C5-C8 Aliphatics, Adjusted	ND		mg/kg	2.67	--
C9-C12 Aliphatics, Adjusted	ND		mg/kg	2.67	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2,5-Dibromotoluene-PID	104		70-130
2,5-Dibromotoluene-FID	104		70-130

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703750  
**Report Date:** 02/13/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Extractable Petroleum Hydrocarbons - Westborough Lab Associated sample(s): 01-02 Batch: WG976243-2 WG976243-3								
C9-C18 Aliphatics	58		58		40-140	0		25
C19-C36 Aliphatics	72		75		40-140	4		25
C11-C22 Aromatics	70		62		40-140	12		25
Naphthalene	54		46		40-140	16		25
2-Methylnaphthalene	55		47		40-140	16		25
Acenaphthylene	62		50		40-140	21		25
Acenaphthene	61		50		40-140	20		25
Fluorene	65		55		40-140	17		25
Phenanthrene	69		60		40-140	14		25
Anthracene	70		62		40-140	12		25
Fluoranthene	72		64		40-140	12		25
Pyrene	74		64		40-140	14		25
Benzo(a)anthracene	72		65		40-140	10		25
Chrysene	73		66		40-140	10		25
Benzo(b)fluoranthene	73		65		40-140	12		25
Benzo(k)fluoranthene	72		63		40-140	13		25
Benzo(a)pyrene	69		62		40-140	11		25
Indeno(1,2,3-cd)Pyrene	71		63		40-140	12		25
Dibenzo(a,h)anthracene	73		64		40-140	13		25
Benzo(ghi)perylene	66		61		40-140	8		25
Nonane (C9)	48		46		30-140	4		25

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703750  
**Report Date:** 02/13/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Extractable Petroleum Hydrocarbons - Westborough Lab Associated sample(s): 01-02 Batch: WG976243-2 WG976243-3								
Decane (C10)	54		52		40-140	4		25
Dodecane (C12)	55		53		40-140	4		25
Tetradecane (C14)	57		55		40-140	4		25
Hexadecane (C16)	62		63		40-140	2		25
Octadecane (C18)	66		70		40-140	6		25
Nonadecane (C19)	67		71		40-140	6		25
Eicosane (C20)	68		73		40-140	7		25
Docosane (C22)	69		73		40-140	6		25
Tetracosane (C24)	69		72		40-140	4		25
Hexacosane (C26)	69		72		40-140	4		25
Octacosane (C28)	69		72		40-140	4		25
Triacontane (C30)	69		72		40-140	4		25
Hexatriacontane (C36)	72		76		40-140	5		25

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Chloro-Octadecane	60		65		40-140
o-Terphenyl	72		62		40-140
2-Fluorobiphenyl	72		73		40-140
2-Bromonaphthalene	76		76		40-140
% Naphthalene Breakthrough	0		0		
% 2-Methylnaphthalene Breakthrough	0		0		

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703750  
**Report Date:** 02/13/17

<b>Parameter</b>	<i>LCS</i> <b>%Recovery</b>	<i>LCS</i> <b>%Recovery</b>	<i>%Recovery</i> <b>Limits</b>	<i>RPD</i>	<i>RPD</i> <b>Limits</b>
	<b>Qual</b>	<b>Qual</b>	<b>Limits</b>	<b>Qual</b>	
Volatile Petroleum Hydrocarbons - Westborough Lab Associated sample(s): 01-02 Batch: WG977166-2 WG977166-3					
C5-C8 Aliphatics	100	100	70-130	0	25
C9-C12 Aliphatics	100	101	70-130	1	25
C9-C10 Aromatics	100	101	70-130	1	25
Benzene	97	99	70-130	2	25
Toluene	98	99	70-130	1	25
Ethylbenzene	98	99	70-130	0	25
p/m-Xylene	100	100	70-130	0	25
o-Xylene	100	100	70-130	0	25
Methyl tert butyl ether	98	107	70-130	8	25
Naphthalene	105	113	70-130	7	25
1,2,4-Trimethylbenzene	100	101	70-130	1	25
Pentane	97	96	70-130	1	25
2-Methylpentane	100	99	70-130	1	25
2,2,4-Trimethylpentane	102	101	70-130	1	25
n-Nonane	101	101	30-130	0	25
n-Decane	100	100	70-130	0	25
n-Butylcyclohexane	100	102	70-130	2	25

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703750  
**Report Date:** 02/13/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
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Volatile Petroleum Hydrocarbons - Westborough Lab Associated sample(s): 01-02 Batch: WG977166-2 WG977166-3

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2,5-Dibromotoluene-PID	102		104		70-130
2,5-Dibromotoluene-FID	98		102		70-130

**PCBS**



Project Name: EAST BOSTON

Lab Number: L1703750

Project Number: 43068

Report Date: 02/13/17

**SAMPLE RESULTS**

Lab ID: L1703750-01  
 Client ID: VES-S1  
 Sample Location: EAST BOSTON, MA  
 Matrix: Soil  
 Analytical Method: 97,8082A  
 Analytical Date: 02/09/17 06:35  
 Analyst: JA  
 Percent Solids: 37%

Date Collected: 02/06/17 12:55  
 Date Received: 02/06/17  
 Field Prep: Not Specified  
 Extraction Method: EPA 3540C  
 Extraction Date: 02/08/17 00:43  
 Cleanup Method: EPA 3665A  
 Cleanup Date: 02/09/17  
 Cleanup Method: EPA 3660B  
 Cleanup Date: 02/09/17

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
<b>MCP Polychlorinated Biphenyls - Westborough Lab</b>							
Aroclor 1016	ND		ug/kg	89.2	--	1	A
Aroclor 1221	ND		ug/kg	89.2	--	1	A
Aroclor 1232	ND		ug/kg	89.2	--	1	A
Aroclor 1242	ND		ug/kg	89.2	--	1	A
Aroclor 1248	ND		ug/kg	89.2	--	1	A
Aroclor 1254	ND		ug/kg	89.2	--	1	A
Aroclor 1260	ND		ug/kg	89.2	--	1	B
Aroclor 1262	ND		ug/kg	89.2	--	1	A
Aroclor 1268	ND		ug/kg	89.2	--	1	A
PCBs, Total	ND		ug/kg	89.2	--	1	B

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	63		30-150	A
Decachlorobiphenyl	37		30-150	A
2,4,5,6-Tetrachloro-m-xylene	60		30-150	B
Decachlorobiphenyl	41		30-150	B

Project Name: EAST BOSTON

Lab Number: L1703750

Project Number: 43068

Report Date: 02/13/17

**SAMPLE RESULTS**

Lab ID: L1703750-02  
 Client ID: VES-S2  
 Sample Location: EAST BOSTON, MA  
 Matrix: Soil  
 Analytical Method: 97,8082A  
 Analytical Date: 02/09/17 06:47  
 Analyst: JA  
 Percent Solids: 46%

Date Collected: 02/06/17 13:25  
 Date Received: 02/06/17  
 Field Prep: Not Specified  
 Extraction Method: EPA 3540C  
 Extraction Date: 02/08/17 00:43  
 Cleanup Method: EPA 3665A  
 Cleanup Date: 02/09/17  
 Cleanup Method: EPA 3660B  
 Cleanup Date: 02/09/17

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
<b>MCP Polychlorinated Biphenyls - Westborough Lab</b>							
Aroclor 1016	ND		ug/kg	72.2	--	1	A
Aroclor 1221	ND		ug/kg	72.2	--	1	A
Aroclor 1232	ND		ug/kg	72.2	--	1	A
Aroclor 1242	ND		ug/kg	72.2	--	1	A
Aroclor 1248	ND		ug/kg	72.2	--	1	A
Aroclor 1254	ND		ug/kg	72.2	--	1	A
Aroclor 1260	ND		ug/kg	72.2	--	1	B
Aroclor 1262	ND		ug/kg	72.2	--	1	A
Aroclor 1268	ND		ug/kg	72.2	--	1	A
PCBs, Total	ND		ug/kg	72.2	--	1	B

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	62		30-150	A
Decachlorobiphenyl	46		30-150	A
2,4,5,6-Tetrachloro-m-xylene	61		30-150	B
Decachlorobiphenyl	49		30-150	B

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703750  
**Report Date:** 02/13/17

### Method Blank Analysis Batch Quality Control

Analytical Method: 97,8082A  
Analytical Date: 02/09/17 04:31  
Analyst: JA

Extraction Method: EPA 3540C  
Extraction Date: 02/08/17 00:43  
Cleanup Method: EPA 3665A  
Cleanup Date: 02/09/17  
Cleanup Method: EPA 3660B  
Cleanup Date: 02/09/17

Parameter	Result	Qualifier	Units	RL	MDL	Column
MCP Polychlorinated Biphenyls - Westborough Lab for sample(s): 01-02 Batch: WG976168-1						
Aroclor 1016	ND		ug/kg	31.7	--	A
Aroclor 1221	ND		ug/kg	31.7	--	A
Aroclor 1232	ND		ug/kg	31.7	--	A
Aroclor 1242	ND		ug/kg	31.7	--	A
Aroclor 1248	ND		ug/kg	31.7	--	A
Aroclor 1254	ND		ug/kg	31.7	--	A
Aroclor 1260	ND		ug/kg	31.7	--	A
Aroclor 1262	ND		ug/kg	31.7	--	A
Aroclor 1268	ND		ug/kg	31.7	--	A
PCBs, Total	ND		ug/kg	31.7	--	A

Surrogate	%Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	72		30-150	A
Decachlorobiphenyl	49		30-150	A
2,4,5,6-Tetrachloro-m-xylene	69		30-150	B
Decachlorobiphenyl	55		30-150	B

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703750  
**Report Date:** 02/13/17

<b>Parameter</b>	<i>LCS</i> %Recovery	<i>Qual</i>	<i>LCSD</i> %Recovery	<i>Qual</i>	<i>%Recovery</i> <i>Limits</i>	<i>RPD</i>	<i>Qual</i>	<i>RPD</i> <i>Limits</i>	<i>Column</i>
MCP Polychlorinated Biphenyls - Westborough Lab Associated sample(s): 01-02 Batch: WG976168-2 WG976168-3									
Aroclor 1016	63		70		40-140	11		30	A
Aroclor 1260	45		48		40-140	6		30	A

<b>Surrogate</b>	<i>LCS</i> %Recovery	<i>Qual</i>	<i>LCSD</i> %Recovery	<i>Qual</i>	<i>Acceptance</i> <i>Criteria</i>	<i>Column</i>
2,4,5,6-Tetrachloro-m-xylene	78		77		30-150	A
Decachlorobiphenyl	42		41		30-150	A
2,4,5,6-Tetrachloro-m-xylene	70		74		30-150	B
Decachlorobiphenyl	51		51		30-150	B

## METALS



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703750  
**Report Date:** 02/13/17

**SAMPLE RESULTS**

Lab ID:	L1703750-01	Date Collected:	02/06/17 12:55
Client ID:	VES-S1	Date Received:	02/06/17
Sample Location:	EAST BOSTON, MA	Field Prep:	Not Specified
Matrix:	Soil		
Percent Solids:	37%		

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
<b>MCP Total Metals - Mansfield Lab</b>											
Arsenic, Total	9.9		mg/kg	1.0	--	1	02/07/17 21:20	02/08/17 23:43	EPA 3050B	97,6010C	MC
Barium, Total	200		mg/kg	1.0	--	1	02/07/17 21:20	02/08/17 23:43	EPA 3050B	97,6010C	MC
Cadmium, Total	ND		mg/kg	1.0	--	1	02/07/17 21:20	02/08/17 23:43	EPA 3050B	97,6010C	MC
Chromium, Total	36		mg/kg	1.0	--	1	02/07/17 21:20	02/08/17 23:43	EPA 3050B	97,6010C	MC
Lead, Total	200		mg/kg	5.1	--	1	02/07/17 21:20	02/08/17 23:43	EPA 3050B	97,6010C	MC
Mercury, Total	ND		mg/kg	0.168	--	1	02/07/17 08:10	02/07/17 19:18	EPA 7471B	97,7471B	JH
Selenium, Total	ND		mg/kg	5.1	--	1	02/07/17 21:20	02/08/17 23:43	EPA 3050B	97,6010C	MC
Silver, Total	ND		mg/kg	1.0	--	1	02/07/17 21:20	02/08/17 23:43	EPA 3050B	97,6010C	MC



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703750  
**Report Date:** 02/13/17

**SAMPLE RESULTS**

Lab ID: L1703750-02 Date Collected: 02/06/17 13:25  
Client ID: VES-S2 Date Received: 02/06/17  
Sample Location: EAST BOSTON, MA Field Prep: Not Specified  
Matrix: Soil  
Percent Solids: 46%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
<b>MCP Total Metals - Mansfield Lab</b>											
Arsenic, Total	20		mg/kg	0.84	--	1	02/07/17 21:20	02/08/17 23:47	EPA 3050B	97,6010C	MC
Barium, Total	240		mg/kg	0.84	--	1	02/07/17 21:20	02/08/17 23:47	EPA 3050B	97,6010C	MC
Cadmium, Total	0.93		mg/kg	0.84	--	1	02/07/17 21:20	02/08/17 23:47	EPA 3050B	97,6010C	MC
Chromium, Total	36		mg/kg	0.84	--	1	02/07/17 21:20	02/08/17 23:47	EPA 3050B	97,6010C	MC
Lead, Total	160		mg/kg	4.2	--	1	02/07/17 21:20	02/08/17 23:47	EPA 3050B	97,6010C	MC
Mercury, Total	0.345		mg/kg	0.144	--	1	02/07/17 08:10	02/07/17 19:20	EPA 7471B	97,7471B	JH
Selenium, Total	ND		mg/kg	4.2	--	1	02/07/17 21:20	02/08/17 23:47	EPA 3050B	97,6010C	MC
Silver, Total	ND		mg/kg	0.84	--	1	02/07/17 21:20	02/08/17 23:47	EPA 3050B	97,6010C	MC



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703750  
**Report Date:** 02/13/17

## Method Blank Analysis Batch Quality Control

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
MCP Total Metals - Mansfield Lab for sample(s): 01-02 Batch: WG975847-1									
Mercury, Total	ND	mg/kg	0.083	--	1	02/07/17 08:10	02/07/17 10:38	97,7471B	JH

### Prep Information

Digestion Method: EPA 7471B

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
MCP Total Metals - Mansfield Lab for sample(s): 01-02 Batch: WG976114-1									
Arsenic, Total	ND	mg/kg	0.40	--	1	02/07/17 21:20	02/08/17 22:26	97,6010C	MC
Barium, Total	ND	mg/kg	0.40	--	1	02/07/17 21:20	02/08/17 22:26	97,6010C	MC
Cadmium, Total	ND	mg/kg	0.40	--	1	02/07/17 21:20	02/08/17 22:26	97,6010C	MC
Chromium, Total	ND	mg/kg	0.40	--	1	02/07/17 21:20	02/08/17 22:26	97,6010C	MC
Lead, Total	ND	mg/kg	2.0	--	1	02/07/17 21:20	02/08/17 22:26	97,6010C	MC
Selenium, Total	ND	mg/kg	2.0	--	1	02/07/17 21:20	02/08/17 22:26	97,6010C	MC
Silver, Total	ND	mg/kg	0.40	--	1	02/07/17 21:20	02/08/17 22:26	97,6010C	MC

### Prep Information

Digestion Method: EPA 3050B

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703750  
**Report Date:** 02/13/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Total Metals - Mansfield Lab Associated sample(s): 01-02 Batch: WG975847-2 WG975847-3 SRM Lot Number: D091-540								
Mercury, Total	92		110		72-128	18		30
MCP Total Metals - Mansfield Lab Associated sample(s): 01-02 Batch: WG976114-2 WG976114-3 SRM Lot Number: D091-540								
Arsenic, Total	103		103		80-121	0		30
Barium, Total	96		91		84-117	5		30
Cadmium, Total	97		99		83-117	2		30
Chromium, Total	98		98		80-119	0		30
Lead, Total	103		103		82-118	0		30
Selenium, Total	101		101		79-121	0		30
Silver, Total	99		99		76-124	0		30

# **INORGANICS & MISCELLANEOUS**



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703750  
**Report Date:** 02/13/17

## SAMPLE RESULTS

Lab ID: L1703750-01  
Client ID: VES-S1  
Sample Location: EAST BOSTON, MA  
Matrix: Soil

Date Collected: 02/06/17 12:55  
Date Received: 02/06/17  
Field Prep: Not Specified

### Test Material Information

Source of Material: Unknown  
Description of Material: Non-Metallic - Damp Soil  
Particle Size: Medium  
Preliminary Burning Time (sec): 120

Parameter	Result	Date Analyzed	Analytical Method	Analyst
<b>Ignitability of Solids - Westborough Lab</b>				
Ignitability	NI	02/07/17 12:38	1,1030	AB



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703750  
**Report Date:** 02/13/17

## SAMPLE RESULTS

Lab ID: L1703750-02  
Client ID: VES-S2  
Sample Location: EAST BOSTON, MA  
Matrix: Soil

Date Collected: 02/06/17 13:25  
Date Received: 02/06/17  
Field Prep: Not Specified

### Test Material Information

Source of Material: Unknown  
Description of Material: Non-Metallic - Wet Soil  
Particle Size: Medium  
Preliminary Burning Time (sec): 120

Parameter	Result	Date Analyzed	Analytical Method	Analyst
Ignitability of Solids - Westborough Lab				
Ignitability	NI	02/07/17 12:38	1,1030	AB



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703750  
**Report Date:** 02/13/17

### SAMPLE RESULTS

Lab ID: L1703750-01  
Client ID: VES-S1  
Sample Location: EAST BOSTON, MA  
Matrix: Soil

Date Collected: 02/06/17 12:55  
Date Received: 02/06/17  
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>General Chemistry - Westborough Lab</b>										
Specific Conductance @ 25 C	71		umhos/cm	10	--	1	-	02/06/17 23:38	1,9050A	VB
Solids, Total	37.2	%		0.100	NA	1	-	02/07/17 15:17	121,2540G	RI
pH (H)	6.7	SU		-	NA	1	-	02/06/17 21:35	1,9045D	AS
Cyanide, Reactive	ND		mg/kg	10	--	1	02/07/17 17:10	02/07/17 18:48	1,7.3	RP
Sulfide, Reactive	ND		mg/kg	10	--	1	02/07/17 17:10	02/07/17 18:41	1,7.3	RP



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703750  
**Report Date:** 02/13/17

### SAMPLE RESULTS

Lab ID: L1703750-02  
Client ID: VES-S2  
Sample Location: EAST BOSTON, MA  
Matrix: Soil

Date Collected: 02/06/17 13:25  
Date Received: 02/06/17  
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>General Chemistry - Westborough Lab</b>										
Specific Conductance @ 25 C	840		umhos/cm	10	--	1	-	02/06/17 23:38	1,9050A	VB
Solids, Total	45.6	%		0.100	NA	1	-	02/07/17 15:17	121,2540G	RI
pH (H)	7.2	SU		-	NA	1	-	02/06/17 21:35	1,9045D	AS
Cyanide, Reactive	ND		mg/kg	10	--	1	02/07/17 17:10	02/07/17 18:48	1,7.3	RP
Sulfide, Reactive	ND		mg/kg	10	--	1	02/07/17 17:10	02/07/17 18:41	1,7.3	RP



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703750  
**Report Date:** 02/13/17

**Method Blank Analysis**  
**Batch Quality Control**

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab for sample(s): 01-02 Batch: WG976073-1									
Sulfide, Reactive	ND	mg/kg	10	--	1	02/07/17 17:10	02/07/17 18:36	1,7.3	RP
General Chemistry - Westborough Lab for sample(s): 01-02 Batch: WG976074-1									
Cyanide, Reactive	ND	mg/kg	10	--	1	02/07/17 17:10	02/07/17 18:44	1,7.3	RP



# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703750  
**Report Date:** 02/13/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01-02 Batch: WG975787-1								
pH	100	-	-	-	99-101	-	-	-
General Chemistry - Westborough Lab Associated sample(s): 01-02 Batch: WG975813-1								
Specific Conductance	101	-	-	-	99-101	-	-	-
General Chemistry - Westborough Lab Associated sample(s): 01-02 Batch: WG976073-2								
Sulfide, Reactive	86	-	-	-	60-125	-	-	40
General Chemistry - Westborough Lab Associated sample(s): 01-02 Batch: WG976074-2								
Cyanide, Reactive	56	-	-	-	30-125	-	-	40

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703750  
**Report Date:** 02/13/17

### Sample Receipt and Container Information

Were project specific reporting limits specified? YES

**Reagent H2O Preserved Vials Frozen on:** 02/06/2017 21:14

#### Cooler Information Custody Seal

##### Cooler

A Absent

#### Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L1703750-01A	Vial MeOH preserved	A	N/A	3.6	Y	Absent	VPH-10(28),MCP-8260HLW-10(14)
L1703750-01B	Vial water preserved	A	N/A	3.6	Y	Absent	MCP-8260HLW-10(14)
L1703750-01C	Vial water preserved	A	N/A	3.6	Y	Absent	MCP-8260HLW-10(14)
L1703750-01D	Glass 500ml/16oz unpreserved	A	N/A	3.6	Y	Absent	IGNIT-1030(14),REACTS(14),MCP-8270-10(14),TS(7),MCP-8082-10-3540C(365),PH-9045(1),REACTCN(14),TPH-DRO-D(14),COND-9050(28),EPH-DELUX-10(14)
L1703750-01E	Metals Only - Glass 60mL/2oz unp	A	N/A	3.6	Y	Absent	MCP-CR-6010T-10(180),MCP-AS-6010T-10(180),MCP-7471T-10(28),MCP-CD-6010T-10(180),MCP-AG-6010T-10(180),MCP-SE-6010T-10(180),MCP-BA-6010T-10(180),MCP-PB-6010T-10(180)
L1703750-02A	Vial MeOH preserved	A	N/A	3.6	Y	Absent	VPH-10(28),MCP-8260HLW-10(14)
L1703750-02B	Vial water preserved	A	N/A	3.6	Y	Absent	MCP-8260HLW-10(14)
L1703750-02C	Vial water preserved	A	N/A	3.6	Y	Absent	MCP-8260HLW-10(14)
L1703750-02D	Glass 500ml/16oz unpreserved	A	N/A	3.6	Y	Absent	IGNIT-1030(14),REACTS(14),MCP-8270-10(14),TS(7),MCP-8082-10-3540C(365),PH-9045(1),REACTCN(14),TPH-DRO-D(14),COND-9050(28),EPH-DELUX-10(14)
L1703750-02E	Metals Only - Glass 60mL/2oz unp	A	N/A	3.6	Y	Absent	MCP-CR-6010T-10(180),MCP-AS-6010T-10(180),MCP-7471T-10(28),MCP-CD-6010T-10(180),MCP-AG-6010T-10(180),MCP-SE-6010T-10(180),MCP-BA-6010T-10(180),MCP-PB-6010T-10(180)

\*Values in parentheses indicate holding time in days

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703750  
**Report Date:** 02/13/17

## GLOSSARY

### **Acronyms**

EDL	- Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).
EPA	- Environmental Protection Agency.
LCS	- Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCSD	- Laboratory Control Sample Duplicate: Refer to LCS.
LFB	- Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
MDL	- Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
MS	- Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available.
MSD	- Matrix Spike Sample Duplicate: Refer to MS.
NA	- Not Applicable.
NC	- Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
NDPA/DPA	- N-Nitrosodiphenylamine/Diphenylamine.
NI	- Not Ignitable.
NP	- Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.
RL	- Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
RPD	- Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.
SRM	- Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.
STLP	- Semi-dynamic Tank Leaching Procedure per EPA Method 1315.
TIC	- Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

### **Footnotes**

- 1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

### **Terms**

**Total:** With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

**Analytical Method:** Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

### **Data Qualifiers**

- A** - Spectra identified as "Aldol Condensation Product".
- B** - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the

**Report Format:** Data Usability Report



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703750  
**Report Date:** 02/13/17

**Data Qualifiers**

reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

- C** - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.
- D** - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.
- E** - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.
- G** - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.
- H** - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.
- I** - The lower value for the two columns has been reported due to obvious interference.
- M** - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.
- NJ** - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.
- P** - The RPD between the results for the two columns exceeds the method-specified criteria.
- Q** - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)
- R** - Analytical results are from sample re-analysis.
- RE** - Analytical results are from sample re-extraction.
- S** - Analytical results are from modified screening analysis.
- J** - Estimated value. This represents an estimated concentration for Tentatively Identified Compounds (TICs).
- ND** - Not detected at the reporting limit (RL) for the sample.

*Report Format:* Data Usability Report



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703750  
**Report Date:** 02/13/17

## REFERENCES

- 1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - IV, 2007.
- 97 EPA Test Methods (SW-846) with QC Requirements & Performance Standards for the Analysis of EPA SW-846 Methods under the Massachusetts Contingency Plan, WSC-CAM-IIA, IIB, IIIA, IIIB, IIIC, IID, VA, VB, VC, VIA, VIB, VIIIA and VIIIB, July 2010.
- 98 Method for the Determination of Extractable Petroleum Hydrocarbons (EPH), MassDEP, May 2004, Revision 1.1 with QC Requirements & Performance Standards for the Analysis of EPH under the Massachusetts Contingency Plan, WSC-CAM-IVB, July 2010.
- 100 Method for the Determination of Volatile Petroleum Hydrocarbons (VPH), MassDEP, May 2004, Revision 1.1 with QC Requirements & Performance Standards for the Analysis of VPH under the Massachusetts Contingency Plan, WSC-CAM-IVA, July 2010.
- 121 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. Standard Methods Online.

## LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at its own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.



## Certification Information

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**The following analytes are not included in our Primary NELAP Scope of Accreditation:**

**Westborough Facility**

EPA 624: m/p-xylene, o-xylene

EPA 8260C: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), Methyl methacrylate, 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.

EPA 8270D: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.

EPA 300: DW: Bromide

EPA 6860: NPW and SCM: Perchlorate

EPA 9010: NPW and SCM: Amenable Cyanide Distillation

EPA 9012B: NPW: Total Cyanide

EPA 9050A: NPW: Specific Conductance

SM3500: NPW: Ferrous Iron

SM4500: NPW: Amenable Cyanide, Dissolved Oxygen; SCM: Total Phosphorus, TKN, NO<sub>2</sub>, NO<sub>3</sub>.

SM5310C: DW: Dissolved Organic Carbon

**Mansfield Facility**

SM 2540D: TSS

EPA 3005A NPW

EPA 8082A: NPW: PCB: 1, 5, 31, 87, 101, 110, 141, 151, 153, 180, 183, 187.

EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.

**Biological Tissue Matrix**: EPA 3050B

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**The following analytes are included in our Massachusetts DEP Scope of Accreditation**

**Westborough Facility:**

**Drinking Water**

EPA 300.0: Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C**, **SM4500CN-CE**, **EPA 180.1**,

**SM2130B**, **SM4500CI-D**, **SM2320B**, **SM2540C**, **SM4500H-B**

EPA 332: Perchlorate; **EPA 524.2**: THMs and VOCs; **EPA 504.1**: EDB, DBCP.

Microbiology: **SM9215B**; **SM9223-P/A**, **SM9223B-Colilert-QT**, **SM9222D**.

**Non-Potable Water**

**SM4500H,B**, **EPA 120.1**, **SM2510B**, **SM2540C**, **SM2320B**, **SM4500CL-E**, **SM4500F-BC**, **SM4500NH3-BH**, **EPA 350.1**: Ammonia-N, LACHAT 10-107-06-1-B: Ammonia-N, **SM4500NO3-F**, **EPA 353.2**: Nitrate-N, **EPA 351.1**, **SM4500P-E**, **SM4500P-B**, **E**, **SM4500SO4-E**, **SM5220D**, **EPA 410.4**, **SM5210B**, **SM5310C**, **SM4500CL-D**, **EPA 1664**, **EPA 420.1**, **SM4500-CN-CE**, **SM2540D**.

EPA 624: Volatile Halocarbons & Aromatics,

EPA 608: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs

EPA 625: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045**: PCB-Oil.

Microbiology: **SM9223B-Colilert-QT**; **Enterolert-QT**, **SM9221E**.

**Mansfield Facility:**

**Drinking Water**

EPA 200.7: Ba, Be, Cd, Cr, Cu, Ni, Na, Ca. **EPA 200.8**: Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Ni, Se, TL. **EPA 245.1 Hg**.

**Non-Potable Water**

EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.

EPA 200.8: Al, Sb, As, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn.

EPA 245.1 Hg.

**SM2340B**

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For a complete listing of analytes and methods, please contact your Alpha Project Manager.

mg/Bs 2/8/17 updated COC

Serial\_No:02131714:54

## **CHAIN OF CUSTODY**

PAGE        OF



# CHAIN OF CUSTODY

PAGE 1 OF 1

8 Walkup Drive  
Westboro, MA 01581  
Tel: 508-898-9220

320 Forbes Blvd  
Mansfield, MA 02048  
Tel: 508-822-9300

**Client Information**

Client: VERTEX

Address: 1 Congress St, 10th Flr  
Boston, MA

Phone: 781-374-7595

Email: b5ivonen@vertexeng.com

Additional Project Information:

**Project Information**

Project Name: East Boston

Project Location: East Boston, MA

Project #: 43068

Project Manager: B. Gibbons

ALPHA Quote #:

**Turn-Around Time**
 Standard       RUSH (only confirmed if pre-approved)

Date Due:

Date Rec'd in Lab:

02/06/17

ALPHA Job #:

L1703750

**Billing Information**
 Same as Client Info      PO #:

**Regulatory Requirements & Project Information Requirements**

- Yes  No MA MCP Analytical Methods       Yes  No CT RCP Analytical Methods  
 Yes  No Matrix Spike Required on this SDG? (Required for MCP Inorganics)  
 Yes  No GW1 Standards (Info Required for Metals & EPH with Targets)  
 Yes  No NPDES RGP  
 Other State /Fed Program

Criteria

ANALYSIS	Criteria												TOTAL #
	VOC:	SVOC:	METALS:	EPH:	VPH:	TPH:	PCB	PEST	OMM	Fingerprint	Total Solids		
<input type="checkbox"/> 8260	<input type="checkbox"/> 624	<input type="checkbox"/> MCP 13	<input type="checkbox"/> RCR45	<input type="checkbox"/> RCR48	<input type="checkbox"/> Ranges & Targets	<input type="checkbox"/> Ranges Only	<input type="checkbox"/> Quant Only	<input type="checkbox"/> Haz. Chem					5
<input type="checkbox"/> ABN	<input type="checkbox"/> PAH	<input type="checkbox"/> MCP 14	<input type="checkbox"/> RCP 15	<input type="checkbox"/> PP13	<input type="checkbox"/> Ranges & Targets	<input type="checkbox"/> Ranges Only	<input type="checkbox"/> PEST	<input type="checkbox"/> OMM	<input type="checkbox"/> Fingerprint	<input type="checkbox"/> Total Solids			5
<input type="checkbox"/> 524.2													

**SAMPLE INFO**

Filtration  
 Field  
 Lab to do

Preservation  
 Lab to do

Sample Comments

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection		Sample Matrix	Sampler Initials
		Date	Time		
03750-01	VES-51	2/6/17	12:55	SE	BS
02	VES-52	2/6/17	13:25	SE	BS

P= Plastic  
 A= Amber glass  
 V= Vial  
 G= Glass  
 B= Bacteria cup  
 C= Cube  
 O= Other  
 E= Encore  
 D= BOD Bottle

Container Type  
 Preservative  
 A= None  
 B= HCl  
 C= HNO<sub>3</sub>  
 D= H<sub>2</sub>SO<sub>4</sub>  
 E= NaOH  
 F= MeOH  
 G= NaHSO<sub>4</sub>  
 H= Na<sub>2</sub>S<sub>2</sub>O<sub>3</sub>  
 I= Ascorbic Acid  
 J= NH<sub>4</sub>Cl  
 K= Zn Acetate  
 O= Other

Container Type

A A

Preservative

A A

Relinquished By:

Date/Time

38  
Rob Mauro AAL 2/6/17 16:50

Received By:

Date/Time

Rob Mauro AAL 2/6/17 15:15  
J. Murrison 2/6/17 16:50

All samples submitted are subject to  
Alpha's Terms and Conditions.  
See reverse side.

FORM NO. 01-01 (rev 12-Mar-2012)

**Method Blank Summary  
Form 4**

Client	: Vertex Environmental Services, Inc.	Lab Number	: L1703750
Project Name	: EAST BOSTON	Project Number	: 43068
Lab Sample ID	: WG976794-5	Lab File ID	: VC170209A06
Instrument ID	: CHARLIE		
Matrix	: SOIL	Analysis Date	: 02/09/17 09:53

Client Sample No.	Lab Sample ID	Analysis Date
WG976794-3LCS	WG976794-3	02/09/17 08:02
WG976794-4LCSD	WG976794-4	02/09/17 08:31
VES-S1	L1703750-01	02/09/17 17:39

**Method Blank Summary  
Form 4**

Client : Vertex Environmental Services, Inc.      Lab Number : L1703750  
Project Name : EAST BOSTON      Project Number : 43068  
Lab Sample ID : WG976906-5      Lab File ID : V11170210A05  
Instrument ID : VOA111  
Matrix : SOIL      Analysis Date : 02/10/17 10:12

Client Sample No.	Lab Sample ID	Analysis Date
WG976906-3LCS	WG976906-3	02/10/17 08:30
WG976906-4LCSD	WG976906-4	02/10/17 08:56
VES-S2	L1703750-02	02/10/17 13:36

**Continuing Calibration  
Form 7**

Client	: Vertex Environmental Services, Inc.	Lab Number	: L1703750
Project Name	: EAST BOSTON	Project Number	: 43068
Instrument ID	: CHARLIE	Calibration Date	: 02/09/17 08:02
Lab File ID	: VC170209A02	Init. Calib. Date(s)	: 01/25/17
Sample No	: WG976794-2	Init. Calib. Times	: 15:01 01/25/17 18:59
Channel	:		

Compound	Ave. RRF	RRF	Min RRF	%D	Max %D	Area%	Dev(min)
Fluorobenzene	1	1	-	0	20	59	0
Dichlorodifluoromethane	0.398	0.37	-	7	20	57	0
Chloromethane	0.333	0.324	-	2.7	20	61	0
Vinyl chloride	0.381	0.494	-	-29.7*	20	79	0
Bromomethane	20	31.276	-	-56.4*	20	79	0
Chloroethane	0.259	0.38	-	-46.7*	20	91	0
Trichlorofluoromethane	0.537	0.823	-	-53.3*	20	90	0
Ethyl ether	0.215	0.299	-	-39.1*	20	84	0
1,1-Dichloroethene	0.339	0.388	-	-14.5	20	71	0
Carbon disulfide	1.178	1.586	-	-34.6*	20	83	0
Methylene chloride	20	29.426	-	-47.1*	20	89	0
Acetone	20	20.941	-	-4.7	20	58	0
trans-1,2-Dichloroethene	0.382	0.452	-	-18.3	20	72	0
Methyl tert-butyl ether	1.127	1.289	-	-14.4	20	71	0
Diisopropyl ether	1.017	1.085	-	-6.7	20	67	0
1,1-Dichloroethane	0.655	0.75	-	-14.5	20	71	0
Ethyl tert-butyl ether	1.126	1.218	-	-8.2	20	68	0
cis-1,2-Dichloroethene	0.423	0.494	-	-16.8	20	71	0
2,2-Dichloropropane	0.56	0.568	-	-1.4	20	64	0
Bromochloromethane	0.206	0.248	-	-20.4*	20	71	0
Chloroform	0.681	0.784	-	-15.1	20	71	0
Carbon tetrachloride	0.523	0.522	-	0.2	20	62	0
Tetrahydrofuran	0.114	0.132	-	-15.8	20	71	0
Dibromofluoromethane	0.276	0.279	-	-1.1	20	60	0
1,1,1-Trichloroethane	0.609	0.685	-	-12.5	20	70	0
2-Butanone	0.158	0.171	-	-8.2	20	65	0
1,1-Dichloropropene	0.506	0.588	-	-16.2	20	71	0
Benzene	1.458	1.697	-	-16.4	20	71	0
tert-Amyl methyl ether	1.067	1.149	-	-7.7	20	67	0
1,2-Dichloroethane-d4	0.277	0.276	-	0.4	20	61	0
1,2-Dichloroethane	0.5	0.588	-	-17.6	20	73	0
Trichloroethene	0.411	0.477	-	-16.1	20	72	0
Dibromomethane	0.251	0.293	-	-16.7	20	71	0
1,2-Dichloropropane	0.371	0.422	-	-13.7	20	70	0
Bromodichloromethane	0.519	0.56	-	-7.9	20	67	0
1,4-Dioxane	1000	1320.982	-	-32.1*	20	66	0
cis-1,3-Dichloropropene	0.614	0.658	-	-7.2	20	65	0
Chlorobenzene-d5	1	1	-	0	20	66	0
Toluene-d8	1.244	1.169	-	6	20	62	0
Toluene	1.202	1.244	-	-3.5	20	71	0
4-Methyl-2-pentanone	0.185	0.193	-	-4.3	20	71	0
Tetrachloroethene	0.484	0.506	-	-4.5	20	70	0
trans-1,3-Dichloropropene	0.701	0.648	-	7.6	20	63	0
1,1,2-Trichloroethane	0.366	0.383	-	-4.6	20	71	0
Chlorodibromomethane	0.545	0.503	-	7.7	20	64	0

\* Value outside of QC limits.



**Continuing Calibration  
Form 7**

Client	: Vertex Environmental Services, Inc.	Lab Number	: L1703750		
Project Name	: EAST BOSTON	Project Number	: 43068		
Instrument ID	: CHARLIE	Calibration Date	: 02/09/17 08:02		
Lab File ID	: VC170209A02	Init. Calib. Date(s)	: 01/25/17		01/25/17
Sample No	: WG976794-2	Init. Calib. Times	: 15:01		18:59
Channel	:				

Compound	Ave. RRF	RRF	Min RRF	%D	Max %D	Area%	Dev(min)
1,3-Dichloropropane	0.727	0.759	-	-4.4	20	70	0
1,2-Dibromoethane	0.454	0.47	-	-3.5	20	70	0
2-Hexanone	0.345	0.326	-	5.5	20	67	0
Chlorobenzene	1.414	1.463	-	-3.5	20	70	0
Ethylbenzene	2.362	2.483	-	-5.1	20	72	0
1,1,1,2-Tetrachloroethane	0.507	0.454	-	10.5	20	62	0
p/m Xylene	0.914	0.976	-	-6.8	20	72	0
o Xylene	0.877	0.915	-	-4.3	20	70	0
Styrene	1.491	1.56	-	-4.6	20	71	0
1,4-Dichlorobenzene-d4	1	1	-	0	20	70	0
Bromoform	0.671	0.513	-	23.5*	20	57	0
Isopropylbenzene	4.756	4.708	-	1	20	72	0
4-Bromofluorobenzene	1.019	0.976	-	4.2	20	67	0
Bromobenzene	1.146	1.111	-	3.1	20	70	0
n-Propylbenzene	5.63	5.716	-	-1.5	20	73	0
1,1,2,2-Tetrachloroethane	1.232	1.241	-	-0.7	20	72	0
2-Chlorotoluene	3.421	3.431	-	-0.3	20	72	0
1,3,5-Trimethylbenzene	4.068	4.129	-	-1.5	20	73	0
1,2,3-Trichloropropane	0.957	1.009	-	-5.4	20	75	0
4-Chlorotoluene	3.456	3.448	-	0.2	20	72	0
tert-Butylbenzene	3.431	3.434	-	-0.1	20	73	0
1,2,4-Trimethylbenzene	4.109	4.112	-	-0.1	20	72	0
sec-Butylbenzene	5.224	5.357	-	-2.5	20	74	0
p-Isopropyltoluene	4.405	4.496	-	-2.1	20	74	0
1,3-Dichlorobenzene	2.254	2.215	-	1.7	20	72	0
1,4-Dichlorobenzene	2.254	2.245	-	0.4	20	72	0
n-Butylbenzene	4.073	4.259	-	-4.6	20	75	0
1,2-Dichlorobenzene	2.105	2.089	-	0.8	20	73	0
1,2-Dibromo-3-chloropropan	0.22	0.188	-	14.5	20	64	0
Hexachlorobutadiene	0.618	0.582	-	5.8	20	69	0
1,2,4-Trichlorobenzene	1.372	1.338	-	2.5	20	70	0
Naphthalene	3.987	3.938	-	1.2	20	74	0
1,2,3-Trichlorobenzene	1.291	1.233	-	4.5	20	70	0

\* Value outside of QC limits.



**Continuing Calibration  
Form 7**

Client	: Vertex Environmental Services, Inc.	Lab Number	: L1703750
Project Name	: EAST BOSTON	Project Number	: 43068
Instrument ID	: VOA111	Calibration Date	: 02/10/17 08:30
Lab File ID	: V11170210A01	Init. Calib. Date(s)	: 01/30/17
Sample No	: WG976906-2	Init. Calib. Times	: 21:39 01/31/17 00:38
Channel	:		

Compound	Ave. RRF	RRF	Min RRF	%D	Max %D	Area%	Dev(min)
Fluorobenzene	1	1	-	0	20	81	-.01
Dichlorodifluoromethane	0.292	0.261	-	10.6	20	73	0
Chloromethane	0.451	0.475	-	-5.3	20	85	0
Vinyl chloride	0.346	0.369	-	-6.6	20	87	0
Bromomethane	0.152	0.16	-	-5.3	20	87	0
Chloroethane	0.177	0.206	-	-16.4	20	87	0
Trichlorofluoromethane	0.361	0.371	-	-2.8	20	83	0
Ethyl ether	0.146	0.147	-	-0.7	20	82	0
1,1-Dichloroethene	0.199	0.206	-	-3.5	20	85	0
Carbon disulfide	0.765	0.826	-	-8	20	91	0
Freon-113	0.18	0.176	-	2.2	20	79	0
Acrolein	0.034	0.029	-	14.7	20	58	-.01
Methylene chloride	0.264	0.323	-	-22.3*	20	101	0
Acetone	0.106	0.108	-	-1.9	20	76	0
trans-1,2-Dichloroethene	0.234	0.244	-	-4.3	20	83	0
Methyl acetate	0.222	0.217	-	2.3	20	85	0
Methyl tert-butyl ether	0.756	0.764	-	-1.1	20	84	-.01
tert-Butyl alcohol	0.026	0.025	-	3.8	20	83	-.01
Diisopropyl ether	1.413	1.487	-	-5.2	20	86	0
1,1-Dichloroethane	0.565	0.597	-	-5.7	20	86	0
Halothane	0.14	0.143	-	-2.1	20	84	0
Acrylonitrile	0.105	0.108	-	-2.9	20	82	0
Ethyl tert-butyl ether	1.043	1.067	-	-2.3	20	85	0
Vinyl acetate	0.941	0.977	-	-3.8	20	85	-.01
cis-1,2-Dichloroethene	0.265	0.269	-	-1.5	20	82	0
2,2-Dichloropropane	0.39	0.426	-	-9.2	20	88	0
Bromochloromethane	0.114	0.114	-	0	20	80	-.01
Cyclohexane	0.523	0.529	-	-1.1	20	83	0
Chloroform	0.478	0.497	-	-4	20	84	-.01
Ethyl acetate	0.342	0.345	-	-0.9	20	84	-.01
Carbon tetrachloride	0.317	0.33	-	-4.1	20	84	0
Tetrahydrofuran	0.128	0.135	-	-5.5	20	86	-.01
Dibromofluoromethane	0.236	0.234	-	0.8	20	80	0
1,1,1-Trichloroethane	0.389	0.416	-	-6.9	20	85	0
2-Butanone	0.158	0.146	-	7.6	20	77	0
1,1-Dichloropropene	0.348	0.378	-	-8.6	20	87	-.01
Benzene	1.024	1.069	-	-4.4	20	85	-.01
tert-Amyl methyl ether	0.7	0.702	-	-0.3	20	82	-.01
1,2-Dichloroethane-d4	0.321	0.326	-	-1.6	20	83	-.01
1,2-Dichloroethane	0.45	0.472	-	-4.9	20	84	-.01
Methyl cyclohexane	0.357	0.355	-	0.6	20	81	-.01
Trichloroethene	0.257	0.272	-	-5.8	20	86	-.01
Dibromomethane	0.151	0.151	-	0	20	82	0
1,2-Dichloropropane	0.318	0.328	-	-3.1	20	83	-.01
2-Chloroethyl vinyl ether	0.161	0.162	-	-0.6	20	81	-.01

\* Value outside of QC limits.



**Continuing Calibration  
Form 7**

Client	: Vertex Environmental Services, Inc.	Lab Number	: L1703750
Project Name	: EAST BOSTON	Project Number	: 43068
Instrument ID	: VOA111	Calibration Date	: 02/10/17 08:30
Lab File ID	: V11170210A01	Init. Calib. Date(s)	: 01/30/17
Sample No	: WG976906-2	Init. Calib. Times	: 21:39 01/31/17 00:38
Channel	:		

Compound	Ave. RRF	RRF	Min RRF	%D	Max %D	Area%	Dev(min)
Bromodichloromethane	0.365	0.365	-	0	20	82	-.01
1,4-Dioxane	0.00225	0.00182	-	19.1	20	64	-.01
cis-1,3-Dichloropropene	0.432	0.438	-	-1.4	20	84	0
Chlorobenzene-d5	1	1	-	0	20	82	0
Toluene-d8	1.352	1.362	-	-0.7	20	82	0
Toluene	0.899	0.928	-	-3.2	20	85	0
4-Methyl-2-pentanone	0.145	0.133	-	8.3	20	80	0
Tetrachloroethene	0.327	0.335	-	-2.4	20	83	0
trans-1,3-Dichloropropene	0.548	0.551	-	-0.5	20	84	-.01
Ethyl methacrylate	20	17.779	-	11.1	20	80	-.01
1,1,2-Trichloroethane	0.261	0.268	-	-2.7	20	83	0
Chlorodibromomethane	0.335	0.326	-	2.7	20	80	-.01
1,3-Dichloropropane	0.562	0.579	-	-3	20	84	0
1,2-Dibromoethane	0.285	0.281	-	1.4	20	80	0
2-Hexanone	0.306	0.292	-	4.6	20	80	-.01
Chlorobenzene	0.972	0.978	-	-0.6	20	83	0
Ethylbenzene	1.74	1.823	-	-4.8	20	86	0
1,1,1,2-Tetrachloroethane	0.341	0.34	-	0.3	20	82	0
p/m Xylene	0.631	0.659	-	-4.4	20	85	0
o Xylene	0.603	0.618	-	-2.5	20	83	0
Styrene	1.018	1.037	-	-1.9	20	83	0
1,4-Dichlorobenzene-d4	1	1	-	0	20	82	0
Bromoform	0.412	0.386	-	6.3	20	77	0
Isopropylbenzene	3.309	3.485	-	-5.3	20	85	0
4-Bromofluorobenzene	1.064	1.095	-	-2.9	20	84	0
Bromobenzene	0.78	0.759	-	2.7	20	81	0
n-Propylbenzene	4.144	4.428	-	-6.9	20	86	0
1,4-Dichlorobutane	1.642	1.677	-	-2.1	20	85	0
1,1,2,2-Tetrachloroethane	0.783	0.778	-	0.6	20	81	0
4-Ethyltoluene	3.249	3.468	-	-6.7	20	86	0
2-Chlorotoluene	2.943	3.094	-	-5.1	20	86	0
1,3,5-Trimethylbenzene	2.832	2.987	-	-5.5	20	86	0
1,2,3-Trichloropropane	0.664	0.679	-	-2.3	20	84	0
trans-1,4-Dichloro-2-butene	0.327	0.341	-	-4.3	20	85	0
4-Chlorotoluene	2.607	2.752	-	-5.6	20	86	0
tert-Butylbenzene	2.294	2.399	-	-4.6	20	84	0
1,2,4-Trimethylbenzene	2.895	3.013	-	-4.1	20	84	0
sec-Butylbenzene	3.577	3.813	-	-6.6	20	86	0
p-Isopropyltoluene	2.913	3.101	-	-6.5	20	85	0
1,3-Dichlorobenzene	1.545	1.551	-	-0.4	20	82	0
1,4-Dichlorobenzene	1.555	1.566	-	-0.7	20	84	0
p-Diethylbenzene	1.703	1.824	-	-7.1	20	86	0
n-Butylbenzene	2.973	3.248	-	-9.2	20	90	0
1,2-Dichlorobenzene	1.448	1.424	-	1.7	20	81	0
1,2,4,5-Tetramethylbenzene	2.748	2.789	-	-1.5	20	83	0

\* Value outside of QC limits.



# Continuing Calibration Form 7

Client : Vertex Environmental Services, Inc.      Lab Number : L1703750  
 Project Name : EAST BOSTON      Project Number : 43068  
 Instrument ID : VOA111      Calibration Date : 02/10/17 08:30  
 Lab File ID : V11170210A01      Init. Calib. Date(s) : 01/30/17      01/31/17  
 Sample No : WG976906-2      Init. Calib. Times : 21:39      00:38  
 Channel :

Compound	Ave. RRF	RRF	Min RRF	%D	Max %D	Area%	Dev(min)
1,2-Dibromo-3-chloropropan	0.104	0.088	-	15.4	20	75	0
1,3,5-Trichlorobenzene	1.101	1.095	-	0.5	20	80	0
Hexachlorobutadiene	0.485	0.462	-	4.7	20	77	0
1,2,4-Trichlorobenzene	0.985	0.954	-	3.1	20	79	0
Naphthalene	2.073	1.989	-	4.1	20	79	0
1,2,3-Trichlorobenzene	0.892	0.845	-	5.3	20	77	0

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\* Value outside of QC limits.





## ANALYTICAL REPORT

Lab Number:	L1703861
Client:	Vertex Environmental Services, Inc. 400 Libbey Pkwy Weymouth, MA 02184
ATTN:	Bill Gibbons
Phone:	(617) 830-1540
Project Name:	EAST BOSTON
Project Number:	43068
Report Date:	02/14/17

The original project report/data package is held by Alpha Analytical. This report/data package is paginated and should be reproduced only in its entirety. Alpha Analytical holds no responsibility for results and/or data that are not consistent with the original.

*Certifications & Approvals:* MA (M-MA086), NH NELAP (2064), NJ NELAP (MA935), CT (PH-0574), IL (200077), ME (MA00086), MD (348), NH (2003), NY (1111-25700/666), PA (68-03671), RI (LA000065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #P330-14-00197).

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Eight Walkup Drive, Westborough, MA 01581-1019  
508-898-9220 (Fax) 508-898-9193 800-624-9220 - [www.alphalab.com](http://www.alphalab.com)



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703861  
**Report Date:** 02/14/17

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L1703861-01	VES-121 (0-2)	SOIL	MA	02/07/17 07:30	02/07/17
L1703861-02	VES-121 (14-15)	SOIL	MA	02/07/17 09:00	02/07/17
L1703861-03	VES-120 (1-2)	SOIL	MA	02/07/17 10:00	02/07/17
L1703861-04	VES-101 (5-6)	SOIL	MA	02/07/17 11:30	02/07/17
L1703861-05	VES-101 (10-12)	SOIL	MA	02/07/17 12:00	02/07/17
L1703861-06	VES-102 (0-2)	SOIL	MA	02/07/17 13:15	02/07/17
L1703861-07	VES-102 (10-12)	SOIL	MA	02/07/17 13:20	02/07/17

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703861  
**Report Date:** 02/14/17

### MADEP MCP Response Action Analytical Report Certification

This form provides certifications for all samples performed by MCP methods. Please refer to the Sample Results and Container Information sections of this report for specification of MCP methods used for each analysis. The following questions pertain only to MCP Analytical Methods.

<b>An affirmative response to questions A through F is required for "Presumptive Certainty" status</b>		
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
B	Were the analytical method(s) and all associated QC requirements specified in the selected CAM protocol(s) followed?	YES
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
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
E a.	VPH, EPH, and APH Methods only: Was each method conducted without significant modification(s)? (Refer to the individual method(s) for a list of significant modifications).	YES
E b.	APH and TO-15 Methods only: Was the complete analyte list reported for each method?	N/A
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

<b>A response to questions G, H and I is required for "Presumptive Certainty" status</b>		
G	Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocol(s)?	YES
H	Were all QC performance standards specified in the CAM protocol(s) achieved?	NO
I	Were results reported for the complete analyte list specified in the selected CAM protocol(s)?	NO

**For any questions answered "No", please refer to the case narrative section on the following page(s).**

Please note that sample matrix information is located in the Sample Results section of this report.



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703861  
**Report Date:** 02/14/17

### Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively. When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. All specific QC information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated usability implications. Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances the specific failure is not narrated but noted in the associated QC table. The information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated usability implications.

Please see the associated ADEx data file for a comparison of laboratory reporting limits that were achieved with the regulatory Numerical Standards requested on the Chain of Custody.

#### HOLD POLICY

For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Client Service Representative and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Client Services at 800-624-9220 with any questions.

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703861  
**Report Date:** 02/14/17

### Case Narrative (continued)

#### MCP Related Narratives

Sample Receipt

In reference to question H:

A Matrix Spike was not submitted for the analysis of Metals.

#### Volatile Organics

In reference to question H:

The initial calibration, associated with L1703861-01 through -07, did not meet the method required minimum response factor on the lowest calibration standard for 1,4-dioxane (0.0020), as well as the average response factor for 1,4-dioxane.

The continuing calibration standard, associated with L1703861-01 through -07, is outside the acceptance criteria for several compounds; however, it is within overall method allowances. A copy of the continuing calibration standard is included as an addendum to this report.

#### VPH

In reference to question I:

All samples were analyzed for a subset of MCP analytes per the Chain of Custody.

#### EPH

In reference to question I:

All samples were analyzed for a subset of MCP analytes per the Chain of Custody.

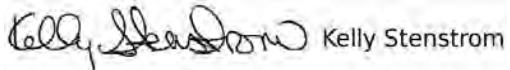
#### Metals

In reference to question I:

All samples were analyzed for a subset of MCP analytes per the Chain of Custody.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature:


 Kelly Stenstrom

Title: Technical Director/Representative

Date: 02/14/17

# ORGANICS



# VOLATILES



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703861  
**Report Date:** 02/14/17

**SAMPLE RESULTS**

Lab ID:	L1703861-01	Date Collected:	02/07/17 07:30
Client ID:	VES-121 (0-2)	Date Received:	02/07/17
Sample Location:	MA	Field Prep:	Not Specified
Matrix:	Soil		
Analytical Method:	97,8260C		
Analytical Date:	02/12/17 12:21		
Analyst:	JC		
Percent Solids:	90%		

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics by 8260/5035 - Westborough Lab</b>						
Methylene chloride	ND	ug/kg	11	--	--	1
1,1-Dichloroethane	ND	ug/kg	1.6	--	--	1
Chloroform	ND	ug/kg	1.6	--	--	1
Carbon tetrachloride	ND	ug/kg	1.1	--	--	1
1,2-Dichloropropane	ND	ug/kg	3.8	--	--	1
Dibromochloromethane	ND	ug/kg	1.1	--	--	1
1,1,2-Trichloroethane	ND	ug/kg	1.6	--	--	1
Tetrachloroethene	ND	ug/kg	1.1	--	--	1
Chlorobenzene	ND	ug/kg	1.1	--	--	1
Trichlorofluoromethane	ND	ug/kg	4.4	--	--	1
1,2-Dichloroethane	ND	ug/kg	1.1	--	--	1
1,1,1-Trichloroethane	ND	ug/kg	1.1	--	--	1
Bromodichloromethane	ND	ug/kg	1.1	--	--	1
trans-1,3-Dichloropropene	ND	ug/kg	1.1	--	--	1
cis-1,3-Dichloropropene	ND	ug/kg	1.1	--	--	1
1,3-Dichloropropene, Total	ND	ug/kg	1.1	--	--	1
1,1-Dichloropropene	ND	ug/kg	4.4	--	--	1
Bromoform	ND	ug/kg	4.4	--	--	1
1,1,2,2-Tetrachloroethane	ND	ug/kg	1.1	--	--	1
Benzene	ND	ug/kg	1.1	--	--	1
Toluene	ND	ug/kg	1.6	--	--	1
Ethylbenzene	ND	ug/kg	1.1	--	--	1
Chloromethane	ND	ug/kg	4.4	--	--	1
Bromomethane	ND	ug/kg	2.2	--	--	1
Vinyl chloride	ND	ug/kg	2.2	--	--	1
Chloroethane	ND	ug/kg	2.2	--	--	1
1,1-Dichloroethene	ND	ug/kg	1.1	--	--	1
trans-1,2-Dichloroethene	ND	ug/kg	1.6	--	--	1
Trichloroethene	ND	ug/kg	1.1	--	--	1
1,2-Dichlorobenzene	ND	ug/kg	4.4	--	--	1



Project Name: EAST BOSTON

Lab Number: L1703861

Project Number: 43068

Report Date: 02/14/17

**SAMPLE RESULTS**

Lab ID:	L1703861-01	Date Collected:	02/07/17 07:30			
Client ID:	VES-121 (0-2)	Date Received:	02/07/17			
Sample Location:	MA	Field Prep:	Not Specified			
Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics by 8260/5035 - Westborough Lab</b>						
1,3-Dichlorobenzene	ND	ug/kg	4.4	--	1	
1,4-Dichlorobenzene	ND	ug/kg	4.4	--	1	
Methyl tert butyl ether	ND	ug/kg	2.2	--	1	
p/m-Xylene	ND	ug/kg	2.2	--	1	
o-Xylene	ND	ug/kg	2.2	--	1	
Xylenes, Total	ND	ug/kg	2.2	--	1	
cis-1,2-Dichloroethene	ND	ug/kg	1.1	--	1	
1,2-Dichloroethene, Total	ND	ug/kg	1.1	--	1	
Dibromomethane	ND	ug/kg	4.4	--	1	
1,2,3-Trichloropropane	ND	ug/kg	4.4	--	1	
Styrene	ND	ug/kg	2.2	--	1	
Dichlorodifluoromethane	ND	ug/kg	11	--	1	
Acetone	ND	ug/kg	39	--	1	
Carbon disulfide	ND	ug/kg	4.4	--	1	
Methyl ethyl ketone	ND	ug/kg	11	--	1	
Methyl isobutyl ketone	ND	ug/kg	11	--	1	
2-Hexanone	ND	ug/kg	11	--	1	
Bromochloromethane	ND	ug/kg	4.4	--	1	
Tetrahydrofuran	ND	ug/kg	4.4	--	1	
2,2-Dichloropropane	ND	ug/kg	5.4	--	1	
1,2-Dibromoethane	ND	ug/kg	4.4	--	1	
1,3-Dichloropropane	ND	ug/kg	4.4	--	1	
1,1,1,2-Tetrachloroethane	ND	ug/kg	1.1	--	1	
Bromobenzene	ND	ug/kg	5.4	--	1	
n-Butylbenzene	ND	ug/kg	1.1	--	1	
sec-Butylbenzene	ND	ug/kg	1.1	--	1	
tert-Butylbenzene	ND	ug/kg	4.4	--	1	
o-Chlorotoluene	ND	ug/kg	4.4	--	1	
p-Chlorotoluene	ND	ug/kg	4.4	--	1	
1,2-Dibromo-3-chloropropane	ND	ug/kg	4.4	--	1	
Hexachlorobutadiene	ND	ug/kg	4.4	--	1	
Isopropylbenzene	ND	ug/kg	1.1	--	1	
p-Isopropyltoluene	ND	ug/kg	1.1	--	1	
Naphthalene	ND	ug/kg	4.4	--	1	
n-Propylbenzene	ND	ug/kg	1.1	--	1	
1,2,3-Trichlorobenzene	ND	ug/kg	4.4	--	1	
1,2,4-Trichlorobenzene	ND	ug/kg	4.4	--	1	
1,3,5-Trimethylbenzene	ND	ug/kg	4.4	--	1	
1,2,4-Trimethylbenzene	ND	ug/kg	4.4	--	1	



Project Name: EAST BOSTON

Lab Number: L1703861

Project Number: 43068

Report Date: 02/14/17

**SAMPLE RESULTS**

Lab ID: L1703861-01  
 Client ID: VES-121 (0-2)  
 Sample Location: MA

Date Collected: 02/07/17 07:30  
 Date Received: 02/07/17  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics by 8260/5035 - Westborough Lab						
Diethyl ether	ND	ug/kg	5.4	--	--	1
Diisopropyl Ether	ND	ug/kg	4.4	--	--	1
Ethyl-Tert-Butyl-Ether	ND	ug/kg	4.4	--	--	1
Tertiary-Amyl Methyl Ether	ND	ug/kg	4.4	--	--	1
1,4-Dioxane	ND	ug/kg	44	--	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	100		70-130
Toluene-d8	100		70-130
4-Bromofluorobenzene	106		70-130
Dibromofluoromethane	97		70-130

Project Name: EAST BOSTON

Lab Number: L1703861

Project Number: 43068

Report Date: 02/14/17

**SAMPLE RESULTS**

Lab ID: L1703861-02  
 Client ID: VES-121 (14-15)  
 Sample Location: MA  
 Matrix: Soil  
 Analytical Method: 97,8260C  
 Analytical Date: 02/12/17 12:47  
 Analyst: JC  
 Percent Solids: 68%

Date Collected: 02/07/17 09:00  
 Date Received: 02/07/17  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics by 8260/5035 - Westborough Lab</b>						
Methylene chloride	ND	ug/kg	8.8	--	--	1
1,1-Dichloroethane	ND	ug/kg	1.3	--	--	1
Chloroform	ND	ug/kg	1.3	--	--	1
Carbon tetrachloride	ND	ug/kg	0.88	--	--	1
1,2-Dichloropropane	ND	ug/kg	3.1	--	--	1
Dibromochloromethane	ND	ug/kg	0.88	--	--	1
1,1,2-Trichloroethane	ND	ug/kg	1.3	--	--	1
Tetrachloroethene	ND	ug/kg	0.88	--	--	1
Chlorobenzene	ND	ug/kg	0.88	--	--	1
Trichlorofluoromethane	ND	ug/kg	3.5	--	--	1
1,2-Dichloroethane	ND	ug/kg	0.88	--	--	1
1,1,1-Trichloroethane	ND	ug/kg	0.88	--	--	1
Bromodichloromethane	ND	ug/kg	0.88	--	--	1
trans-1,3-Dichloropropene	ND	ug/kg	0.88	--	--	1
cis-1,3-Dichloropropene	ND	ug/kg	0.88	--	--	1
1,3-Dichloropropene, Total	ND	ug/kg	0.88	--	--	1
1,1-Dichloropropene	ND	ug/kg	3.5	--	--	1
Bromoform	ND	ug/kg	3.5	--	--	1
1,1,2,2-Tetrachloroethane	ND	ug/kg	0.88	--	--	1
Benzene	ND	ug/kg	0.88	--	--	1
Toluene	ND	ug/kg	1.3	--	--	1
Ethylbenzene	ND	ug/kg	0.88	--	--	1
Chloromethane	ND	ug/kg	3.5	--	--	1
Bromomethane	ND	ug/kg	1.8	--	--	1
Vinyl chloride	ND	ug/kg	1.8	--	--	1
Chloroethane	ND	ug/kg	1.8	--	--	1
1,1-Dichloroethene	ND	ug/kg	0.88	--	--	1
trans-1,2-Dichloroethene	ND	ug/kg	1.3	--	--	1
Trichloroethene	ND	ug/kg	0.88	--	--	1
1,2-Dichlorobenzene	ND	ug/kg	3.5	--	--	1



Project Name: EAST BOSTON

Lab Number: L1703861

Project Number: 43068

Report Date: 02/14/17

**SAMPLE RESULTS**

Lab ID:	L1703861-02	Date Collected:	02/07/17 09:00			
Client ID:	VES-121 (14-15)	Date Received:	02/07/17			
Sample Location:	MA	Field Prep:	Not Specified			
Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics by 8260/5035 - Westborough Lab</b>						
1,3-Dichlorobenzene	ND	ug/kg	3.5	--	1	
1,4-Dichlorobenzene	ND	ug/kg	3.5	--	1	
Methyl tert butyl ether	ND	ug/kg	1.8	--	1	
p/m-Xylene	ND	ug/kg	1.8	--	1	
o-Xylene	ND	ug/kg	1.8	--	1	
Xylenes, Total	ND	ug/kg	1.8	--	1	
cis-1,2-Dichloroethene	ND	ug/kg	0.88	--	1	
1,2-Dichloroethene, Total	ND	ug/kg	0.88	--	1	
Dibromomethane	ND	ug/kg	3.5	--	1	
1,2,3-Trichloropropane	ND	ug/kg	3.5	--	1	
Styrene	ND	ug/kg	1.8	--	1	
Dichlorodifluoromethane	ND	ug/kg	8.8	--	1	
Acetone	ND	ug/kg	32	--	1	
Carbon disulfide	ND	ug/kg	3.5	--	1	
Methyl ethyl ketone	ND	ug/kg	8.8	--	1	
Methyl isobutyl ketone	ND	ug/kg	8.8	--	1	
2-Hexanone	ND	ug/kg	8.8	--	1	
Bromochloromethane	ND	ug/kg	3.5	--	1	
Tetrahydrofuran	ND	ug/kg	3.5	--	1	
2,2-Dichloropropane	ND	ug/kg	4.4	--	1	
1,2-Dibromoethane	ND	ug/kg	3.5	--	1	
1,3-Dichloropropane	ND	ug/kg	3.5	--	1	
1,1,1,2-Tetrachloroethane	ND	ug/kg	0.88	--	1	
Bromobenzene	ND	ug/kg	4.4	--	1	
n-Butylbenzene	ND	ug/kg	0.88	--	1	
sec-Butylbenzene	ND	ug/kg	0.88	--	1	
tert-Butylbenzene	ND	ug/kg	3.5	--	1	
o-Chlorotoluene	ND	ug/kg	3.5	--	1	
p-Chlorotoluene	ND	ug/kg	3.5	--	1	
1,2-Dibromo-3-chloropropane	ND	ug/kg	3.5	--	1	
Hexachlorobutadiene	ND	ug/kg	3.5	--	1	
Isopropylbenzene	ND	ug/kg	0.88	--	1	
p-Isopropyltoluene	ND	ug/kg	0.88	--	1	
Naphthalene	3.5	ug/kg	3.5	--	1	
n-Propylbenzene	ND	ug/kg	0.88	--	1	
1,2,3-Trichlorobenzene	ND	ug/kg	3.5	--	1	
1,2,4-Trichlorobenzene	ND	ug/kg	3.5	--	1	
1,3,5-Trimethylbenzene	ND	ug/kg	3.5	--	1	
1,2,4-Trimethylbenzene	ND	ug/kg	3.5	--	1	



Project Name: EAST BOSTON

Lab Number: L1703861

Project Number: 43068

Report Date: 02/14/17

**SAMPLE RESULTS**

Lab ID: L1703861-02  
 Client ID: VES-121 (14-15)  
 Sample Location: MA

Date Collected: 02/07/17 09:00  
 Date Received: 02/07/17  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics by 8260/5035 - Westborough Lab						
Diethyl ether	ND	ug/kg	4.4	--	--	1
Diisopropyl Ether	ND	ug/kg	3.5	--	--	1
Ethyl-Tert-Butyl-Ether	ND	ug/kg	3.5	--	--	1
Tertiary-Amyl Methyl Ether	ND	ug/kg	3.5	--	--	1
1,4-Dioxane	ND	ug/kg	35	--	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	104		70-130
Toluene-d8	100		70-130
4-Bromofluorobenzene	107		70-130
Dibromofluoromethane	99		70-130

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703861  
**Report Date:** 02/14/17

**SAMPLE RESULTS**

Lab ID:	L1703861-03	Date Collected:	02/07/17 10:00
Client ID:	VES-120 (1-2)	Date Received:	02/07/17
Sample Location:	MA	Field Prep:	Not Specified
Matrix:	Soil		
Analytical Method:	97,8260C		
Analytical Date:	02/12/17 13:12		
Analyst:	JC		
Percent Solids:	84%		

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics by 8260/5035 - Westborough Lab</b>						
Methylene chloride	ND	ug/kg	7.4	--	--	1
1,1-Dichloroethane	ND	ug/kg	1.1	--	--	1
Chloroform	ND	ug/kg	1.1	--	--	1
Carbon tetrachloride	ND	ug/kg	0.74	--	--	1
1,2-Dichloropropane	ND	ug/kg	2.6	--	--	1
Dibromochloromethane	ND	ug/kg	0.74	--	--	1
1,1,2-Trichloroethane	ND	ug/kg	1.1	--	--	1
Tetrachloroethene	ND	ug/kg	0.74	--	--	1
Chlorobenzene	ND	ug/kg	0.74	--	--	1
Trichlorofluoromethane	ND	ug/kg	3.0	--	--	1
1,2-Dichloroethane	ND	ug/kg	0.74	--	--	1
1,1,1-Trichloroethane	ND	ug/kg	0.74	--	--	1
Bromodichloromethane	ND	ug/kg	0.74	--	--	1
trans-1,3-Dichloropropene	ND	ug/kg	0.74	--	--	1
cis-1,3-Dichloropropene	ND	ug/kg	0.74	--	--	1
1,3-Dichloropropene, Total	ND	ug/kg	0.74	--	--	1
1,1-Dichloropropene	ND	ug/kg	3.0	--	--	1
Bromoform	ND	ug/kg	3.0	--	--	1
1,1,2,2-Tetrachloroethane	ND	ug/kg	0.74	--	--	1
Benzene	ND	ug/kg	0.74	--	--	1
Toluene	ND	ug/kg	1.1	--	--	1
Ethylbenzene	ND	ug/kg	0.74	--	--	1
Chloromethane	ND	ug/kg	3.0	--	--	1
Bromomethane	ND	ug/kg	1.5	--	--	1
Vinyl chloride	ND	ug/kg	1.5	--	--	1
Chloroethane	ND	ug/kg	1.5	--	--	1
1,1-Dichloroethene	ND	ug/kg	0.74	--	--	1
trans-1,2-Dichloroethene	ND	ug/kg	1.1	--	--	1
Trichloroethene	ND	ug/kg	0.74	--	--	1
1,2-Dichlorobenzene	ND	ug/kg	3.0	--	--	1



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703861  
**Report Date:** 02/14/17

**SAMPLE RESULTS**

Lab ID:	L1703861-03	Date Collected:	02/07/17 10:00
Client ID:	VES-120 (1-2)	Date Received:	02/07/17
Sample Location:	MA	Field Prep:	Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics by 8260/5035 - Westborough Lab</b>						
1,3-Dichlorobenzene	ND	ug/kg	3.0	--	1	
1,4-Dichlorobenzene	ND	ug/kg	3.0	--	1	
Methyl tert butyl ether	ND	ug/kg	1.5	--	1	
p/m-Xylene	ND	ug/kg	1.5	--	1	
o-Xylene	ND	ug/kg	1.5	--	1	
Xylenes, Total	ND	ug/kg	1.5	--	1	
cis-1,2-Dichloroethene	ND	ug/kg	0.74	--	1	
1,2-Dichloroethene, Total	ND	ug/kg	0.74	--	1	
Dibromomethane	ND	ug/kg	3.0	--	1	
1,2,3-Trichloropropane	ND	ug/kg	3.0	--	1	
Styrene	ND	ug/kg	1.5	--	1	
Dichlorodifluoromethane	ND	ug/kg	7.4	--	1	
Acetone	ND	ug/kg	27	--	1	
Carbon disulfide	ND	ug/kg	3.0	--	1	
Methyl ethyl ketone	ND	ug/kg	7.4	--	1	
Methyl isobutyl ketone	ND	ug/kg	7.4	--	1	
2-Hexanone	ND	ug/kg	7.4	--	1	
Bromochloromethane	ND	ug/kg	3.0	--	1	
Tetrahydrofuran	ND	ug/kg	3.0	--	1	
2,2-Dichloropropane	ND	ug/kg	3.7	--	1	
1,2-Dibromoethane	ND	ug/kg	3.0	--	1	
1,3-Dichloropropane	ND	ug/kg	3.0	--	1	
1,1,1,2-Tetrachloroethane	ND	ug/kg	0.74	--	1	
Bromobenzene	ND	ug/kg	3.7	--	1	
n-Butylbenzene	ND	ug/kg	0.74	--	1	
sec-Butylbenzene	ND	ug/kg	0.74	--	1	
tert-Butylbenzene	ND	ug/kg	3.0	--	1	
o-Chlorotoluene	ND	ug/kg	3.0	--	1	
p-Chlorotoluene	ND	ug/kg	3.0	--	1	
1,2-Dibromo-3-chloropropane	ND	ug/kg	3.0	--	1	
Hexachlorobutadiene	ND	ug/kg	3.0	--	1	
Isopropylbenzene	ND	ug/kg	0.74	--	1	
p-Isopropyltoluene	ND	ug/kg	0.74	--	1	
Naphthalene	ND	ug/kg	3.0	--	1	
n-Propylbenzene	ND	ug/kg	0.74	--	1	
1,2,3-Trichlorobenzene	ND	ug/kg	3.0	--	1	
1,2,4-Trichlorobenzene	ND	ug/kg	3.0	--	1	
1,3,5-Trimethylbenzene	ND	ug/kg	3.0	--	1	
1,2,4-Trimethylbenzene	ND	ug/kg	3.0	--	1	



Project Name: EAST BOSTON

Lab Number: L1703861

Project Number: 43068

Report Date: 02/14/17

**SAMPLE RESULTS**

Lab ID: L1703861-03  
 Client ID: VES-120 (1-2)  
 Sample Location: MA

Date Collected: 02/07/17 10:00  
 Date Received: 02/07/17  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics by 8260/5035 - Westborough Lab						
Diethyl ether	ND	ug/kg	3.7	--	--	1
Diisopropyl Ether	ND	ug/kg	3.0	--	--	1
Ethyl-Tert-Butyl-Ether	ND	ug/kg	3.0	--	--	1
Tertiary-Amyl Methyl Ether	ND	ug/kg	3.0	--	--	1
1,4-Dioxane	ND	ug/kg	30	--	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	103		70-130
Toluene-d8	100		70-130
4-Bromofluorobenzene	104		70-130
Dibromofluoromethane	100		70-130

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703861  
**Report Date:** 02/14/17

**SAMPLE RESULTS**

Lab ID:	L1703861-04	Date Collected:	02/07/17 11:30
Client ID:	VES-101 (5-6)	Date Received:	02/07/17
Sample Location:	MA	Field Prep:	Not Specified
Matrix:	Soil		
Analytical Method:	97,8260C		
Analytical Date:	02/12/17 13:37		
Analyst:	JC		
Percent Solids:	38%		

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics by 8260/5035 - Westborough Lab</b>						
Methylene chloride	ND	ug/kg	25	--	--	1
1,1-Dichloroethane	ND	ug/kg	3.8	--	--	1
Chloroform	ND	ug/kg	3.8	--	--	1
Carbon tetrachloride	ND	ug/kg	2.5	--	--	1
1,2-Dichloropropane	ND	ug/kg	8.8	--	--	1
Dibromochloromethane	ND	ug/kg	2.5	--	--	1
1,1,2-Trichloroethane	ND	ug/kg	3.8	--	--	1
Tetrachloroethene	ND	ug/kg	2.5	--	--	1
Chlorobenzene	ND	ug/kg	2.5	--	--	1
Trichlorofluoromethane	ND	ug/kg	10	--	--	1
1,2-Dichloroethane	ND	ug/kg	2.5	--	--	1
1,1,1-Trichloroethane	ND	ug/kg	2.5	--	--	1
Bromodichloromethane	ND	ug/kg	2.5	--	--	1
trans-1,3-Dichloropropene	ND	ug/kg	2.5	--	--	1
cis-1,3-Dichloropropene	ND	ug/kg	2.5	--	--	1
1,3-Dichloropropene, Total	ND	ug/kg	2.5	--	--	1
1,1-Dichloropropene	ND	ug/kg	10	--	--	1
Bromoform	ND	ug/kg	10	--	--	1
1,1,2,2-Tetrachloroethane	ND	ug/kg	2.5	--	--	1
Benzene	ND	ug/kg	2.5	--	--	1
Toluene	ND	ug/kg	3.8	--	--	1
Ethylbenzene	ND	ug/kg	2.5	--	--	1
Chloromethane	ND	ug/kg	10	--	--	1
Bromomethane	ND	ug/kg	5.0	--	--	1
Vinyl chloride	ND	ug/kg	5.0	--	--	1
Chloroethane	ND	ug/kg	5.0	--	--	1
1,1-Dichloroethene	ND	ug/kg	2.5	--	--	1
trans-1,2-Dichloroethene	ND	ug/kg	3.8	--	--	1
Trichloroethene	ND	ug/kg	2.5	--	--	1
1,2-Dichlorobenzene	ND	ug/kg	10	--	--	1



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703861  
**Report Date:** 02/14/17

**SAMPLE RESULTS**

Lab ID:	L1703861-04	Date Collected:	02/07/17 11:30
Client ID:	VES-101 (5-6)	Date Received:	02/07/17
Sample Location:	MA	Field Prep:	Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics by 8260/5035 - Westborough Lab</b>						
1,3-Dichlorobenzene	ND	ug/kg	10	--	--	1
1,4-Dichlorobenzene	ND	ug/kg	10	--	--	1
Methyl tert butyl ether	ND	ug/kg	5.0	--	--	1
p/m-Xylene	ND	ug/kg	5.0	--	--	1
o-Xylene	ND	ug/kg	5.0	--	--	1
Xylenes, Total	ND	ug/kg	5.0	--	--	1
cis-1,2-Dichloroethene	ND	ug/kg	2.5	--	--	1
1,2-Dichloroethene, Total	ND	ug/kg	2.5	--	--	1
Dibromomethane	ND	ug/kg	10	--	--	1
1,2,3-Trichloropropane	ND	ug/kg	10	--	--	1
Styrene	ND	ug/kg	5.0	--	--	1
Dichlorodifluoromethane	ND	ug/kg	25	--	--	1
Acetone	590	ug/kg	90	--	--	1
Carbon disulfide	ND	ug/kg	10	--	--	1
Methyl ethyl ketone	160	ug/kg	25	--	--	1
Methyl isobutyl ketone	ND	ug/kg	25	--	--	1
2-Hexanone	ND	ug/kg	25	--	--	1
Bromochloromethane	ND	ug/kg	10	--	--	1
Tetrahydrofuran	ND	ug/kg	10	--	--	1
2,2-Dichloropropane	ND	ug/kg	12	--	--	1
1,2-Dibromoethane	ND	ug/kg	10	--	--	1
1,3-Dichloropropane	ND	ug/kg	10	--	--	1
1,1,1,2-Tetrachloroethane	ND	ug/kg	2.5	--	--	1
Bromobenzene	ND	ug/kg	12	--	--	1
n-Butylbenzene	ND	ug/kg	2.5	--	--	1
sec-Butylbenzene	ND	ug/kg	2.5	--	--	1
tert-Butylbenzene	ND	ug/kg	10	--	--	1
o-Chlorotoluene	ND	ug/kg	10	--	--	1
p-Chlorotoluene	ND	ug/kg	10	--	--	1
1,2-Dibromo-3-chloropropane	ND	ug/kg	10	--	--	1
Hexachlorobutadiene	ND	ug/kg	10	--	--	1
Isopropylbenzene	ND	ug/kg	2.5	--	--	1
p-Isopropyltoluene	ND	ug/kg	2.5	--	--	1
Naphthalene	ND	ug/kg	10	--	--	1
n-Propylbenzene	ND	ug/kg	2.5	--	--	1
1,2,3-Trichlorobenzene	ND	ug/kg	10	--	--	1
1,2,4-Trichlorobenzene	ND	ug/kg	10	--	--	1
1,3,5-Trimethylbenzene	ND	ug/kg	10	--	--	1
1,2,4-Trimethylbenzene	ND	ug/kg	10	--	--	1



Project Name: EAST BOSTON

Lab Number: L1703861

Project Number: 43068

Report Date: 02/14/17

**SAMPLE RESULTS**

Lab ID: L1703861-04

Date Collected: 02/07/17 11:30

Client ID: VES-101 (5-6)

Date Received: 02/07/17

Sample Location: MA

Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics by 8260/5035 - Westborough Lab						
Diethyl ether	ND	ug/kg	12	--	--	1
Diisopropyl Ether	ND	ug/kg	10	--	--	1
Ethyl-Tert-Butyl-Ether	ND	ug/kg	10	--	--	1
Tertiary-Amyl Methyl Ether	ND	ug/kg	10	--	--	1
1,4-Dioxane	ND	ug/kg	100	--	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	105		70-130
Toluene-d8	102		70-130
4-Bromofluorobenzene	118		70-130
Dibromofluoromethane	101		70-130

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703861  
**Report Date:** 02/14/17

**SAMPLE RESULTS**

Lab ID: L1703861-05  
Client ID: VES-101 (10-12)  
Sample Location: MA  
Matrix: Soil  
Analytical Method: 97,8260C  
Analytical Date: 02/12/17 14:03  
Analyst: JC  
Percent Solids: 41%

Date Collected: 02/07/17 12:00  
Date Received: 02/07/17  
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics by 8260/5035 - Westborough Lab</b>						
Methylene chloride	ND	ug/kg	19	--	--	1
1,1-Dichloroethane	ND	ug/kg	2.9	--	--	1
Chloroform	ND	ug/kg	2.9	--	--	1
Carbon tetrachloride	ND	ug/kg	1.9	--	--	1
1,2-Dichloropropane	ND	ug/kg	6.7	--	--	1
Dibromochloromethane	ND	ug/kg	1.9	--	--	1
1,1,2-Trichloroethane	ND	ug/kg	2.9	--	--	1
Tetrachloroethene	ND	ug/kg	1.9	--	--	1
Chlorobenzene	ND	ug/kg	1.9	--	--	1
Trichlorofluoromethane	ND	ug/kg	7.7	--	--	1
1,2-Dichloroethane	ND	ug/kg	1.9	--	--	1
1,1,1-Trichloroethane	ND	ug/kg	1.9	--	--	1
Bromodichloromethane	ND	ug/kg	1.9	--	--	1
trans-1,3-Dichloropropene	ND	ug/kg	1.9	--	--	1
cis-1,3-Dichloropropene	ND	ug/kg	1.9	--	--	1
1,3-Dichloropropene, Total	ND	ug/kg	1.9	--	--	1
1,1-Dichloropropene	ND	ug/kg	7.7	--	--	1
Bromoform	ND	ug/kg	7.7	--	--	1
1,1,2,2-Tetrachloroethane	ND	ug/kg	1.9	--	--	1
Benzene	ND	ug/kg	1.9	--	--	1
Toluene	ND	ug/kg	2.9	--	--	1
Ethylbenzene	ND	ug/kg	1.9	--	--	1
Chloromethane	ND	ug/kg	7.7	--	--	1
Bromomethane	ND	ug/kg	3.8	--	--	1
Vinyl chloride	ND	ug/kg	3.8	--	--	1
Chloroethane	ND	ug/kg	3.8	--	--	1
1,1-Dichloroethene	ND	ug/kg	1.9	--	--	1
trans-1,2-Dichloroethene	ND	ug/kg	2.9	--	--	1
Trichloroethene	ND	ug/kg	1.9	--	--	1
1,2-Dichlorobenzene	ND	ug/kg	7.7	--	--	1



Project Name: EAST BOSTON

Lab Number: L1703861

Project Number: 43068

Report Date: 02/14/17

**SAMPLE RESULTS**

Lab ID:	L1703861-05	Date Collected:	02/07/17 12:00		
Client ID:	VES-101 (10-12)	Date Received:	02/07/17		
Sample Location:	MA	Field Prep:	Not Specified		
Parameter	Result	Qualifier	Units	RL	MDL
<b>MCP Volatile Organics by 8260/5035 - Westborough Lab</b>					
1,3-Dichlorobenzene	ND	ug/kg	7.7	--	1
1,4-Dichlorobenzene	ND	ug/kg	7.7	--	1
Methyl tert butyl ether	ND	ug/kg	3.8	--	1
p/m-Xylene	ND	ug/kg	3.8	--	1
o-Xylene	ND	ug/kg	3.8	--	1
Xylenes, Total	ND	ug/kg	3.8	--	1
cis-1,2-Dichloroethene	ND	ug/kg	1.9	--	1
1,2-Dichloroethene, Total	ND	ug/kg	1.9	--	1
Dibromomethane	ND	ug/kg	7.7	--	1
1,2,3-Trichloropropane	ND	ug/kg	7.7	--	1
Styrene	ND	ug/kg	3.8	--	1
Dichlorodifluoromethane	ND	ug/kg	19	--	1
Acetone	ND	ug/kg	69	--	1
Carbon disulfide	15	ug/kg	7.7	--	1
Methyl ethyl ketone	ND	ug/kg	19	--	1
Methyl isobutyl ketone	ND	ug/kg	19	--	1
2-Hexanone	ND	ug/kg	19	--	1
Bromochloromethane	ND	ug/kg	7.7	--	1
Tetrahydrofuran	ND	ug/kg	7.7	--	1
2,2-Dichloropropane	ND	ug/kg	9.6	--	1
1,2-Dibromoethane	ND	ug/kg	7.7	--	1
1,3-Dichloropropane	ND	ug/kg	7.7	--	1
1,1,1,2-Tetrachloroethane	ND	ug/kg	1.9	--	1
Bromobenzene	ND	ug/kg	9.6	--	1
n-Butylbenzene	ND	ug/kg	1.9	--	1
sec-Butylbenzene	ND	ug/kg	1.9	--	1
tert-Butylbenzene	ND	ug/kg	7.7	--	1
o-Chlorotoluene	ND	ug/kg	7.7	--	1
p-Chlorotoluene	ND	ug/kg	7.7	--	1
1,2-Dibromo-3-chloropropane	ND	ug/kg	7.7	--	1
Hexachlorobutadiene	ND	ug/kg	7.7	--	1
Isopropylbenzene	ND	ug/kg	1.9	--	1
p-Isopropyltoluene	ND	ug/kg	1.9	--	1
Naphthalene	ND	ug/kg	7.7	--	1
n-Propylbenzene	ND	ug/kg	1.9	--	1
1,2,3-Trichlorobenzene	ND	ug/kg	7.7	--	1
1,2,4-Trichlorobenzene	ND	ug/kg	7.7	--	1
1,3,5-Trimethylbenzene	ND	ug/kg	7.7	--	1
1,2,4-Trimethylbenzene	ND	ug/kg	7.7	--	1



Project Name: EAST BOSTON

Lab Number: L1703861

Project Number: 43068

Report Date: 02/14/17

**SAMPLE RESULTS**

Lab ID: L1703861-05  
 Client ID: VES-101 (10-12)  
 Sample Location: MA

Date Collected: 02/07/17 12:00  
 Date Received: 02/07/17  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics by 8260/5035 - Westborough Lab						
Diethyl ether	ND	ug/kg	9.6	--	--	1
Diisopropyl Ether	ND	ug/kg	7.7	--	--	1
Ethyl-Tert-Butyl-Ether	ND	ug/kg	7.7	--	--	1
Tertiary-Amyl Methyl Ether	ND	ug/kg	7.7	--	--	1
1,4-Dioxane	ND	ug/kg	77	--	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	105		70-130
Toluene-d8	102		70-130
4-Bromofluorobenzene	109		70-130
Dibromofluoromethane	102		70-130

Project Name: EAST BOSTON

Lab Number: L1703861

Project Number: 43068

Report Date: 02/14/17

**SAMPLE RESULTS**

Lab ID:	L1703861-06	Date Collected:	02/07/17 13:15
Client ID:	VES-102 (0-2)	Date Received:	02/07/17
Sample Location:	MA	Field Prep:	Not Specified
Matrix:	Soil		
Analytical Method:	97,8260C		
Analytical Date:	02/12/17 14:28		
Analyst:	JC		
Percent Solids:	92%		

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics by 8260/5035 - Westborough Lab</b>						
Methylene chloride	ND	ug/kg	8.1	--	--	1
1,1-Dichloroethane	ND	ug/kg	1.2	--	--	1
Chloroform	ND	ug/kg	1.2	--	--	1
Carbon tetrachloride	ND	ug/kg	0.81	--	--	1
1,2-Dichloropropane	ND	ug/kg	2.8	--	--	1
Dibromochloromethane	ND	ug/kg	0.81	--	--	1
1,1,2-Trichloroethane	ND	ug/kg	1.2	--	--	1
Tetrachloroethene	ND	ug/kg	0.81	--	--	1
Chlorobenzene	ND	ug/kg	0.81	--	--	1
Trichlorofluoromethane	ND	ug/kg	3.2	--	--	1
1,2-Dichloroethane	ND	ug/kg	0.81	--	--	1
1,1,1-Trichloroethane	ND	ug/kg	0.81	--	--	1
Bromodichloromethane	ND	ug/kg	0.81	--	--	1
trans-1,3-Dichloropropene	ND	ug/kg	0.81	--	--	1
cis-1,3-Dichloropropene	ND	ug/kg	0.81	--	--	1
1,3-Dichloropropene, Total	ND	ug/kg	0.81	--	--	1
1,1-Dichloropropene	ND	ug/kg	3.2	--	--	1
Bromoform	ND	ug/kg	3.2	--	--	1
1,1,2,2-Tetrachloroethane	ND	ug/kg	0.81	--	--	1
Benzene	ND	ug/kg	0.81	--	--	1
Toluene	ND	ug/kg	1.2	--	--	1
Ethylbenzene	ND	ug/kg	0.81	--	--	1
Chloromethane	ND	ug/kg	3.2	--	--	1
Bromomethane	ND	ug/kg	1.6	--	--	1
Vinyl chloride	ND	ug/kg	1.6	--	--	1
Chloroethane	ND	ug/kg	1.6	--	--	1
1,1-Dichloroethene	ND	ug/kg	0.81	--	--	1
trans-1,2-Dichloroethene	ND	ug/kg	1.2	--	--	1
Trichloroethene	ND	ug/kg	0.81	--	--	1
1,2-Dichlorobenzene	ND	ug/kg	3.2	--	--	1



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703861  
**Report Date:** 02/14/17

**SAMPLE RESULTS**

Lab ID:	L1703861-06	Date Collected:	02/07/17 13:15			
Client ID:	VES-102 (0-2)	Date Received:	02/07/17			
Sample Location:	MA	Field Prep:	Not Specified			
Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics by 8260/5035 - Westborough Lab</b>						
1,3-Dichlorobenzene	ND	ug/kg	3.2	--	1	
1,4-Dichlorobenzene	ND	ug/kg	3.2	--	1	
Methyl tert butyl ether	ND	ug/kg	1.6	--	1	
p/m-Xylene	ND	ug/kg	1.6	--	1	
o-Xylene	ND	ug/kg	1.6	--	1	
Xylenes, Total	ND	ug/kg	1.6	--	1	
cis-1,2-Dichloroethene	ND	ug/kg	0.81	--	1	
1,2-Dichloroethene, Total	ND	ug/kg	0.81	--	1	
Dibromomethane	ND	ug/kg	3.2	--	1	
1,2,3-Trichloropropane	ND	ug/kg	3.2	--	1	
Styrene	ND	ug/kg	1.6	--	1	
Dichlorodifluoromethane	ND	ug/kg	8.1	--	1	
Acetone	ND	ug/kg	29	--	1	
Carbon disulfide	ND	ug/kg	3.2	--	1	
Methyl ethyl ketone	ND	ug/kg	8.1	--	1	
Methyl isobutyl ketone	ND	ug/kg	8.1	--	1	
2-Hexanone	ND	ug/kg	8.1	--	1	
Bromochloromethane	ND	ug/kg	3.2	--	1	
Tetrahydrofuran	ND	ug/kg	3.2	--	1	
2,2-Dichloropropane	ND	ug/kg	4.1	--	1	
1,2-Dibromoethane	ND	ug/kg	3.2	--	1	
1,3-Dichloropropane	ND	ug/kg	3.2	--	1	
1,1,1,2-Tetrachloroethane	ND	ug/kg	0.81	--	1	
Bromobenzene	ND	ug/kg	4.1	--	1	
n-Butylbenzene	ND	ug/kg	0.81	--	1	
sec-Butylbenzene	ND	ug/kg	0.81	--	1	
tert-Butylbenzene	ND	ug/kg	3.2	--	1	
o-Chlorotoluene	ND	ug/kg	3.2	--	1	
p-Chlorotoluene	ND	ug/kg	3.2	--	1	
1,2-Dibromo-3-chloropropane	ND	ug/kg	3.2	--	1	
Hexachlorobutadiene	ND	ug/kg	3.2	--	1	
Isopropylbenzene	ND	ug/kg	0.81	--	1	
p-Isopropyltoluene	ND	ug/kg	0.81	--	1	
Naphthalene	ND	ug/kg	3.2	--	1	
n-Propylbenzene	ND	ug/kg	0.81	--	1	
1,2,3-Trichlorobenzene	ND	ug/kg	3.2	--	1	
1,2,4-Trichlorobenzene	ND	ug/kg	3.2	--	1	
1,3,5-Trimethylbenzene	ND	ug/kg	3.2	--	1	
1,2,4-Trimethylbenzene	ND	ug/kg	3.2	--	1	



Project Name: EAST BOSTON

Lab Number: L1703861

Project Number: 43068

Report Date: 02/14/17

**SAMPLE RESULTS**

Lab ID: L1703861-06  
 Client ID: VES-102 (0-2)  
 Sample Location: MA

Date Collected: 02/07/17 13:15  
 Date Received: 02/07/17  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics by 8260/5035 - Westborough Lab						
Diethyl ether	ND	ug/kg	4.1	--	--	1
Diisopropyl Ether	ND	ug/kg	3.2	--	--	1
Ethyl-Tert-Butyl-Ether	ND	ug/kg	3.2	--	--	1
Tertiary-Amyl Methyl Ether	ND	ug/kg	3.2	--	--	1
1,4-Dioxane	ND	ug/kg	32	--	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	106		70-130
Toluene-d8	100		70-130
4-Bromofluorobenzene	105		70-130
Dibromofluoromethane	100		70-130

Project Name: EAST BOSTON

Lab Number: L1703861

Project Number: 43068

Report Date: 02/14/17

**SAMPLE RESULTS**

Lab ID: L1703861-07  
 Client ID: VES-102 (10-12)  
 Sample Location: MA  
 Matrix: Soil  
 Analytical Method: 97,8260C  
 Analytical Date: 02/12/17 14:53  
 Analyst: JC  
 Percent Solids: 37%

Date Collected: 02/07/17 13:20  
 Date Received: 02/07/17  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics by 8260/5035 - Westborough Lab</b>						
Methylene chloride	ND	ug/kg	24	--	--	1
1,1-Dichloroethane	ND	ug/kg	3.6	--	--	1
Chloroform	ND	ug/kg	3.6	--	--	1
Carbon tetrachloride	ND	ug/kg	2.4	--	--	1
1,2-Dichloropropane	ND	ug/kg	8.3	--	--	1
Dibromochloromethane	ND	ug/kg	2.4	--	--	1
1,1,2-Trichloroethane	ND	ug/kg	3.6	--	--	1
Tetrachloroethene	ND	ug/kg	2.4	--	--	1
Chlorobenzene	ND	ug/kg	2.4	--	--	1
Trichlorofluoromethane	ND	ug/kg	9.5	--	--	1
1,2-Dichloroethane	ND	ug/kg	2.4	--	--	1
1,1,1-Trichloroethane	ND	ug/kg	2.4	--	--	1
Bromodichloromethane	ND	ug/kg	2.4	--	--	1
trans-1,3-Dichloropropene	ND	ug/kg	2.4	--	--	1
cis-1,3-Dichloropropene	ND	ug/kg	2.4	--	--	1
1,3-Dichloropropene, Total	ND	ug/kg	2.4	--	--	1
1,1-Dichloropropene	ND	ug/kg	9.5	--	--	1
Bromoform	ND	ug/kg	9.5	--	--	1
1,1,2,2-Tetrachloroethane	ND	ug/kg	2.4	--	--	1
Benzene	ND	ug/kg	2.4	--	--	1
Toluene	8.1	ug/kg	3.6	--	--	1
Ethylbenzene	8.4	ug/kg	2.4	--	--	1
Chloromethane	ND	ug/kg	9.5	--	--	1
Bromomethane	ND	ug/kg	4.7	--	--	1
Vinyl chloride	ND	ug/kg	4.7	--	--	1
Chloroethane	ND	ug/kg	4.7	--	--	1
1,1-Dichloroethene	ND	ug/kg	2.4	--	--	1
trans-1,2-Dichloroethene	ND	ug/kg	3.6	--	--	1
Trichloroethene	ND	ug/kg	2.4	--	--	1
1,2-Dichlorobenzene	ND	ug/kg	9.5	--	--	1



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703861  
**Report Date:** 02/14/17

**SAMPLE RESULTS**

Lab ID:	L1703861-07	Date Collected:	02/07/17 13:20
Client ID:	VES-102 (10-12)	Date Received:	02/07/17
Sample Location:	MA	Field Prep:	Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics by 8260/5035 - Westborough Lab</b>						
1,3-Dichlorobenzene	ND	ug/kg	9.5	--	1	
1,4-Dichlorobenzene	ND	ug/kg	9.5	--	1	
Methyl tert butyl ether	ND	ug/kg	4.7	--	1	
p/m-Xylene	ND	ug/kg	4.7	--	1	
o-Xylene	ND	ug/kg	4.7	--	1	
Xylenes, Total	ND	ug/kg	4.7	--	1	
cis-1,2-Dichloroethene	ND	ug/kg	2.4	--	1	
1,2-Dichloroethene, Total	ND	ug/kg	2.4	--	1	
Dibromomethane	ND	ug/kg	9.5	--	1	
1,2,3-Trichloropropane	ND	ug/kg	9.5	--	1	
Styrene	ND	ug/kg	4.7	--	1	
Dichlorodifluoromethane	ND	ug/kg	24	--	1	
Acetone	91	ug/kg	85	--	1	
Carbon disulfide	16	ug/kg	9.5	--	1	
Methyl ethyl ketone	ND	ug/kg	24	--	1	
Methyl isobutyl ketone	ND	ug/kg	24	--	1	
2-Hexanone	ND	ug/kg	24	--	1	
Bromochloromethane	ND	ug/kg	9.5	--	1	
Tetrahydrofuran	ND	ug/kg	9.5	--	1	
2,2-Dichloropropane	ND	ug/kg	12	--	1	
1,2-Dibromoethane	ND	ug/kg	9.5	--	1	
1,3-Dichloropropane	ND	ug/kg	9.5	--	1	
1,1,1,2-Tetrachloroethane	ND	ug/kg	2.4	--	1	
Bromobenzene	ND	ug/kg	12	--	1	
n-Butylbenzene	ND	ug/kg	2.4	--	1	
sec-Butylbenzene	ND	ug/kg	2.4	--	1	
tert-Butylbenzene	ND	ug/kg	9.5	--	1	
o-Chlorotoluene	ND	ug/kg	9.5	--	1	
p-Chlorotoluene	ND	ug/kg	9.5	--	1	
1,2-Dibromo-3-chloropropane	ND	ug/kg	9.5	--	1	
Hexachlorobutadiene	ND	ug/kg	9.5	--	1	
Isopropylbenzene	ND	ug/kg	2.4	--	1	
p-Isopropyltoluene	ND	ug/kg	2.4	--	1	
Naphthalene	ND	ug/kg	9.5	--	1	
n-Propylbenzene	ND	ug/kg	2.4	--	1	
1,2,3-Trichlorobenzene	ND	ug/kg	9.5	--	1	
1,2,4-Trichlorobenzene	ND	ug/kg	9.5	--	1	
1,3,5-Trimethylbenzene	ND	ug/kg	9.5	--	1	
1,2,4-Trimethylbenzene	ND	ug/kg	9.5	--	1	



Project Name: EAST BOSTON

Lab Number: L1703861

Project Number: 43068

Report Date: 02/14/17

**SAMPLE RESULTS**

Lab ID: L1703861-07  
 Client ID: VES-102 (10-12)  
 Sample Location: MA

Date Collected: 02/07/17 13:20  
 Date Received: 02/07/17  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics by 8260/5035 - Westborough Lab						
Diethyl ether	ND	ug/kg	12	--	--	1
Diisopropyl Ether	ND	ug/kg	9.5	--	--	1
Ethyl-Tert-Butyl-Ether	ND	ug/kg	9.5	--	--	1
Tertiary-Amyl Methyl Ether	ND	ug/kg	9.5	--	--	1
1,4-Dioxane	ND	ug/kg	95	--	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	106		70-130
Toluene-d8	103		70-130
4-Bromofluorobenzene	115		70-130
Dibromofluoromethane	103		70-130

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703861  
**Report Date:** 02/14/17

### Method Blank Analysis Batch Quality Control

Analytical Method: 97,8260C  
Analytical Date: 02/12/17 10:38  
Analyst: BD

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics by 8260/5035 - Westborough Lab for sample(s):	01-07		Batch:	WG977259-5	
Methylene chloride	ND		ug/kg	10	--
1,1-Dichloroethane	ND		ug/kg	1.5	--
Chloroform	ND		ug/kg	1.5	--
Carbon tetrachloride	ND		ug/kg	1.0	--
1,2-Dichloropropane	ND		ug/kg	3.5	--
Dibromochloromethane	ND		ug/kg	1.0	--
1,1,2-Trichloroethane	ND		ug/kg	1.5	--
Tetrachloroethene	ND		ug/kg	1.0	--
Chlorobenzene	ND		ug/kg	1.0	--
Trichlorofluoromethane	ND		ug/kg	4.0	--
1,2-Dichloroethane	ND		ug/kg	1.0	--
1,1,1-Trichloroethane	ND		ug/kg	1.0	--
Bromodichloromethane	ND		ug/kg	1.0	--
trans-1,3-Dichloropropene	ND		ug/kg	1.0	--
cis-1,3-Dichloropropene	ND		ug/kg	1.0	--
1,3-Dichloropropene, Total	ND		ug/kg	1.0	--
1,1-Dichloropropene	ND		ug/kg	4.0	--
Bromoform	ND		ug/kg	4.0	--
1,1,2,2-Tetrachloroethane	ND		ug/kg	1.0	--
Benzene	ND		ug/kg	1.0	--
Toluene	ND		ug/kg	1.5	--
Ethylbenzene	ND		ug/kg	1.0	--
Chloromethane	ND		ug/kg	4.0	--
Bromomethane	ND		ug/kg	2.0	--
Vinyl chloride	ND		ug/kg	2.0	--
Chloroethane	ND		ug/kg	2.0	--
1,1-Dichloroethene	ND		ug/kg	1.0	--
trans-1,2-Dichloroethene	ND		ug/kg	1.5	--
Trichloroethene	ND		ug/kg	1.0	--



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703861  
**Report Date:** 02/14/17

### Method Blank Analysis Batch Quality Control

Analytical Method: 97,8260C  
Analytical Date: 02/12/17 10:38  
Analyst: BD

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics by 8260/5035 - Westborough Lab for sample(s):	01-07		Batch:	WG977259-5	
1,2-Dichlorobenzene	ND		ug/kg	4.0	--
1,3-Dichlorobenzene	ND		ug/kg	4.0	--
1,4-Dichlorobenzene	ND		ug/kg	4.0	--
Methyl tert butyl ether	ND		ug/kg	2.0	--
p/m-Xylene	ND		ug/kg	2.0	--
o-Xylene	ND		ug/kg	2.0	--
Xylenes, Total	ND		ug/kg	2.0	--
cis-1,2-Dichloroethene	ND		ug/kg	1.0	--
1,2-Dichloroethene, Total	ND		ug/kg	1.0	--
Dibromomethane	ND		ug/kg	4.0	--
1,4-Dichlorobutane	ND		ug/kg	10	--
1,2,3-Trichloropropane	ND		ug/kg	4.0	--
Styrene	ND		ug/kg	2.0	--
Dichlorodifluoromethane	ND		ug/kg	10	--
Acetone	ND		ug/kg	36	--
Carbon disulfide	ND		ug/kg	4.0	--
Methyl ethyl ketone	ND		ug/kg	10	--
Methyl isobutyl ketone	ND		ug/kg	10	--
2-Hexanone	ND		ug/kg	10	--
Ethyl methacrylate	ND		ug/kg	10	--
Acrylonitrile	ND		ug/kg	4.0	--
Bromochloromethane	ND		ug/kg	4.0	--
Tetrahydrofuran	ND		ug/kg	4.0	--
2,2-Dichloropropane	ND		ug/kg	5.0	--
1,2-Dibromoethane	ND		ug/kg	4.0	--
1,3-Dichloropropane	ND		ug/kg	4.0	--
1,1,1,2-Tetrachloroethane	ND		ug/kg	1.0	--
Bromobenzene	ND		ug/kg	5.0	--
n-Butylbenzene	ND		ug/kg	1.0	--



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703861  
**Report Date:** 02/14/17

### Method Blank Analysis Batch Quality Control

Analytical Method: 97,8260C  
Analytical Date: 02/12/17 10:38  
Analyst: BD

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics by 8260/5035 - Westborough Lab for sample(s):	01-07	Batch:	WG977259-5		
sec-Butylbenzene	ND	ug/kg	1.0	--	
tert-Butylbenzene	ND	ug/kg	4.0	--	
o-Chlorotoluene	ND	ug/kg	4.0	--	
p-Chlorotoluene	ND	ug/kg	4.0	--	
1,2-Dibromo-3-chloropropane	ND	ug/kg	4.0	--	
Hexachlorobutadiene	ND	ug/kg	4.0	--	
Isopropylbenzene	ND	ug/kg	1.0	--	
p-Isopropyltoluene	ND	ug/kg	1.0	--	
Naphthalene	ND	ug/kg	4.0	--	
n-Propylbenzene	ND	ug/kg	1.0	--	
1,2,3-Trichlorobenzene	ND	ug/kg	4.0	--	
1,2,4-Trichlorobenzene	ND	ug/kg	4.0	--	
1,3,5-Trimethylbenzene	ND	ug/kg	4.0	--	
1,2,4-Trimethylbenzene	ND	ug/kg	4.0	--	
trans-1,4-Dichloro-2-butene	ND	ug/kg	5.0	--	
Diethyl ether	ND	ug/kg	5.0	--	
Diisopropyl Ether	ND	ug/kg	4.0	--	
Ethyl-Tert-Butyl-Ether	ND	ug/kg	4.0	--	
Tertiary-Amyl Methyl Ether	ND	ug/kg	4.0	--	
1,4-Dioxane	ND	ug/kg	40	--	
2-Chloroethylvinyl ether	ND	ug/kg	20	--	
Halothane	ND	ug/kg	40	--	
Ethyl Acetate	ND	ug/kg	20	--	
Freon-113	ND	ug/kg	20	--	
Vinyl acetate	ND	ug/kg	10	--	

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703861  
**Report Date:** 02/14/17

**Method Blank Analysis**  
**Batch Quality Control**

Analytical Method: 97,8260C  
Analytical Date: 02/12/17 10:38  
Analyst: BD

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics by 8260/5035 - Westborough Lab for sample(s): 01-07 Batch: WG977259-5					

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	105		70-130
Toluene-d8	99		70-130
4-Bromofluorobenzene	102		70-130
Dibromofluoromethane	97		70-130

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703861  
**Report Date:** 02/14/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics by 8260/5035 - Westborough Lab Associated sample(s): 01-07 Batch: WG977259-3 WG977259-4								
Methylene chloride	102		94		70-130	8		20
1,1-Dichloroethane	102		93		70-130	9		20
Chloroform	101		91		70-130	10		20
Carbon tetrachloride	104		93		70-130	11		20
1,2-Dichloropropane	101		92		70-130	9		20
Dibromochloromethane	94		88		70-130	7		20
1,1,2-Trichloroethane	98		93		70-130	5		20
Tetrachloroethene	100		88		70-130	13		20
Chlorobenzene	97		88		70-130	10		20
Trichlorofluoromethane	103		96		70-130	7		20
1,2-Dichloroethane	100		93		70-130	7		20
1,1,1-Trichloroethane	103		94		70-130	9		20
Bromodichloromethane	97		90		70-130	7		20
trans-1,3-Dichloropropene	99		90		70-130	10		20
cis-1,3-Dichloropropene	99		92		70-130	7		20
1,1-Dichloropropene	104		95		70-130	9		20
Bromoform	93		87		70-130	7		20
1,1,2,2-Tetrachloroethane	97		93		70-130	4		20
Benzene	100		91		70-130	9		20
Toluene	98		88		70-130	11		20
Ethylbenzene	99		89		70-130	11		20

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703861  
**Report Date:** 02/14/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics by 8260/5035 - Westborough Lab Associated sample(s): 01-07 Batch: WG977259-3 WG977259-4								
Chloromethane	100		90		70-130	11		20
Bromomethane	102		90		70-130	13		20
Vinyl chloride	100		90		70-130	11		20
Chloroethane	109		98		70-130	11		20
1,1-Dichloroethene	102		92		70-130	10		20
trans-1,2-Dichloroethene	100		92		70-130	8		20
Trichloroethene	102		92		70-130	10		20
1,2-Dichlorobenzene	96		87		70-130	10		20
1,3-Dichlorobenzene	98		88		70-130	11		20
1,4-Dichlorobenzene	97		87		70-130	11		20
Methyl tert butyl ether	98		93		70-130	5		20
p/m-Xylene	100		89		70-130	12		20
o-Xylene	99		88		70-130	12		20
cis-1,2-Dichloroethene	99		90		70-130	10		20
Dibromomethane	98		90		70-130	9		20
1,4-Dichlorobutane	99		93		70-130	6		20
1,2,3-Trichloropropane	98		93		70-130	5		20
Styrene	98		88		70-130	11		20
Dichlorodifluoromethane	95		84		70-130	12		20
Acetone	91		84		70-130	8		20
Carbon disulfide	98		90		70-130	9		20

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703861  
**Report Date:** 02/14/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics by 8260/5035 - Westborough Lab Associated sample(s): 01-07 Batch: WG977259-3 WG977259-4								
Methyl ethyl ketone	88		86		70-130	2		20
Methyl isobutyl ketone	90		88		70-130	2		20
2-Hexanone	93		90		70-130	3		20
Ethyl methacrylate	87		82		70-130	6		20
Acrylonitrile	101		97		70-130	4		20
Bromochloromethane	95		88		70-130	8		20
Tetrahydrofuran	104		98		70-130	6		20
2,2-Dichloropropane	106		95		70-130	11		20
1,2-Dibromoethane	96		90		70-130	6		20
1,3-Dichloropropane	98		92		70-130	6		20
1,1,1,2-Tetrachloroethane	96		87		70-130	10		20
Bromobenzene	96		87		70-130	10		20
n-Butylbenzene	104		94		70-130	10		20
sec-Butylbenzene	103		91		70-130	12		20
tert-Butylbenzene	100		89		70-130	12		20
o-Chlorotoluene	101		91		70-130	10		20
p-Chlorotoluene	101		91		70-130	10		20
1,2-Dibromo-3-chloropropane	86		81		70-130	6		20
Hexachlorobutadiene	96		85		70-130	12		20
Isopropylbenzene	101		90		70-130	12		20
p-Isopropyltoluene	102		91		70-130	11		20

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703861  
**Report Date:** 02/14/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics by 8260/5035 - Westborough Lab Associated sample(s): 01-07 Batch: WG977259-3 WG977259-4								
Naphthalene	95		90		70-130	5		20
n-Propylbenzene	104		92		70-130	12		20
1,2,3-Trichlorobenzene	95		87		70-130	9		20
1,2,4-Trichlorobenzene	97		88		70-130	10		20
1,3,5-Trimethylbenzene	102		90		70-130	13		20
1,2,4-Trimethylbenzene	101		90		70-130	12		20
trans-1,4-Dichloro-2-butene	103		96		70-130	7		20
Diethyl ether	100		91		70-130	9		20
Diisopropyl Ether	102		94		70-130	8		20
Ethyl-Tert-Butyl-Ether	100		94		70-130	6		20
Tertiary-Amyl Methyl Ether	99		93		70-130	6		20
1,4-Dioxane	108		90		70-130	18		20
2-Chloroethylvinyl ether	101		94		70-130	7		20
Halothane	100		92		70-130	8		20
Ethyl Acetate	98		95		70-130	3		20
Freon-113	105		94		70-130	11		20
Vinyl acetate	99		95		70-130	4		20

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703861  
**Report Date:** 02/14/17

<b>Parameter</b>	<i>LCS</i> <i>%Recovery</i>	<i>Qual</i>	<i>LCSD</i> <i>%Recovery</i>	<i>Qual</i>	<i>%Recovery</i> <i>Limits</i>	<i>RPD</i>	<i>Qual</i>	<i>RPD</i> <i>Limits</i>
MCP Volatile Organics by 8260/5035 - Westborough Lab Associated sample(s): 01-07 Batch: WG977259-3 WG977259-4								
<b>Surrogate</b>	<i>LCS</i> <i>%Recovery</i>	<i>Qual</i>	<i>LCSD</i> <i>%Recovery</i>	<i>Qual</i>	<i>Acceptance</i> <i>Criteria</i>			
1,2-Dichloroethane-d4	101		103		70-130			
Toluene-d8	101		101		70-130			
4-Bromofluorobenzene	103		103		70-130			
Dibromofluoromethane	100		100		70-130			

# **SEMIVOLATILES**



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703861  
**Report Date:** 02/14/17

**SAMPLE RESULTS**

Lab ID: L1703861-01  
Client ID: VES-121 (0-2)  
Sample Location: MA  
Matrix: Soil  
Analytical Method: 97,8270D  
Analytical Date: 02/12/17 05:45  
Analyst: KV  
Percent Solids: 90%

Date Collected: 02/07/17 07:30  
Date Received: 02/07/17  
Field Prep: Not Specified  
Extraction Method: EPA 3546  
Extraction Date: 02/09/17 06:19

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Semivolatile Organics - Westborough Lab</b>						
Acenaphthene	ND	ug/kg	140	--	--	1
1,2,4-Trichlorobenzene	ND	ug/kg	180	--	--	1
Hexachlorobenzene	ND	ug/kg	110	--	--	1
Bis(2-chloroethyl)ether	ND	ug/kg	160	--	--	1
2-Chloronaphthalene	ND	ug/kg	180	--	--	1
1,2-Dichlorobenzene	ND	ug/kg	180	--	--	1
1,3-Dichlorobenzene	ND	ug/kg	180	--	--	1
1,4-Dichlorobenzene	ND	ug/kg	180	--	--	1
3,3'-Dichlorobenzidine	ND	ug/kg	180	--	--	1
2,4-Dinitrotoluene	ND	ug/kg	180	--	--	1
2,6-Dinitrotoluene	ND	ug/kg	180	--	--	1
Azobenzene	ND	ug/kg	180	--	--	1
Fluoranthene	260	ug/kg	110	--	--	1
4-Bromophenyl phenyl ether	ND	ug/kg	180	--	--	1
Bis(2-chloroisopropyl)ether	ND	ug/kg	220	--	--	1
Bis(2-chloroethoxy)methane	ND	ug/kg	200	--	--	1
Hexachlorobutadiene	ND	ug/kg	180	--	--	1
Hexachloroethane	ND	ug/kg	140	--	--	1
Isophorone	ND	ug/kg	160	--	--	1
Naphthalene	ND	ug/kg	180	--	--	1
Nitrobenzene	ND	ug/kg	160	--	--	1
Bis(2-ethylhexyl)phthalate	ND	ug/kg	180	--	--	1
Butyl benzyl phthalate	ND	ug/kg	180	--	--	1
Di-n-butylphthalate	ND	ug/kg	180	--	--	1
Di-n-octylphthalate	ND	ug/kg	180	--	--	1
Diethyl phthalate	ND	ug/kg	180	--	--	1
Dimethyl phthalate	ND	ug/kg	180	--	--	1
Benzo(a)anthracene	150	ug/kg	110	--	--	1
Benzo(a)pyrene	170	ug/kg	140	--	--	1
Benzo(b)fluoranthene	210	ug/kg	110	--	--	1



Project Name: EAST BOSTON

Lab Number: L1703861

Project Number: 43068

Report Date: 02/14/17

**SAMPLE RESULTS**

Lab ID:	L1703861-01	Date Collected:	02/07/17 07:30
Client ID:	VES-121 (0-2)	Date Received:	02/07/17
Sample Location:	MA	Field Prep:	Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Semivolatile Organics - Westborough Lab</b>						
Benzo(k)fluoranthene	ND	ug/kg	110	--	--	1
Chrysene	170	ug/kg	110	--	--	1
Acenaphthylene	ND	ug/kg	140	--	--	1
Anthracene	ND	ug/kg	110	--	--	1
Benzo(ghi)perylene	ND	ug/kg	140	--	--	1
Fluorene	ND	ug/kg	180	--	--	1
Phenanthrene	140	ug/kg	110	--	--	1
Dibenzo(a,h)anthracene	ND	ug/kg	110	--	--	1
Indeno(1,2,3-cd)pyrene	ND	ug/kg	140	--	--	1
Pyrene	280	ug/kg	110	--	--	1
Aniline	ND	ug/kg	220	--	--	1
4-Chloroaniline	ND	ug/kg	180	--	--	1
Dibenzofuran	ND	ug/kg	180	--	--	1
2-Methylnaphthalene	ND	ug/kg	220	--	--	1
Acetophenone	ND	ug/kg	180	--	--	1
2,4,6-Trichlorophenol	ND	ug/kg	110	--	--	1
2-Chlorophenol	ND	ug/kg	180	--	--	1
2,4-Dichlorophenol	ND	ug/kg	160	--	--	1
2,4-Dimethylphenol	ND	ug/kg	180	--	--	1
2-Nitrophenol	ND	ug/kg	390	--	--	1
4-Nitrophenol	ND	ug/kg	260	--	--	1
2,4-Dinitrophenol	ND	ug/kg	880	--	--	1
Pentachlorophenol	ND	ug/kg	360	--	--	1
Phenol	ND	ug/kg	180	--	--	1
2-Methylphenol	ND	ug/kg	180	--	--	1
3-Methylphenol/4-Methylphenol	ND	ug/kg	260	--	--	1
2,4,5-Trichlorophenol	ND	ug/kg	180	--	--	1
Pyridine	ND	ug/kg	200	--	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	70		30-130
Phenol-d6	73		30-130
Nitrobenzene-d5	79		30-130
2-Fluorobiphenyl	72		30-130
2,4,6-Tribromophenol	55		30-130
4-Terphenyl-d14	61		30-130



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703861  
**Report Date:** 02/14/17

**SAMPLE RESULTS**

Lab ID: L1703861-02  
Client ID: VES-121 (14-15)  
Sample Location: MA  
Matrix: Soil  
Analytical Method: 97,8270D  
Analytical Date: 02/12/17 06:11  
Analyst: KV  
Percent Solids: 68%

Date Collected: 02/07/17 09:00  
Date Received: 02/07/17  
Field Prep: Not Specified  
Extraction Method: EPA 3546  
Extraction Date: 02/09/17 06:19

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Semivolatile Organics - Westborough Lab</b>						
Acenaphthene	ND	ug/kg	190	--	--	1
1,2,4-Trichlorobenzene	ND	ug/kg	240	--	--	1
Hexachlorobenzene	ND	ug/kg	140	--	--	1
Bis(2-chloroethyl)ether	ND	ug/kg	210	--	--	1
2-Chloronaphthalene	ND	ug/kg	240	--	--	1
1,2-Dichlorobenzene	ND	ug/kg	240	--	--	1
1,3-Dichlorobenzene	ND	ug/kg	240	--	--	1
1,4-Dichlorobenzene	ND	ug/kg	240	--	--	1
3,3'-Dichlorobenzidine	ND	ug/kg	240	--	--	1
2,4-Dinitrotoluene	ND	ug/kg	240	--	--	1
2,6-Dinitrotoluene	ND	ug/kg	240	--	--	1
Azobenzene	ND	ug/kg	240	--	--	1
Fluoranthene	380	ug/kg	140	--	--	1
4-Bromophenyl phenyl ether	ND	ug/kg	240	--	--	1
Bis(2-chloroisopropyl)ether	ND	ug/kg	290	--	--	1
Bis(2-chloroethoxy)methane	ND	ug/kg	260	--	--	1
Hexachlorobutadiene	ND	ug/kg	240	--	--	1
Hexachloroethane	ND	ug/kg	190	--	--	1
Isophorone	ND	ug/kg	210	--	--	1
Naphthalene	ND	ug/kg	240	--	--	1
Nitrobenzene	ND	ug/kg	210	--	--	1
Bis(2-ethylhexyl)phthalate	ND	ug/kg	240	--	--	1
Butyl benzyl phthalate	ND	ug/kg	240	--	--	1
Di-n-butylphthalate	ND	ug/kg	240	--	--	1
Di-n-octylphthalate	ND	ug/kg	240	--	--	1
Diethyl phthalate	ND	ug/kg	240	--	--	1
Dimethyl phthalate	ND	ug/kg	240	--	--	1
Benzo(a)anthracene	160	ug/kg	140	--	--	1
Benzo(a)pyrene	ND	ug/kg	190	--	--	1
Benzo(b)fluoranthene	170	ug/kg	140	--	--	1



Project Name: EAST BOSTON

Lab Number: L1703861

Project Number: 43068

Report Date: 02/14/17

**SAMPLE RESULTS**

Lab ID:	L1703861-02	Date Collected:	02/07/17 09:00
Client ID:	VES-121 (14-15)	Date Received:	02/07/17
Sample Location:	MA	Field Prep:	Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Semivolatile Organics - Westborough Lab</b>						
Benzo(k)fluoranthene	ND	ug/kg	140	--	--	1
Chrysene	180	ug/kg	140	--	--	1
Acenaphthylene	ND	ug/kg	190	--	--	1
Anthracene	ND	ug/kg	140	--	--	1
Benzo(ghi)perylene	ND	ug/kg	190	--	--	1
Fluorene	ND	ug/kg	240	--	--	1
Phenanthrene	350	ug/kg	140	--	--	1
Dibenzo(a,h)anthracene	ND	ug/kg	140	--	--	1
Indeno(1,2,3-cd)pyrene	ND	ug/kg	190	--	--	1
Pyrene	350	ug/kg	140	--	--	1
Aniline	ND	ug/kg	290	--	--	1
4-Chloroaniline	ND	ug/kg	240	--	--	1
Dibenzofuran	ND	ug/kg	240	--	--	1
2-Methylnaphthalene	ND	ug/kg	290	--	--	1
Acetophenone	ND	ug/kg	240	--	--	1
2,4,6-Trichlorophenol	ND	ug/kg	140	--	--	1
2-Chlorophenol	ND	ug/kg	240	--	--	1
2,4-Dichlorophenol	ND	ug/kg	210	--	--	1
2,4-Dimethylphenol	ND	ug/kg	240	--	--	1
2-Nitrophenol	ND	ug/kg	520	--	--	1
4-Nitrophenol	ND	ug/kg	330	--	--	1
2,4-Dinitrophenol	ND	ug/kg	1100	--	--	1
Pentachlorophenol	ND	ug/kg	480	--	--	1
Phenol	ND	ug/kg	240	--	--	1
2-Methylphenol	ND	ug/kg	240	--	--	1
3-Methylphenol/4-Methylphenol	ND	ug/kg	340	--	--	1
2,4,5-Trichlorophenol	ND	ug/kg	240	--	--	1
Pyridine	ND	ug/kg	260	--	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	65		30-130
Phenol-d6	82		30-130
Nitrobenzene-d5	87		30-130
2-Fluorobiphenyl	90		30-130
2,4,6-Tribromophenol	48		30-130
4-Terphenyl-d14	85		30-130

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703861  
**Report Date:** 02/14/17

**SAMPLE RESULTS**

Lab ID: L1703861-03  
Client ID: VES-120 (1-2)  
Sample Location: MA  
Matrix: Soil  
Analytical Method: 97,8270D  
Analytical Date: 02/11/17 23:48  
Analyst: KV  
Percent Solids: 84%

Date Collected: 02/07/17 10:00  
Date Received: 02/07/17  
Field Prep: Not Specified  
Extraction Method: EPA 3546  
Extraction Date: 02/09/17 06:19

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Semivolatile Organics - Westborough Lab</b>						
Acenaphthene	ND	ug/kg	150	--	--	1
1,2,4-Trichlorobenzene	ND	ug/kg	190	--	--	1
Hexachlorobenzene	ND	ug/kg	120	--	--	1
Bis(2-chloroethyl)ether	ND	ug/kg	170	--	--	1
2-Chloronaphthalene	ND	ug/kg	190	--	--	1
1,2-Dichlorobenzene	ND	ug/kg	190	--	--	1
1,3-Dichlorobenzene	ND	ug/kg	190	--	--	1
1,4-Dichlorobenzene	ND	ug/kg	190	--	--	1
3,3'-Dichlorobenzidine	ND	ug/kg	190	--	--	1
2,4-Dinitrotoluene	ND	ug/kg	190	--	--	1
2,6-Dinitrotoluene	ND	ug/kg	190	--	--	1
Azobenzene	ND	ug/kg	190	--	--	1
Fluoranthene	ND	ug/kg	120	--	--	1
4-Bromophenyl phenyl ether	ND	ug/kg	190	--	--	1
Bis(2-chloroisopropyl)ether	ND	ug/kg	230	--	--	1
Bis(2-chloroethoxy)methane	ND	ug/kg	210	--	--	1
Hexachlorobutadiene	ND	ug/kg	190	--	--	1
Hexachloroethane	ND	ug/kg	150	--	--	1
Isophorone	ND	ug/kg	170	--	--	1
Naphthalene	ND	ug/kg	190	--	--	1
Nitrobenzene	ND	ug/kg	170	--	--	1
Bis(2-ethylhexyl)phthalate	ND	ug/kg	190	--	--	1
Butyl benzyl phthalate	ND	ug/kg	190	--	--	1
Di-n-butylphthalate	ND	ug/kg	190	--	--	1
Di-n-octylphthalate	ND	ug/kg	190	--	--	1
Diethyl phthalate	ND	ug/kg	190	--	--	1
Dimethyl phthalate	ND	ug/kg	190	--	--	1
Benzo(a)anthracene	ND	ug/kg	120	--	--	1
Benzo(a)pyrene	ND	ug/kg	150	--	--	1
Benzo(b)fluoranthene	ND	ug/kg	120	--	--	1



Project Name: EAST BOSTON

Lab Number: L1703861

Project Number: 43068

Report Date: 02/14/17

**SAMPLE RESULTS**

Lab ID: L1703861-03 Date Collected: 02/07/17 10:00  
 Client ID: VES-120 (1-2) Date Received: 02/07/17  
 Sample Location: MA Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Semivolatile Organics - Westborough Lab</b>						
Benzo(k)fluoranthene	ND	ug/kg	120	--	--	1
Chrysene	ND	ug/kg	120	--	--	1
Acenaphthylene	ND	ug/kg	150	--	--	1
Anthracene	ND	ug/kg	120	--	--	1
Benzo(ghi)perylene	ND	ug/kg	150	--	--	1
Fluorene	ND	ug/kg	190	--	--	1
Phenanthrene	ND	ug/kg	120	--	--	1
Dibenzo(a,h)anthracene	ND	ug/kg	120	--	--	1
Indeno(1,2,3-cd)pyrene	ND	ug/kg	150	--	--	1
Pyrene	ND	ug/kg	120	--	--	1
Aniline	ND	ug/kg	230	--	--	1
4-Chloroaniline	ND	ug/kg	190	--	--	1
Dibenzofuran	ND	ug/kg	190	--	--	1
2-Methylnaphthalene	ND	ug/kg	230	--	--	1
Acetophenone	ND	ug/kg	190	--	--	1
2,4,6-Trichlorophenol	ND	ug/kg	120	--	--	1
2-Chlorophenol	ND	ug/kg	190	--	--	1
2,4-Dichlorophenol	ND	ug/kg	170	--	--	1
2,4-Dimethylphenol	ND	ug/kg	190	--	--	1
2-Nitrophenol	ND	ug/kg	420	--	--	1
4-Nitrophenol	ND	ug/kg	270	--	--	1
2,4-Dinitrophenol	ND	ug/kg	930	--	--	1
Pentachlorophenol	ND	ug/kg	390	--	--	1
Phenol	ND	ug/kg	190	--	--	1
2-Methylphenol	ND	ug/kg	190	--	--	1
3-Methylphenol/4-Methylphenol	ND	ug/kg	280	--	--	1
2,4,5-Trichlorophenol	ND	ug/kg	190	--	--	1
Pyridine	ND	ug/kg	210	--	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	77		30-130
Phenol-d6	86		30-130
Nitrobenzene-d5	93		30-130
2-Fluorobiphenyl	89		30-130
2,4,6-Tribromophenol	64		30-130
4-Terphenyl-d14	87		30-130

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703861  
**Report Date:** 02/14/17

**SAMPLE RESULTS**

Lab ID: L1703861-04  
Client ID: VES-101 (5-6)  
Sample Location: MA  
Matrix: Soil  
Analytical Method: 97,8270D  
Analytical Date: 02/12/17 06:36  
Analyst: KV  
Percent Solids: 38%

Date Collected: 02/07/17 11:30  
Date Received: 02/07/17  
Field Prep: Not Specified  
Extraction Method: EPA 3546  
Extraction Date: 02/09/17 06:19

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Semivolatile Organics - Westborough Lab</b>						
Acenaphthene	ND	ug/kg	340	--	--	1
1,2,4-Trichlorobenzene	ND	ug/kg	430	--	--	1
Hexachlorobenzene	ND	ug/kg	260	--	--	1
Bis(2-chloroethyl)ether	ND	ug/kg	390	--	--	1
2-Chloronaphthalene	ND	ug/kg	430	--	--	1
1,2-Dichlorobenzene	ND	ug/kg	430	--	--	1
1,3-Dichlorobenzene	ND	ug/kg	430	--	--	1
1,4-Dichlorobenzene	ND	ug/kg	430	--	--	1
3,3'-Dichlorobenzidine	ND	ug/kg	430	--	--	1
2,4-Dinitrotoluene	ND	ug/kg	430	--	--	1
2,6-Dinitrotoluene	ND	ug/kg	430	--	--	1
Azobenzene	ND	ug/kg	430	--	--	1
Fluoranthene	600	ug/kg	260	--	--	1
4-Bromophenyl phenyl ether	ND	ug/kg	430	--	--	1
Bis(2-chloroisopropyl)ether	ND	ug/kg	520	--	--	1
Bis(2-chloroethoxy)methane	ND	ug/kg	470	--	--	1
Hexachlorobutadiene	ND	ug/kg	430	--	--	1
Hexachloroethane	ND	ug/kg	340	--	--	1
Isophorone	ND	ug/kg	390	--	--	1
Naphthalene	ND	ug/kg	430	--	--	1
Nitrobenzene	ND	ug/kg	390	--	--	1
Bis(2-ethylhexyl)phthalate	ND	ug/kg	430	--	--	1
Butyl benzyl phthalate	ND	ug/kg	430	--	--	1
Di-n-butylphthalate	ND	ug/kg	430	--	--	1
Di-n-octylphthalate	ND	ug/kg	430	--	--	1
Diethyl phthalate	ND	ug/kg	430	--	--	1
Dimethyl phthalate	ND	ug/kg	430	--	--	1
Benzo(a)anthracene	270	ug/kg	260	--	--	1
Benzo(a)pyrene	ND	ug/kg	340	--	--	1
Benzo(b)fluoranthene	390	ug/kg	260	--	--	1



Project Name: EAST BOSTON

Lab Number: L1703861

Project Number: 43068

Report Date: 02/14/17

**SAMPLE RESULTS**

Lab ID:	L1703861-04	Date Collected:	02/07/17 11:30		
Client ID:	VES-101 (5-6)	Date Received:	02/07/17		
Sample Location:	MA	Field Prep:	Not Specified		
Parameter	Result	Qualifier	Units	RL	MDL
<b>MCP Semivolatile Organics - Westborough Lab</b>					
Benzo(k)fluoranthene	ND	ug/kg	260	--	1
Chrysene	310	ug/kg	260	--	1
Acenaphthylene	ND	ug/kg	340	--	1
Anthracene	ND	ug/kg	260	--	1
Benzo(ghi)perylene	ND	ug/kg	340	--	1
Fluorene	ND	ug/kg	430	--	1
Phenanthrene	370	ug/kg	260	--	1
Dibenzo(a,h)anthracene	ND	ug/kg	260	--	1
Indeno(1,2,3-cd)pyrene	ND	ug/kg	340	--	1
Pyrene	570	ug/kg	260	--	1
Aniline	ND	ug/kg	520	--	1
4-Chloroaniline	ND	ug/kg	430	--	1
Dibenzofuran	ND	ug/kg	430	--	1
2-Methylnaphthalene	ND	ug/kg	520	--	1
Acetophenone	ND	ug/kg	430	--	1
2,4,6-Trichlorophenol	ND	ug/kg	260	--	1
2-Chlorophenol	ND	ug/kg	430	--	1
2,4-Dichlorophenol	ND	ug/kg	390	--	1
2,4-Dimethylphenol	ND	ug/kg	430	--	1
2-Nitrophenol	ND	ug/kg	930	--	1
4-Nitrophenol	ND	ug/kg	600	--	1
2,4-Dinitrophenol	ND	ug/kg	2100	--	1
Pentachlorophenol	ND	ug/kg	860	--	1
Phenol	ND	ug/kg	430	--	1
2-Methylphenol	ND	ug/kg	430	--	1
3-Methylphenol/4-Methylphenol	ND	ug/kg	620	--	1
2,4,5-Trichlorophenol	ND	ug/kg	430	--	1
Pyridine	ND	ug/kg	470	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	79		30-130
Phenol-d6	84		30-130
Nitrobenzene-d5	88		30-130
2-Fluorobiphenyl	78		30-130
2,4,6-Tribromophenol	74		30-130
4-Terphenyl-d14	71		30-130

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703861  
**Report Date:** 02/14/17

**SAMPLE RESULTS**

Lab ID: L1703861-05  
Client ID: VES-101 (10-12)  
Sample Location: MA  
Matrix: Soil  
Analytical Method: 97,8270D  
Analytical Date: 02/12/17 07:02  
Analyst: KV  
Percent Solids: 41%

Date Collected: 02/07/17 12:00  
Date Received: 02/07/17  
Field Prep: Not Specified  
Extraction Method: EPA 3546  
Extraction Date: 02/09/17 06:19

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Semivolatile Organics - Westborough Lab</b>						
Acenaphthene	ND	ug/kg	320	--	--	1
1,2,4-Trichlorobenzene	ND	ug/kg	400	--	--	1
Hexachlorobenzene	ND	ug/kg	240	--	--	1
Bis(2-chloroethyl)ether	ND	ug/kg	360	--	--	1
2-Chloronaphthalene	ND	ug/kg	400	--	--	1
1,2-Dichlorobenzene	ND	ug/kg	400	--	--	1
1,3-Dichlorobenzene	ND	ug/kg	400	--	--	1
1,4-Dichlorobenzene	ND	ug/kg	400	--	--	1
3,3'-Dichlorobenzidine	ND	ug/kg	400	--	--	1
2,4-Dinitrotoluene	ND	ug/kg	400	--	--	1
2,6-Dinitrotoluene	ND	ug/kg	400	--	--	1
Azobenzene	ND	ug/kg	400	--	--	1
Fluoranthene	ND	ug/kg	240	--	--	1
4-Bromophenyl phenyl ether	ND	ug/kg	400	--	--	1
Bis(2-chloroisopropyl)ether	ND	ug/kg	490	--	--	1
Bis(2-chloroethoxy)methane	ND	ug/kg	440	--	--	1
Hexachlorobutadiene	ND	ug/kg	400	--	--	1
Hexachloroethane	ND	ug/kg	320	--	--	1
Isophorone	ND	ug/kg	360	--	--	1
Naphthalene	ND	ug/kg	400	--	--	1
Nitrobenzene	ND	ug/kg	360	--	--	1
Bis(2-ethylhexyl)phthalate	ND	ug/kg	400	--	--	1
Butyl benzyl phthalate	ND	ug/kg	400	--	--	1
Di-n-butylphthalate	ND	ug/kg	400	--	--	1
Di-n-octylphthalate	ND	ug/kg	400	--	--	1
Diethyl phthalate	ND	ug/kg	400	--	--	1
Dimethyl phthalate	ND	ug/kg	400	--	--	1
Benzo(a)anthracene	ND	ug/kg	240	--	--	1
Benzo(a)pyrene	ND	ug/kg	320	--	--	1
Benzo(b)fluoranthene	ND	ug/kg	240	--	--	1



Project Name: EAST BOSTON

Lab Number: L1703861

Project Number: 43068

Report Date: 02/14/17

**SAMPLE RESULTS**

Lab ID: L1703861-05 Date Collected: 02/07/17 12:00  
 Client ID: VES-101 (10-12) Date Received: 02/07/17  
 Sample Location: MA Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Semivolatile Organics - Westborough Lab</b>						
Benzo(k)fluoranthene	ND	ug/kg	240	--	--	1
Chrysene	ND	ug/kg	240	--	--	1
Acenaphthylene	ND	ug/kg	320	--	--	1
Anthracene	ND	ug/kg	240	--	--	1
Benzo(ghi)perylene	ND	ug/kg	320	--	--	1
Fluorene	ND	ug/kg	400	--	--	1
Phenanthrene	ND	ug/kg	240	--	--	1
Dibenzo(a,h)anthracene	ND	ug/kg	240	--	--	1
Indeno(1,2,3-cd)pyrene	ND	ug/kg	320	--	--	1
Pyrene	ND	ug/kg	240	--	--	1
Aniline	ND	ug/kg	490	--	--	1
4-Chloroaniline	ND	ug/kg	400	--	--	1
Dibenzofuran	ND	ug/kg	400	--	--	1
2-Methylnaphthalene	ND	ug/kg	490	--	--	1
Acetophenone	ND	ug/kg	400	--	--	1
2,4,6-Trichlorophenol	ND	ug/kg	240	--	--	1
2-Chlorophenol	ND	ug/kg	400	--	--	1
2,4-Dichlorophenol	ND	ug/kg	360	--	--	1
2,4-Dimethylphenol	ND	ug/kg	400	--	--	1
2-Nitrophenol	ND	ug/kg	870	--	--	1
4-Nitrophenol	ND	ug/kg	570	--	--	1
2,4-Dinitrophenol	ND	ug/kg	1900	--	--	1
Pentachlorophenol	ND	ug/kg	810	--	--	1
Phenol	820	ug/kg	400	--	--	1
2-Methylphenol	ND	ug/kg	400	--	--	1
3-Methylphenol/4-Methylphenol	ND	ug/kg	580	--	--	1
2,4,5-Trichlorophenol	ND	ug/kg	400	--	--	1
Pyridine	ND	ug/kg	440	--	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	64		30-130
Phenol-d6	70		30-130
Nitrobenzene-d5	76		30-130
2-Fluorobiphenyl	78		30-130
2,4,6-Tribromophenol	69		30-130
4-Terphenyl-d14	69		30-130

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703861  
**Report Date:** 02/14/17

**SAMPLE RESULTS**

Lab ID: L1703861-06  
Client ID: VES-102 (0-2)  
Sample Location: MA  
Matrix: Soil  
Analytical Method: 97,8270D  
Analytical Date: 02/13/17 23:30  
Analyst: PS  
Percent Solids: 92%

Date Collected: 02/07/17 13:15  
Date Received: 02/07/17  
Field Prep: Not Specified  
Extraction Method: EPA 3546  
Extraction Date: 02/09/17 06:19

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Semivolatile Organics - Westborough Lab</b>						
Acenaphthene	ND	ug/kg	140	--	--	1
1,2,4-Trichlorobenzene	ND	ug/kg	180	--	--	1
Hexachlorobenzene	ND	ug/kg	110	--	--	1
Bis(2-chloroethyl)ether	ND	ug/kg	160	--	--	1
2-Chloronaphthalene	ND	ug/kg	180	--	--	1
1,2-Dichlorobenzene	ND	ug/kg	180	--	--	1
1,3-Dichlorobenzene	ND	ug/kg	180	--	--	1
1,4-Dichlorobenzene	ND	ug/kg	180	--	--	1
3,3'-Dichlorobenzidine	ND	ug/kg	180	--	--	1
2,4-Dinitrotoluene	ND	ug/kg	180	--	--	1
2,6-Dinitrotoluene	ND	ug/kg	180	--	--	1
Azobenzene	ND	ug/kg	180	--	--	1
Fluoranthene	ND	ug/kg	110	--	--	1
4-Bromophenyl phenyl ether	ND	ug/kg	180	--	--	1
Bis(2-chloroisopropyl)ether	ND	ug/kg	210	--	--	1
Bis(2-chloroethoxy)methane	ND	ug/kg	190	--	--	1
Hexachlorobutadiene	ND	ug/kg	180	--	--	1
Hexachloroethane	ND	ug/kg	140	--	--	1
Isophorone	ND	ug/kg	160	--	--	1
Naphthalene	ND	ug/kg	180	--	--	1
Nitrobenzene	ND	ug/kg	160	--	--	1
Bis(2-ethylhexyl)phthalate	ND	ug/kg	180	--	--	1
Butyl benzyl phthalate	ND	ug/kg	180	--	--	1
Di-n-butylphthalate	ND	ug/kg	180	--	--	1
Di-n-octylphthalate	ND	ug/kg	180	--	--	1
Diethyl phthalate	ND	ug/kg	180	--	--	1
Dimethyl phthalate	ND	ug/kg	180	--	--	1
Benzo(a)anthracene	ND	ug/kg	110	--	--	1
Benzo(a)pyrene	ND	ug/kg	140	--	--	1
Benzo(b)fluoranthene	ND	ug/kg	110	--	--	1



Project Name: EAST BOSTON

Lab Number: L1703861

Project Number: 43068

Report Date: 02/14/17

**SAMPLE RESULTS**

Lab ID:	L1703861-06	Date Collected:	02/07/17 13:15
Client ID:	VES-102 (0-2)	Date Received:	02/07/17
Sample Location:	MA	Field Prep:	Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Semivolatile Organics - Westborough Lab</b>						
Benzo(k)fluoranthene	ND	ug/kg	110	--	--	1
Chrysene	ND	ug/kg	110	--	--	1
Acenaphthylene	ND	ug/kg	140	--	--	1
Anthracene	ND	ug/kg	110	--	--	1
Benzo(ghi)perylene	ND	ug/kg	140	--	--	1
Fluorene	ND	ug/kg	180	--	--	1
Phenanthrene	ND	ug/kg	110	--	--	1
Dibenzo(a,h)anthracene	ND	ug/kg	110	--	--	1
Indeno(1,2,3-cd)pyrene	ND	ug/kg	140	--	--	1
Pyrene	ND	ug/kg	110	--	--	1
Aniline	ND	ug/kg	210	--	--	1
4-Chloroaniline	ND	ug/kg	180	--	--	1
Dibenzofuran	ND	ug/kg	180	--	--	1
2-Methylnaphthalene	ND	ug/kg	210	--	--	1
Acetophenone	ND	ug/kg	180	--	--	1
2,4,6-Trichlorophenol	ND	ug/kg	110	--	--	1
2-Chlorophenol	ND	ug/kg	180	--	--	1
2,4-Dichlorophenol	ND	ug/kg	160	--	--	1
2,4-Dimethylphenol	ND	ug/kg	180	--	--	1
2-Nitrophenol	ND	ug/kg	380	--	--	1
4-Nitrophenol	ND	ug/kg	250	--	--	1
2,4-Dinitrophenol	ND	ug/kg	860	--	--	1
Pentachlorophenol	ND	ug/kg	360	--	--	1
Phenol	ND	ug/kg	180	--	--	1
2-Methylphenol	ND	ug/kg	180	--	--	1
3-Methylphenol/4-Methylphenol	ND	ug/kg	260	--	--	1
2,4,5-Trichlorophenol	ND	ug/kg	180	--	--	1
Pyridine	ND	ug/kg	190	--	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	58		30-130
Phenol-d6	72		30-130
Nitrobenzene-d5	80		30-130
2-Fluorobiphenyl	68		30-130
2,4,6-Tribromophenol	38		30-130
4-Terphenyl-d14	65		30-130

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703861  
**Report Date:** 02/14/17

**SAMPLE RESULTS**

Lab ID: L1703861-07  
Client ID: VES-102 (10-12)  
Sample Location: MA  
Matrix: Soil  
Analytical Method: 97,8270D  
Analytical Date: 02/13/17 23:56  
Analyst: PS  
Percent Solids: 37%

Date Collected: 02/07/17 13:20  
Date Received: 02/07/17  
Field Prep: Not Specified  
Extraction Method: EPA 3546  
Extraction Date: 02/09/17 06:19

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Semivolatile Organics - Westborough Lab</b>						
Acenaphthene	ND	ug/kg	360	--	--	1
1,2,4-Trichlorobenzene	ND	ug/kg	450	--	--	1
Hexachlorobenzene	ND	ug/kg	270	--	--	1
Bis(2-chloroethyl)ether	ND	ug/kg	400	--	--	1
2-Chloronaphthalene	ND	ug/kg	450	--	--	1
1,2-Dichlorobenzene	ND	ug/kg	450	--	--	1
1,3-Dichlorobenzene	ND	ug/kg	450	--	--	1
1,4-Dichlorobenzene	ND	ug/kg	450	--	--	1
3,3'-Dichlorobenzidine	ND	ug/kg	450	--	--	1
2,4-Dinitrotoluene	ND	ug/kg	450	--	--	1
2,6-Dinitrotoluene	ND	ug/kg	450	--	--	1
Azobenzene	ND	ug/kg	450	--	--	1
Fluoranthene	ND	ug/kg	270	--	--	1
4-Bromophenyl phenyl ether	ND	ug/kg	450	--	--	1
Bis(2-chloroisopropyl)ether	ND	ug/kg	540	--	--	1
Bis(2-chloroethoxy)methane	ND	ug/kg	480	--	--	1
Hexachlorobutadiene	ND	ug/kg	450	--	--	1
Hexachloroethane	ND	ug/kg	360	--	--	1
Isophorone	ND	ug/kg	400	--	--	1
Naphthalene	ND	ug/kg	450	--	--	1
Nitrobenzene	ND	ug/kg	400	--	--	1
Bis(2-ethylhexyl)phthalate	ND	ug/kg	450	--	--	1
Butyl benzyl phthalate	ND	ug/kg	450	--	--	1
Di-n-butylphthalate	ND	ug/kg	450	--	--	1
Di-n-octylphthalate	ND	ug/kg	450	--	--	1
Diethyl phthalate	ND	ug/kg	450	--	--	1
Dimethyl phthalate	ND	ug/kg	450	--	--	1
Benzo(a)anthracene	ND	ug/kg	270	--	--	1
Benzo(a)pyrene	ND	ug/kg	360	--	--	1
Benzo(b)fluoranthene	ND	ug/kg	270	--	--	1



Project Name: EAST BOSTON

Lab Number: L1703861

Project Number: 43068

Report Date: 02/14/17

**SAMPLE RESULTS**

Lab ID:	L1703861-07	Date Collected:	02/07/17 13:20
Client ID:	VES-102 (10-12)	Date Received:	02/07/17
Sample Location:	MA	Field Prep:	Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Semivolatile Organics - Westborough Lab</b>						
Benzo(k)fluoranthene	ND	ug/kg	270	--	--	1
Chrysene	ND	ug/kg	270	--	--	1
Acenaphthylene	ND	ug/kg	360	--	--	1
Anthracene	ND	ug/kg	270	--	--	1
Benzo(ghi)perylene	ND	ug/kg	360	--	--	1
Fluorene	ND	ug/kg	450	--	--	1
Phenanthrene	ND	ug/kg	270	--	--	1
Dibenzo(a,h)anthracene	ND	ug/kg	270	--	--	1
Indeno(1,2,3-cd)pyrene	ND	ug/kg	360	--	--	1
Pyrene	280	ug/kg	270	--	--	1
Aniline	ND	ug/kg	540	--	--	1
4-Chloroaniline	ND	ug/kg	450	--	--	1
Dibenzofuran	ND	ug/kg	450	--	--	1
2-Methylnaphthalene	ND	ug/kg	540	--	--	1
Acetophenone	ND	ug/kg	450	--	--	1
2,4,6-Trichlorophenol	ND	ug/kg	270	--	--	1
2-Chlorophenol	ND	ug/kg	450	--	--	1
2,4-Dichlorophenol	ND	ug/kg	400	--	--	1
2,4-Dimethylphenol	ND	ug/kg	450	--	--	1
2-Nitrophenol	ND	ug/kg	960	--	--	1
4-Nitrophenol	ND	ug/kg	620	--	--	1
2,4-Dinitrophenol	ND	ug/kg	2100	--	--	1
Pentachlorophenol	ND	ug/kg	890	--	--	1
Phenol	ND	ug/kg	450	--	--	1
2-Methylphenol	ND	ug/kg	450	--	--	1
3-Methylphenol/4-Methylphenol	ND	ug/kg	640	--	--	1
2,4,5-Trichlorophenol	ND	ug/kg	450	--	--	1
Pyridine	ND	ug/kg	480	--	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	71		30-130
Phenol-d6	73		30-130
Nitrobenzene-d5	79		30-130
2-Fluorobiphenyl	69		30-130
2,4,6-Tribromophenol	64		30-130
4-Terphenyl-d14	63		30-130

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703861  
**Report Date:** 02/14/17

### Method Blank Analysis Batch Quality Control

Analytical Method: 97,8270D  
Analytical Date: 02/09/17 01:19  
Analyst: RC

Extraction Method: EPA 3546  
Extraction Date: 02/08/17 13:30

Parameter	Result	Qualifier	Units	RL	MDL
MCP Semivolatile Organics - Westborough Lab for sample(s): 01-07 Batch: WG976370-1					
Acenaphthene	ND		ug/kg	130	--
1,2,4-Trichlorobenzene	ND		ug/kg	160	--
Hexachlorobenzene	ND		ug/kg	98	--
Bis(2-chloroethyl)ether	ND		ug/kg	150	--
2-Chloronaphthalene	ND		ug/kg	160	--
1,2-Dichlorobenzene	ND		ug/kg	160	--
1,3-Dichlorobenzene	ND		ug/kg	160	--
1,4-Dichlorobenzene	ND		ug/kg	160	--
3,3'-Dichlorobenzidine	ND		ug/kg	160	--
2,4-Dinitrotoluene	ND		ug/kg	160	--
2,6-Dinitrotoluene	ND		ug/kg	160	--
Azobenzene	ND		ug/kg	160	--
Fluoranthene	ND		ug/kg	98	--
4-Bromophenyl phenyl ether	ND		ug/kg	160	--
Bis(2-chloroisopropyl)ether	ND		ug/kg	200	--
Bis(2-chloroethoxy)methane	ND		ug/kg	180	--
Hexachlorobutadiene	ND		ug/kg	160	--
Hexachloroethane	ND		ug/kg	130	--
Isophorone	ND		ug/kg	150	--
Naphthalene	ND		ug/kg	160	--
Nitrobenzene	ND		ug/kg	150	--
Bis(2-ethylhexyl)phthalate	ND		ug/kg	160	--
Butyl benzyl phthalate	ND		ug/kg	160	--
Di-n-butylphthalate	ND		ug/kg	160	--
Di-n-octylphthalate	ND		ug/kg	160	--
Diethyl phthalate	ND		ug/kg	160	--
Dimethyl phthalate	ND		ug/kg	160	--
Benzo(a)anthracene	ND		ug/kg	98	--
Benzo(a)pyrene	ND		ug/kg	130	--



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703861  
**Report Date:** 02/14/17

### Method Blank Analysis Batch Quality Control

Analytical Method: 97,8270D  
Analytical Date: 02/09/17 01:19  
Analyst: RC

Extraction Method: EPA 3546  
Extraction Date: 02/08/17 13:30

Parameter	Result	Qualifier	Units	RL	MDL
MCP Semivolatile Organics - Westborough Lab for sample(s): 01-07 Batch: WG976370-1					
Benzo(b)fluoranthene	ND		ug/kg	98	--
Benzo(k)fluoranthene	ND		ug/kg	98	--
Chrysene	ND		ug/kg	98	--
Acenaphthylene	ND		ug/kg	130	--
Anthracene	ND		ug/kg	98	--
Benzo(ghi)perylene	ND		ug/kg	130	--
Fluorene	ND		ug/kg	160	--
Phenanthrene	ND		ug/kg	98	--
Dibenzo(a,h)anthracene	ND		ug/kg	98	--
Indeno(1,2,3-cd)pyrene	ND		ug/kg	130	--
Pyrene	ND		ug/kg	98	--
Aniline	ND		ug/kg	200	--
4-Chloroaniline	ND		ug/kg	160	--
Dibenzofuran	ND		ug/kg	160	--
2-Methylnaphthalene	ND		ug/kg	200	--
Acetophenone	ND		ug/kg	160	--
2,4,6-Trichlorophenol	ND		ug/kg	98	--
2-Chlorophenol	ND		ug/kg	160	--
2,4-Dichlorophenol	ND		ug/kg	150	--
2,4-Dimethylphenol	ND		ug/kg	160	--
2-Nitrophenol	ND		ug/kg	350	--
4-Nitrophenol	ND		ug/kg	230	--
2,4-Dinitrophenol	ND		ug/kg	780	--
Pentachlorophenol	ND		ug/kg	330	--
Phenol	ND		ug/kg	160	--
2-Methylphenol	ND		ug/kg	160	--
3-Methylphenol/4-Methylphenol	ND		ug/kg	240	--
2,4,5-Trichlorophenol	ND		ug/kg	160	--
Pyridine	ND		ug/kg	180	--



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703861  
**Report Date:** 02/14/17

### **Method Blank Analysis**

#### **Batch Quality Control**

Analytical Method: 97,8270D  
Analytical Date: 02/09/17 01:19  
Analyst: RC

Extraction Method: EPA 3546  
Extraction Date: 02/08/17 13:30

Parameter	Result	Qualifier	Units	RL	MDL
MCP Semivolatile Organics - Westborough Lab for sample(s): 01-07 Batch: WG976370-1					

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	83		30-130
Phenol-d6	86		30-130
Nitrobenzene-d5	83		30-130
2-Fluorobiphenyl	83		30-130
2,4,6-Tribromophenol	89		30-130
4-Terphenyl-d14	91		30-130

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703861  
**Report Date:** 02/14/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Semivolatile Organics - Westborough Lab Associated sample(s): 01-07 Batch: WG976370-2 WG976370-3								
Acenaphthene	78		74		40-140	5		30
1,2,4-Trichlorobenzene	80		79		40-140	1		30
Hexachlorobenzene	83		76		40-140	9		30
Bis(2-chloroethyl)ether	81		79		40-140	3		30
2-Chloronaphthalene	82		77		40-140	6		30
1,2-Dichlorobenzene	77		77		40-140	0		30
1,3-Dichlorobenzene	73		74		40-140	1		30
1,4-Dichlorobenzene	76		76		40-140	0		30
3,3'-Dichlorobenzidine	66		59		40-140	11		30
2,4-Dinitrotoluene	85		78		40-140	9		30
2,6-Dinitrotoluene	89		84		40-140	6		30
Azobenzene	82		77		40-140	6		30
Fluoranthene	81		75		40-140	8		30
4-Bromophenyl phenyl ether	82		75		40-140	9		30
Bis(2-chloroisopropyl)ether	89		85		40-140	5		30
Bis(2-chloroethoxy)methane	89		85		40-140	5		30
Hexachlorobutadiene	76		73		40-140	4		30
Hexachloroethane	76		76		40-140	0		30
Isophorone	93		85		40-140	9		30
Naphthalene	78		77		40-140	1		30
Nitrobenzene	85		82		40-140	4		30

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703861  
**Report Date:** 02/14/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Semivolatile Organics - Westborough Lab Associated sample(s): 01-07 Batch: WG976370-2 WG976370-3								
Bis(2-ethylhexyl)phthalate	86		79		40-140	8		30
Butyl benzyl phthalate	88		81		40-140	8		30
Di-n-butylphthalate	85		79		40-140	7		30
Di-n-octylphthalate	86		80		40-140	7		30
Diethyl phthalate	81		75		40-140	8		30
Dimethyl phthalate	87		80		40-140	8		30
Benzo(a)anthracene	79		72		40-140	9		30
Benzo(a)pyrene	85		79		40-140	7		30
Benzo(b)fluoranthene	83		78		40-140	6		30
Benzo(k)fluoranthene	80		73		40-140	9		30
Chrysene	80		74		40-140	8		30
Acenaphthylene	85		80		40-140	6		30
Anthracene	82		77		40-140	6		30
Benzo(ghi)perylene	79		75		40-140	5		30
Fluorene	78		75		40-140	4		30
Phenanthrene	78		74		40-140	5		30
Dibenz(a,h)anthracene	79		74		40-140	7		30
Indeno(1,2,3-cd)pyrene	80		76		40-140	5		30
Pyrene	82		76		40-140	8		30
Aniline	62		54		40-140	14		30
4-Chloroaniline	67		60		40-140	11		30

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703861  
**Report Date:** 02/14/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Semivolatile Organics - Westborough Lab Associated sample(s): 01-07 Batch: WG976370-2 WG976370-3								
Dibenzofuran	77		73		40-140	5		30
2-Methylnaphthalene	79		77		40-140	3		30
Acetophenone	93		88		40-140	6		30
2,4,6-Trichlorophenol	88		82		30-130	7		30
2-Chlorophenol	86		83		30-130	4		30
2,4-Dichlorophenol	93		86		30-130	8		30
2,4-Dimethylphenol	96		87		30-130	10		30
2-Nitrophenol	89		84		30-130	6		30
4-Nitrophenol	88		80		30-130	10		30
2,4-Dinitrophenol	60		52		30-130	14		30
Pentachlorophenol	64		58		30-130	10		30
Phenol	82		76		30-130	8		30
2-Methylphenol	93		87		30-130	7		30
3-Methylphenol/4-Methylphenol	93		87		30-130	7		30
2,4,5-Trichlorophenol	92		85		30-130	8		30
Pyridine	57		64		30-130	12		30

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703861  
**Report Date:** 02/14/17

<b>Parameter</b>	<i>LCS</i> <i>%Recovery</i>	<i>Qual</i>	<i>LCSD</i> <i>%Recovery</i>	<i>Qual</i>	<i>%Recovery</i> <i>Limits</i>	<i>RPD</i>	<i>Qual</i>	<i>RPD</i> <i>Limits</i>
MCP Semivolatile Organics - Westborough Lab Associated sample(s): 01-07 Batch: WG976370-2 WG976370-3								
<b>Surrogate</b>	<i>LCS</i> <i>%Recovery</i>	<i>Qual</i>	<i>LCSD</i> <i>%Recovery</i>	<i>Qual</i>	<i>Acceptance</i> <i>Criteria</i>			
2-Fluorophenol	85		82		30-130			
Phenol-d6	90		84		30-130			
Nitrobenzene-d5	85		81		30-130			
2-Fluorobiphenyl	83		78		30-130			
2,4,6-Tribromophenol	87		79		30-130			
4-Terphenyl-d14	82		75		30-130			

# PETROLEUM HYDROCARBONS



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703861  
**Report Date:** 02/14/17

### SAMPLE RESULTS

Lab ID:	L1703861-01	Date Collected:	02/07/17 07:30
Client ID:	VES-121 (0-2)	Date Received:	02/07/17
Sample Location:	MA	Field Prep:	Not Specified
Matrix:	Soil		
Analytical Method:	100,VPH-04-1.1		
Analytical Date:	02/11/17 23:31		
Analyst:	KD		
Percent Solids:	90%		

### Quality Control Information

Condition of sample received:	Satisfactory
Sample Temperature upon receipt:	Received on Ice
Were samples received in methanol?	Yes (Covering the Soil)
Methanol ratio:	3.1:1

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>Volatile Petroleum Hydrocarbons - Westborough Lab</b>						
C5-C8 Aliphatics	ND		mg/kg	9.37	--	1
C9-C12 Aliphatics	ND		mg/kg	9.37	--	1
C9-C10 Aromatics	ND		mg/kg	9.37	--	1
C5-C8 Aliphatics, Adjusted	ND		mg/kg	9.37	--	1
C9-C12 Aliphatics, Adjusted	ND		mg/kg	9.37	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2,5-Dibromotoluene-PID	108		70-130
2,5-Dibromotoluene-FID	109		70-130



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703861  
**Report Date:** 02/14/17

### SAMPLE RESULTS

Lab ID:	L1703861-01	Date Collected:	02/07/17 07:30
Client ID:	VES-121 (0-2)	Date Received:	02/07/17
Sample Location:	MA	Field Prep:	Not Specified
Matrix:	Soil	Extraction Method:	EPA 3546
Analytical Method:	98,EPH-04-1.1	Extraction Date:	02/09/17 05:15
Analytical Date:	02/11/17 00:00	Cleanup Method1:	EPH-04-1
Analyst:	EK	Cleanup Date1:	02/10/17
Percent Solids:	90%		

### Quality Control Information

Condition of sample received:	Satisfactory
Sample Temperature upon receipt:	Received on Ice
Sample Extraction method:	Extracted Per the Method

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>Extractable Petroleum Hydrocarbons - Westborough Lab</b>						
C9-C18 Aliphatics	9.98		mg/kg	7.14	--	1
C19-C36 Aliphatics	78.0		mg/kg	7.14	--	1
C11-C22 Aromatics	36.0		mg/kg	7.14	--	1
C11-C22 Aromatics, Adjusted	35.6		mg/kg	7.14	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Chloro-Octadecane	57		40-140
o-Terphenyl	74		40-140
2-Fluorobiphenyl	78		40-140
2-Bromonaphthalene	80		40-140

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703861  
**Report Date:** 02/14/17

### SAMPLE RESULTS

Lab ID:	L1703861-02	Date Collected:	02/07/17 09:00
Client ID:	VES-121 (14-15)	Date Received:	02/07/17
Sample Location:	MA	Field Prep:	Not Specified
Matrix:	Soil		
Analytical Method:	100,VPH-04-1.1		
Analytical Date:	02/12/17 00:11		
Analyst:	KD		
Percent Solids:	68%		

### Quality Control Information

Condition of sample received:	Satisfactory
Sample Temperature upon receipt:	Received on Ice
Were samples received in methanol?	Yes (Covering the Soil)
Methanol ratio:	1.7:1

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>Volatile Petroleum Hydrocarbons - Westborough Lab</b>						
C5-C8 Aliphatics	ND		mg/kg	7.72	--	1
C9-C12 Aliphatics	ND		mg/kg	7.72	--	1
C9-C10 Aromatics	ND		mg/kg	7.72	--	1
C5-C8 Aliphatics, Adjusted	ND		mg/kg	7.72	--	1
C9-C12 Aliphatics, Adjusted	ND		mg/kg	7.72	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2,5-Dibromotoluene-PID	116		70-130
2,5-Dibromotoluene-FID	116		70-130

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703861  
**Report Date:** 02/14/17

### SAMPLE RESULTS

Lab ID:	L1703861-02	Date Collected:	02/07/17 09:00
Client ID:	VES-121 (14-15)	Date Received:	02/07/17
Sample Location:	MA	Field Prep:	Not Specified
Matrix:	Soil	Extraction Method:	EPA 3546
Analytical Method:	98,EPH-04-1.1	Extraction Date:	02/09/17 05:15
Analytical Date:	02/10/17 23:29	Cleanup Method1:	EPH-04-1
Analyst:	EK	Cleanup Date1:	02/10/17
Percent Solids:	68%		

### Quality Control Information

Condition of sample received:	Satisfactory
Sample Temperature upon receipt:	Received on Ice
Sample Extraction method:	Extracted Per the Method

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>Extractable Petroleum Hydrocarbons - Westborough Lab</b>						
C9-C18 Aliphatics	11.7		mg/kg	9.71	--	1
C19-C36 Aliphatics	85.5		mg/kg	9.71	--	1
C11-C22 Aromatics	101		mg/kg	9.71	--	1
C11-C22 Aromatics, Adjusted	79.8		mg/kg	9.71	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Chloro-Octadecane	108		40-140
o-Terphenyl	131		40-140
2-Fluorobiphenyl	89		40-140
2-Bromonaphthalene	89		40-140

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703861  
**Report Date:** 02/14/17

### SAMPLE RESULTS

Lab ID:	L1703861-03	Date Collected:	02/07/17 10:00
Client ID:	VES-120 (1-2)	Date Received:	02/07/17
Sample Location:	MA	Field Prep:	Not Specified
Matrix:	Soil		
Analytical Method:	100,VPH-04-1.1		
Analytical Date:	02/12/17 00:50		
Analyst:	KD		
Percent Solids:	84%		

### Quality Control Information

Condition of sample received:	Satisfactory
Sample Temperature upon receipt:	Received on Ice
Were samples received in methanol?	Yes (Covering the Soil)
Methanol ratio:	2.2:1

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>Volatile Petroleum Hydrocarbons - Westborough Lab</b>						
C5-C8 Aliphatics	ND		mg/kg	7.48	--	1
C9-C12 Aliphatics	ND		mg/kg	7.48	--	1
C9-C10 Aromatics	ND		mg/kg	7.48	--	1
C5-C8 Aliphatics, Adjusted	ND		mg/kg	7.48	--	1
C9-C12 Aliphatics, Adjusted	ND		mg/kg	7.48	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2,5-Dibromotoluene-PID	103		70-130
2,5-Dibromotoluene-FID	104		70-130

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703861  
**Report Date:** 02/14/17

### SAMPLE RESULTS

Lab ID:	L1703861-03	Date Collected:	02/07/17 10:00
Client ID:	VES-120 (1-2)	Date Received:	02/07/17
Sample Location:	MA	Field Prep:	Not Specified
Matrix:	Soil	Extraction Method:	EPA 3546
Analytical Method:	98,EPH-04-1.1	Extraction Date:	02/09/17 05:15
Analytical Date:	02/10/17 22:58	Cleanup Method1:	EPH-04-1
Analyst:	EK	Cleanup Date1:	02/10/17
Percent Solids:	84%		

### Quality Control Information

Condition of sample received:	Satisfactory
Sample Temperature upon receipt:	Received on Ice
Sample Extraction method:	Extracted Per the Method

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>Extractable Petroleum Hydrocarbons - Westborough Lab</b>						
C9-C18 Aliphatics	ND		mg/kg	7.66	--	1
C19-C36 Aliphatics	ND		mg/kg	7.66	--	1
C11-C22 Aromatics	ND		mg/kg	7.66	--	1
C11-C22 Aromatics, Adjusted	ND		mg/kg	7.66	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Chloro-Octadecane	69		40-140
o-Terphenyl	75		40-140
2-Fluorobiphenyl	92		40-140
2-Bromonaphthalene	92		40-140

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703861  
**Report Date:** 02/14/17

### SAMPLE RESULTS

Lab ID:	L1703861-04	Date Collected:	02/07/17 11:30
Client ID:	VES-101 (5-6)	Date Received:	02/07/17
Sample Location:	MA	Field Prep:	Not Specified
Matrix:	Soil		
Analytical Method:	100,VPH-04-1.1		
Analytical Date:	02/12/17 01:30		
Analyst:	KD		
Percent Solids:	38%		

### Quality Control Information

Condition of sample received:	Satisfactory
Sample Temperature upon receipt:	Received on Ice
Were samples received in methanol?	Yes (Covering the Soil)
Methanol ratio:	3.2:1

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>Volatile Petroleum Hydrocarbons - Westborough Lab</b>						
C5-C8 Aliphatics	ND		mg/kg	26.2	--	1
C9-C12 Aliphatics	ND		mg/kg	26.2	--	1
C9-C10 Aromatics	ND		mg/kg	26.2	--	1
C5-C8 Aliphatics, Adjusted	ND		mg/kg	26.2	--	1
C9-C12 Aliphatics, Adjusted	ND		mg/kg	26.2	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2,5-Dibromotoluene-PID	119		70-130
2,5-Dibromotoluene-FID	119		70-130

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703861  
**Report Date:** 02/14/17

### SAMPLE RESULTS

Lab ID:	L1703861-04	Date Collected:	02/07/17 11:30
Client ID:	VES-101 (5-6)	Date Received:	02/07/17
Sample Location:	MA	Field Prep:	Not Specified
Matrix:	Soil	Extraction Method:	EPA 3546
Analytical Method:	98,EPH-04-1.1	Extraction Date:	02/09/17 05:15
Analytical Date:	02/10/17 20:53	Cleanup Method1:	EPH-04-1
Analyst:	EK	Cleanup Date1:	02/10/17
Percent Solids:	38%		

### Quality Control Information

Condition of sample received:	Satisfactory
Sample Temperature upon receipt:	Received on Ice
Sample Extraction method:	Extracted Per the Method

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>Extractable Petroleum Hydrocarbons - Westborough Lab</b>						
C9-C18 Aliphatics	ND		mg/kg	17.3	--	1
C19-C36 Aliphatics	219		mg/kg	17.3	--	1
C11-C22 Aromatics	167		mg/kg	17.3	--	1
C11-C22 Aromatics, Adjusted	166		mg/kg	17.3	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Chloro-Octadecane	55		40-140
o-Terphenyl	53		40-140
2-Fluorobiphenyl	82		40-140
2-Bromonaphthalene	85		40-140

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703861  
**Report Date:** 02/14/17

### SAMPLE RESULTS

Lab ID:	L1703861-05	Date Collected:	02/07/17 12:00
Client ID:	VES-101 (10-12)	Date Received:	02/07/17
Sample Location:	MA	Field Prep:	Not Specified
Matrix:	Soil		
Analytical Method:	100,VPH-04-1.1		
Analytical Date:	02/12/17 02:10		
Analyst:	KD		
Percent Solids:	41%		

### Quality Control Information

Condition of sample received:	Satisfactory
Sample Temperature upon receipt:	Received on Ice
Were samples received in methanol?	Yes (Covering the Soil)
Methanol ratio:	2.5:1

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>Volatile Petroleum Hydrocarbons - Westborough Lab</b>						
C5-C8 Aliphatics	ND		mg/kg	19.8	--	1
C9-C12 Aliphatics	ND		mg/kg	19.8	--	1
C9-C10 Aromatics	ND		mg/kg	19.8	--	1
C5-C8 Aliphatics, Adjusted	ND		mg/kg	19.8	--	1
C9-C12 Aliphatics, Adjusted	ND		mg/kg	19.8	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2,5-Dibromotoluene-PID	119		70-130
2,5-Dibromotoluene-FID	119		70-130

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703861  
**Report Date:** 02/14/17

### SAMPLE RESULTS

Lab ID:	L1703861-05	Date Collected:	02/07/17 12:00
Client ID:	VES-101 (10-12)	Date Received:	02/07/17
Sample Location:	MA	Field Prep:	Not Specified
Matrix:	Soil	Extraction Method:	EPA 3546
Analytical Method:	98,EPH-04-1.1	Extraction Date:	02/09/17 05:15
Analytical Date:	02/10/17 20:22	Cleanup Method1:	EPH-04-1
Analyst:	EK	Cleanup Date1:	02/10/17
Percent Solids:	41%		

### Quality Control Information

Condition of sample received:	Satisfactory
Sample Temperature upon receipt:	Received on Ice
Sample Extraction method:	Extracted Per the Method

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>Extractable Petroleum Hydrocarbons - Westborough Lab</b>						
C9-C18 Aliphatics	ND		mg/kg	16.0	--	1
C19-C36 Aliphatics	ND		mg/kg	16.0	--	1
C11-C22 Aromatics	17.5		mg/kg	16.0	--	1
C11-C22 Aromatics, Adjusted	17.5		mg/kg	16.0	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Chloro-Octadecane	56		40-140
o-Terphenyl	61		40-140
2-Fluorobiphenyl	82		40-140
2-Bromonaphthalene	86		40-140

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703861  
**Report Date:** 02/14/17

### SAMPLE RESULTS

Lab ID:	L1703861-06	Date Collected:	02/07/17 13:15
Client ID:	VES-102 (0-2)	Date Received:	02/07/17
Sample Location:	MA	Field Prep:	Not Specified
Matrix:	Soil		
Analytical Method:	100,VPH-04-1.1		
Analytical Date:	02/12/17 02:50		
Analyst:	KD		
Percent Solids:	92%		

### Quality Control Information

Condition of sample received:	Satisfactory
Sample Temperature upon receipt:	Received on Ice
Were samples received in methanol?	Yes (Covering the Soil)
Methanol ratio:	1:1.4

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>Volatile Petroleum Hydrocarbons - Westborough Lab</b>						
C5-C8 Aliphatics	ND		mg/kg	2.34	--	1
C9-C12 Aliphatics	ND		mg/kg	2.34	--	1
C9-C10 Aromatics	ND		mg/kg	2.34	--	1
C5-C8 Aliphatics, Adjusted	ND		mg/kg	2.34	--	1
C9-C12 Aliphatics, Adjusted	ND		mg/kg	2.34	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2,5-Dibromotoluene-PID	103		70-130
2,5-Dibromotoluene-FID	104		70-130



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703861  
**Report Date:** 02/14/17

### SAMPLE RESULTS

Lab ID:	L1703861-06	Date Collected:	02/07/17 13:15
Client ID:	VES-102 (0-2)	Date Received:	02/07/17
Sample Location:	MA	Field Prep:	Not Specified
Matrix:	Soil	Extraction Method:	EPA 3546
Analytical Method:	98,EPH-04-1.1	Extraction Date:	02/09/17 05:15
Analytical Date:	02/10/17 19:50	Cleanup Method1:	EPH-04-1
Analyst:	EK	Cleanup Date1:	02/10/17
Percent Solids:	92%		

### Quality Control Information

Condition of sample received:	Satisfactory
Sample Temperature upon receipt:	Received on Ice
Sample Extraction method:	Extracted Per the Method

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>Extractable Petroleum Hydrocarbons - Westborough Lab</b>						
C9-C18 Aliphatics	ND		mg/kg	7.19	--	1
C19-C36 Aliphatics	ND		mg/kg	7.19	--	1
C11-C22 Aromatics	ND		mg/kg	7.19	--	1
C11-C22 Aromatics, Adjusted	ND		mg/kg	7.19	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Chloro-Octadecane	84		40-140
o-Terphenyl	94		40-140
2-Fluorobiphenyl	93		40-140
2-Bromonaphthalene	95		40-140

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703861  
**Report Date:** 02/14/17

### SAMPLE RESULTS

Lab ID:	L1703861-07	Date Collected:	02/07/17 13:20
Client ID:	VES-102 (10-12)	Date Received:	02/07/17
Sample Location:	MA	Field Prep:	Not Specified
Matrix:	Soil		
Analytical Method:	100,VPH-04-1.1		
Analytical Date:	02/12/17 03:30		
Analyst:	KD		
Percent Solids:	37%		

### Quality Control Information

Condition of sample received:	Satisfactory
Sample Temperature upon receipt:	Received on Ice
Were samples received in methanol?	Yes (Covering the Soil)
Methanol ratio:	1:1 +/- 25%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>Volatile Petroleum Hydrocarbons - Westborough Lab</b>						
C5-C8 Aliphatics	ND		mg/kg	11.8	--	1
C9-C12 Aliphatics	ND		mg/kg	11.8	--	1
C9-C10 Aromatics	ND		mg/kg	11.8	--	1
C5-C8 Aliphatics, Adjusted	ND		mg/kg	11.8	--	1
C9-C12 Aliphatics, Adjusted	ND		mg/kg	11.8	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2,5-Dibromotoluene-PID	195	Q	70-130
2,5-Dibromotoluene-FID	196	Q	70-130

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703861  
**Report Date:** 02/14/17

### SAMPLE RESULTS

Lab ID:	L1703861-07	Date Collected:	02/07/17 13:20
Client ID:	VES-102 (10-12)	Date Received:	02/07/17
Sample Location:	MA	Field Prep:	Not Specified
Matrix:	Soil	Extraction Method:	EPA 3546
Analytical Method:	98,EPH-04-1.1	Extraction Date:	02/09/17 05:15
Analytical Date:	02/10/17 19:19	Cleanup Method1:	EPH-04-1
Analyst:	EK	Cleanup Date1:	02/10/17
Percent Solids:	37%		

### Quality Control Information

Condition of sample received:	Satisfactory
Sample Temperature upon receipt:	Received on Ice
Sample Extraction method:	Extracted Per the Method

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>Extractable Petroleum Hydrocarbons - Westborough Lab</b>						
C9-C18 Aliphatics	ND		mg/kg	17.8	--	1
C19-C36 Aliphatics	29.6		mg/kg	17.8	--	1
C11-C22 Aromatics	60.6		mg/kg	17.8	--	1
C11-C22 Aromatics, Adjusted	60.6		mg/kg	17.8	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Chloro-Octadecane	134		40-140
o-Terphenyl	138		40-140
2-Fluorobiphenyl	83		40-140
2-Bromonaphthalene	88		40-140

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703861  
**Report Date:** 02/14/17

### Method Blank Analysis Batch Quality Control

Analytical Method: 98,EPH-04-1.1  
Analytical Date: 02/10/17 22:27  
Analyst: EK

Extraction Method: EPA 3546  
Extraction Date: 02/09/17 05:15  
Cleanup Method: EPH-04-1  
Cleanup Date: 02/10/17

Parameter	Result	Qualifier	Units	RL	MDL
Extractable Petroleum Hydrocarbons - Westborough Lab for sample(s):	01-07			Batch:	WG976607-1
C9-C18 Aliphatics	ND		mg/kg	6.52	--
C19-C36 Aliphatics	ND		mg/kg	6.52	--
C11-C22 Aromatics	ND		mg/kg	6.52	--
C11-C22 Aromatics, Adjusted	ND		mg/kg	6.52	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Chloro-Octadecane	73		40-140
o-Terphenyl	82		40-140
2-Fluorobiphenyl	87		40-140
2-Bromonaphthalene	88		40-140

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703861  
**Report Date:** 02/14/17

**Method Blank Analysis**  
**Batch Quality Control**

Analytical Method: 100,VPH-04-1.1  
Analytical Date: 02/11/17 19:52  
Analyst: KD

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Petroleum Hydrocarbons - Westborough Lab for sample(s):	01-07			Batch:	WG977239-4
C5-C8 Aliphatics	ND		mg/kg	2.67	--
C9-C12 Aliphatics	ND		mg/kg	2.67	--
C9-C10 Aromatics	ND		mg/kg	2.67	--
C5-C8 Aliphatics, Adjusted	ND		mg/kg	2.67	--
C9-C12 Aliphatics, Adjusted	ND		mg/kg	2.67	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2,5-Dibromotoluene-PID	104		70-130
2,5-Dibromotoluene-FID	105		70-130

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703861  
**Report Date:** 02/14/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Extractable Petroleum Hydrocarbons - Westborough Lab Associated sample(s): 01-07 Batch: WG976607-2 WG976607-3								
C9-C18 Aliphatics	82		84		40-140	2		25
C19-C36 Aliphatics	97		94		40-140	3		25
C11-C22 Aromatics	96		99		40-140	3		25
Naphthalene	76		86		40-140	12		25
2-Methylnaphthalene	78		88		40-140	12		25
Acenaphthylene	85		93		40-140	9		25
Acenaphthene	87		94		40-140	8		25
Fluorene	94		98		40-140	4		25
Phenanthrene	97		99		40-140	2		25
Anthracene	95		98		40-140	3		25
Fluoranthene	99		100		40-140	1		25
Pyrene	101		102		40-140	1		25
Benzo(a)anthracene	98		98		40-140	0		25
Chrysene	101		101		40-140	0		25
Benzo(b)fluoranthene	100		100		40-140	0		25
Benzo(k)fluoranthene	101		100		40-140	1		25
Benzo(a)pyrene	93		93		40-140	0		25
Indeno(1,2,3-cd)Pyrene	98		98		40-140	0		25
Dibenzo(a,h)anthracene	100		98		40-140	2		25
Benzo(ghi)perylene	95		94		40-140	1		25
Nonane (C9)	68		71		30-140	4		25

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703861  
**Report Date:** 02/14/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Extractable Petroleum Hydrocarbons - Westborough Lab Associated sample(s): 01-07 Batch: WG976607-2 WG976607-3								
Decane (C10)	76		79		40-140	4		25
Dodecane (C12)	78		82		40-140	5		25
Tetradecane (C14)	82		85		40-140	4		25
Hexadecane (C16)	88		87		40-140	1		25
Octadecane (C18)	93		91		40-140	2		25
Nonadecane (C19)	93		91		40-140	2		25
Eicosane (C20)	94		92		40-140	2		25
Docosane (C22)	94		93		40-140	1		25
Tetracosane (C24)	94		92		40-140	2		25
Hexacosane (C26)	93		92		40-140	1		25
Octacosane (C28)	94		92		40-140	2		25
Triacontane (C30)	94		93		40-140	1		25
Hexatriacontane (C36)	98		96		40-140	2		25

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Chloro-Octadecane	77		72		40-140
o-Terphenyl	87		88		40-140
2-Fluorobiphenyl	85		88		40-140
2-Bromonaphthalene	89		91		40-140
% Naphthalene Breakthrough	0		0		
% 2-Methylnaphthalene Breakthrough	0		0		

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703861  
**Report Date:** 02/14/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Petroleum Hydrocarbons - Westborough Lab Associated sample(s): 01-07 Batch: WG977239-2 WG977239-3								
C5-C8 Aliphatics	102		100		70-130	2		25
C9-C12 Aliphatics	100		99		70-130	0		25
C9-C10 Aromatics	88		91		70-130	3		25
Benzene	95		95		70-130	0		25
Toluene	94		94		70-130	0		25
Ethylbenzene	92		94		70-130	1		25
p/m-Xylene	92		94		70-130	1		25
o-Xylene	91		93		70-130	2		25
Methyl tert butyl ether	99		99		70-130	0		25
Naphthalene	111		105		70-130	6		25
1,2,4-Trimethylbenzene	88		91		70-130	3		25
Pentane	121		114		70-130	6		25
2-Methylpentane	99		98		70-130	1		25
2,2,4-Trimethylpentane	101		100		70-130	1		25
n-Nonane	101		100		30-130	1		25
n-Decane	99		98		70-130	1		25
n-Butylcyclohexane	99		99		70-130	0		25

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703861  
**Report Date:** 02/14/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
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Volatile Petroleum Hydrocarbons - Westborough Lab Associated sample(s): 01-07 Batch: WG977239-2 WG977239-3

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2,5-Dibromotoluene-PID	112		106		70-130
2,5-Dibromotoluene-FID	111		105		70-130

**PCBS**



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703861  
**Report Date:** 02/14/17

**SAMPLE RESULTS**

Lab ID: L1703861-01  
Client ID: VES-121 (0-2)  
Sample Location: MA  
Matrix: Soil  
Analytical Method: 97,8082A  
Analytical Date: 02/10/17 16:36  
Analyst: AF  
Percent Solids: 90%

Date Collected: 02/07/17 07:30  
Date Received: 02/07/17  
Field Prep: Not Specified  
Extraction Method: EPA 3540C  
Extraction Date: 02/09/17 00:06  
Cleanup Method: EPA 3665A  
Cleanup Date: 02/10/17  
Cleanup Method: EPA 3660B  
Cleanup Date: 02/10/17

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
<b>MCP Polychlorinated Biphenyls - Westborough Lab</b>							
Aroclor 1016	ND		ug/kg	35.8	--	1	A
Aroclor 1221	ND		ug/kg	35.8	--	1	A
Aroclor 1232	ND		ug/kg	35.8	--	1	A
Aroclor 1242	ND		ug/kg	35.8	--	1	A
Aroclor 1248	ND		ug/kg	35.8	--	1	A
Aroclor 1254	ND		ug/kg	35.8	--	1	A
Aroclor 1260	ND		ug/kg	35.8	--	1	A
Aroclor 1262	ND		ug/kg	35.8	--	1	A
Aroclor 1268	ND		ug/kg	35.8	--	1	A
PCBs, Total	ND		ug/kg	35.8	--	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	57		30-150	A
Decachlorobiphenyl	55		30-150	A
2,4,5,6-Tetrachloro-m-xylene	61		30-150	B
Decachlorobiphenyl	53		30-150	B

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703861  
**Report Date:** 02/14/17

**SAMPLE RESULTS**

Lab ID: L1703861-02  
Client ID: VES-121 (14-15)  
Sample Location: MA  
Matrix: Soil  
Analytical Method: 97,8082A  
Analytical Date: 02/10/17 17:04  
Analyst: AF  
Percent Solids: 68%

Date Collected: 02/07/17 09:00  
Date Received: 02/07/17  
Field Prep: Not Specified  
Extraction Method: EPA 3540C  
Extraction Date: 02/09/17 00:06  
Cleanup Method: EPA 3665A  
Cleanup Date: 02/10/17  
Cleanup Method: EPA 3660B  
Cleanup Date: 02/10/17

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
<b>MCP Polychlorinated Biphenyls - Westborough Lab</b>							
Aroclor 1016	ND		ug/kg	48.2	--	1	A
Aroclor 1221	ND		ug/kg	48.2	--	1	A
Aroclor 1232	ND		ug/kg	48.2	--	1	A
Aroclor 1242	ND		ug/kg	48.2	--	1	A
Aroclor 1248	ND		ug/kg	48.2	--	1	A
Aroclor 1254	ND		ug/kg	48.2	--	1	A
Aroclor 1260	ND		ug/kg	48.2	--	1	A
Aroclor 1262	ND		ug/kg	48.2	--	1	A
Aroclor 1268	ND		ug/kg	48.2	--	1	A
PCBs, Total	ND		ug/kg	48.2	--	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	58		30-150	A
Decachlorobiphenyl	63		30-150	A
2,4,5,6-Tetrachloro-m-xylene	61		30-150	B
Decachlorobiphenyl	56		30-150	B

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703861  
**Report Date:** 02/14/17

**SAMPLE RESULTS**

Lab ID: L1703861-03  
Client ID: VES-120 (1-2)  
Sample Location: MA  
Matrix: Soil  
Analytical Method: 97,8082A  
Analytical Date: 02/10/17 17:17  
Analyst: HT  
Percent Solids: 84%

Date Collected: 02/07/17 10:00  
Date Received: 02/07/17  
Field Prep: Not Specified  
Extraction Method: EPA 3540C  
Extraction Date: 02/09/17 00:06  
Cleanup Method: EPA 3665A  
Cleanup Date: 02/10/17  
Cleanup Method: EPA 3660B  
Cleanup Date: 02/10/17

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
<b>MCP Polychlorinated Biphenyls - Westborough Lab</b>							
Aroclor 1016	ND		ug/kg	38.2	--	1	A
Aroclor 1221	ND		ug/kg	38.2	--	1	A
Aroclor 1232	ND		ug/kg	38.2	--	1	A
Aroclor 1242	ND		ug/kg	38.2	--	1	A
Aroclor 1248	66.5		ug/kg	38.2	--	1	A
Aroclor 1254	ND		ug/kg	38.2	--	1	A
Aroclor 1260	ND		ug/kg	38.2	--	1	A
Aroclor 1262	ND		ug/kg	38.2	--	1	A
Aroclor 1268	ND		ug/kg	38.2	--	1	A
PCBs, Total	66.5		ug/kg	38.2	--	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	76		30-150	A
Decachlorobiphenyl	67		30-150	A
2,4,5,6-Tetrachloro-m-xylene	72		30-150	B
Decachlorobiphenyl	59		30-150	B

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703861  
**Report Date:** 02/14/17

**SAMPLE RESULTS**

Lab ID: L1703861-04  
Client ID: VES-101 (5-6)  
Sample Location: MA  
Matrix: Soil  
Analytical Method: 97,8082A  
Analytical Date: 02/10/17 17:31  
Analyst: AF  
Percent Solids: 38%

Date Collected: 02/07/17 11:30  
Date Received: 02/07/17  
Field Prep: Not Specified  
Extraction Method: EPA 3540C  
Extraction Date: 02/09/17 00:06  
Cleanup Method: EPA 3665A  
Cleanup Date: 02/10/17  
Cleanup Method: EPA 3660B  
Cleanup Date: 02/10/17

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
<b>MCP Polychlorinated Biphenyls - Westborough Lab</b>							
Aroclor 1016	ND		ug/kg	85.1	--	1	A
Aroclor 1221	ND		ug/kg	85.1	--	1	A
Aroclor 1232	ND		ug/kg	85.1	--	1	A
Aroclor 1242	ND		ug/kg	85.1	--	1	A
Aroclor 1248	ND		ug/kg	85.1	--	1	A
Aroclor 1254	ND		ug/kg	85.1	--	1	A
Aroclor 1260	ND		ug/kg	85.1	--	1	A
Aroclor 1262	ND		ug/kg	85.1	--	1	A
Aroclor 1268	ND		ug/kg	85.1	--	1	A
PCBs, Total	ND		ug/kg	85.1	--	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	69		30-150	A
Decachlorobiphenyl	73		30-150	A
2,4,5,6-Tetrachloro-m-xylene	70		30-150	B
Decachlorobiphenyl	66		30-150	B

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703861  
**Report Date:** 02/14/17

**SAMPLE RESULTS**

Lab ID: L1703861-05  
Client ID: VES-101 (10-12)  
Sample Location: MA  
Matrix: Soil  
Analytical Method: 97,8082A  
Analytical Date: 02/10/17 17:45  
Analyst: AF  
Percent Solids: 41%

Date Collected: 02/07/17 12:00  
Date Received: 02/07/17  
Field Prep: Not Specified  
Extraction Method: EPA 3540C  
Extraction Date: 02/09/17 00:06  
Cleanup Method: EPA 3665A  
Cleanup Date: 02/10/17  
Cleanup Method: EPA 3660B  
Cleanup Date: 02/10/17

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
<b>MCP Polychlorinated Biphenyls - Westborough Lab</b>							
Aroclor 1016	ND		ug/kg	81.6	--	1	A
Aroclor 1221	ND		ug/kg	81.6	--	1	A
Aroclor 1232	ND		ug/kg	81.6	--	1	A
Aroclor 1242	ND		ug/kg	81.6	--	1	A
Aroclor 1248	ND		ug/kg	81.6	--	1	A
Aroclor 1254	ND		ug/kg	81.6	--	1	A
Aroclor 1260	ND		ug/kg	81.6	--	1	A
Aroclor 1262	ND		ug/kg	81.6	--	1	A
Aroclor 1268	ND		ug/kg	81.6	--	1	A
PCBs, Total	ND		ug/kg	81.6	--	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	64		30-150	A
Decachlorobiphenyl	57		30-150	A
2,4,5,6-Tetrachloro-m-xylene	74		30-150	B
Decachlorobiphenyl	62		30-150	B

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703861  
**Report Date:** 02/14/17

**SAMPLE RESULTS**

Lab ID: L1703861-06  
Client ID: VES-102 (0-2)  
Sample Location: MA  
Matrix: Soil  
Analytical Method: 97,8082A  
Analytical Date: 02/10/17 17:58  
Analyst: AF  
Percent Solids: 92%

Date Collected: 02/07/17 13:15  
Date Received: 02/07/17  
Field Prep: Not Specified  
Extraction Method: EPA 3540C  
Extraction Date: 02/09/17 00:06  
Cleanup Method: EPA 3665A  
Cleanup Date: 02/10/17  
Cleanup Method: EPA 3660B  
Cleanup Date: 02/10/17

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
<b>MCP Polychlorinated Biphenyls - Westborough Lab</b>							
Aroclor 1016	ND		ug/kg	36.2	--	1	A
Aroclor 1221	ND		ug/kg	36.2	--	1	A
Aroclor 1232	ND		ug/kg	36.2	--	1	A
Aroclor 1242	ND		ug/kg	36.2	--	1	A
Aroclor 1248	ND		ug/kg	36.2	--	1	A
Aroclor 1254	ND		ug/kg	36.2	--	1	A
Aroclor 1260	ND		ug/kg	36.2	--	1	A
Aroclor 1262	ND		ug/kg	36.2	--	1	A
Aroclor 1268	ND		ug/kg	36.2	--	1	A
PCBs, Total	ND		ug/kg	36.2	--	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	81		30-150	A
Decachlorobiphenyl	70		30-150	A
2,4,5,6-Tetrachloro-m-xylene	77		30-150	B
Decachlorobiphenyl	61		30-150	B

Project Name: EAST BOSTON

Lab Number: L1703861

Project Number: 43068

Report Date: 02/14/17

**SAMPLE RESULTS**

Lab ID: L1703861-07  
 Client ID: VES-102 (10-12)  
 Sample Location: MA  
 Matrix: Soil  
 Analytical Method: 97,8082A  
 Analytical Date: 02/10/17 19:12  
 Analyst: AF  
 Percent Solids: 37%

Date Collected: 02/07/17 13:20  
 Date Received: 02/07/17  
 Field Prep: Not Specified  
 Extraction Method: EPA 3540C  
 Extraction Date: 02/09/17 00:06  
 Cleanup Method: EPA 3665A  
 Cleanup Date: 02/10/17  
 Cleanup Method: EPA 3660B  
 Cleanup Date: 02/10/17

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
<b>MCP Polychlorinated Biphenyls - Westborough Lab</b>							
Aroclor 1016	ND		ug/kg	87.0	--	1	A
Aroclor 1221	ND		ug/kg	87.0	--	1	A
Aroclor 1232	ND		ug/kg	87.0	--	1	A
Aroclor 1242	ND		ug/kg	87.0	--	1	A
Aroclor 1248	ND		ug/kg	87.0	--	1	A
Aroclor 1254	ND		ug/kg	87.0	--	1	A
Aroclor 1260	ND		ug/kg	87.0	--	1	A
Aroclor 1262	ND		ug/kg	87.0	--	1	A
Aroclor 1268	ND		ug/kg	87.0	--	1	A
PCBs, Total	ND		ug/kg	87.0	--	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	72		30-150	A
Decachlorobiphenyl	89		30-150	A
2,4,5,6-Tetrachloro-m-xylene	65		30-150	B
Decachlorobiphenyl	84		30-150	B

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703861  
**Report Date:** 02/14/17

### Method Blank Analysis Batch Quality Control

Analytical Method: 97,8082A  
Analytical Date: 02/10/17 13:38  
Analyst: JA

Extraction Method: EPA 3540C  
Extraction Date: 02/09/17 00:06  
Cleanup Method: EPA 3665A  
Cleanup Date: 02/10/17  
Cleanup Method: EPA 3660B  
Cleanup Date: 02/10/17

Parameter	Result	Qualifier	Units	RL	MDL	Column
MCP Polychlorinated Biphenyls - Westborough Lab for sample(s): 01-07 Batch: WG976549-1						
Aroclor 1016	ND		ug/kg	31.5	--	A
Aroclor 1221	ND		ug/kg	31.5	--	A
Aroclor 1232	ND		ug/kg	31.5	--	A
Aroclor 1242	ND		ug/kg	31.5	--	A
Aroclor 1248	ND		ug/kg	31.5	--	A
Aroclor 1254	ND		ug/kg	31.5	--	A
Aroclor 1260	ND		ug/kg	31.5	--	A
Aroclor 1262	ND		ug/kg	31.5	--	A
Aroclor 1268	ND		ug/kg	31.5	--	A
PCBs, Total	ND		ug/kg	31.5	--	A

Surrogate	%Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	76		30-150	A
Decachlorobiphenyl	74		30-150	A
2,4,5,6-Tetrachloro-m-xylene	77		30-150	B
Decachlorobiphenyl	64		30-150	B

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703861  
**Report Date:** 02/14/17

<b>Parameter</b>	<i>LCS</i> %Recovery	<i>Qual</i>	<i>LCSD</i> %Recovery	<i>Qual</i>	<i>%Recovery</i> <i>Limits</i>	<i>RPD</i>	<i>Qual</i>	<i>RPD</i> <i>Limits</i>	<i>Column</i>
MCP Polychlorinated Biphenyls - Westborough Lab Associated sample(s): 01-07 Batch: WG976549-2 WG976549-3									
Aroclor 1016	83		76		40-140	9		30	A
Aroclor 1260	84		78		40-140	7		30	A

<b>Surrogate</b>	<i>LCS</i> %Recovery	<i>Qual</i>	<i>LCSD</i> %Recovery	<i>Qual</i>	<i>Acceptance</i> <i>Criteria</i>	<i>Column</i>
2,4,5,6-Tetrachloro-m-xylene						
Decachlorobiphenyl	73		77		30-150	A
2,4,5,6-Tetrachloro-m-xylene	69		72		30-150	A
Decachlorobiphenyl	77		81		30-150	B
2,4,5,6-Tetrachloro-m-xylene	61		63		30-150	B

## METALS



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703861  
**Report Date:** 02/14/17

**SAMPLE RESULTS**

Lab ID: L1703861-01 Date Collected: 02/07/17 07:30  
Client ID: VES-121 (0-2) Date Received: 02/07/17  
Sample Location: MA Field Prep: Not Specified  
Matrix: Soil  
Percent Solids: 90%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
<b>MCP Total Metals - Mansfield Lab</b>											
Arsenic, Total	3.6		mg/kg	0.43	--	1	02/10/17 16:50	02/13/17 17:41	EPA 3050B	97,6010C	AB
Barium, Total	47		mg/kg	0.43	--	1	02/10/17 16:50	02/13/17 17:41	EPA 3050B	97,6010C	AB
Cadmium, Total	ND		mg/kg	0.43	--	1	02/10/17 16:50	02/13/17 17:41	EPA 3050B	97,6010C	AB
Chromium, Total	17		mg/kg	0.43	--	1	02/10/17 16:50	02/13/17 17:41	EPA 3050B	97,6010C	AB
Lead, Total	5.6		mg/kg	2.2	--	1	02/10/17 16:50	02/13/17 17:41	EPA 3050B	97,6010C	AB
Mercury, Total	ND		mg/kg	0.072	--	1	02/09/17 06:45	02/11/17 15:10	EPA 7471B	97,7471B	BV
Selenium, Total	ND		mg/kg	2.2	--	1	02/10/17 16:50	02/13/17 17:41	EPA 3050B	97,6010C	AB
Silver, Total	ND		mg/kg	0.43	--	1	02/10/17 16:50	02/13/17 17:41	EPA 3050B	97,6010C	AB



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703861  
**Report Date:** 02/14/17

**SAMPLE RESULTS**

Lab ID: L1703861-02  
Client ID: VES-121 (14-15)  
Sample Location: MA  
Matrix: Soil  
Percent Solids: 68%

Date Collected: 02/07/17 09:00  
Date Received: 02/07/17  
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
<b>MCP Total Metals - Mansfield Lab</b>											
Arsenic, Total	6.9		mg/kg	0.57	--	1	02/10/17 16:50	02/13/17 17:46	EPA 3050B	97,6010C	AB
Barium, Total	63		mg/kg	0.57	--	1	02/10/17 16:50	02/13/17 17:46	EPA 3050B	97,6010C	AB
Cadmium, Total	ND		mg/kg	0.57	--	1	02/10/17 16:50	02/13/17 17:46	EPA 3050B	97,6010C	AB
Chromium, Total	23		mg/kg	0.57	--	1	02/10/17 16:50	02/13/17 17:46	EPA 3050B	97,6010C	AB
Lead, Total	86		mg/kg	2.8	--	1	02/10/17 16:50	02/13/17 17:46	EPA 3050B	97,6010C	AB
Mercury, Total	2.11		mg/kg	0.092	--	1	02/09/17 06:45	02/11/17 15:12	EPA 7471B	97,7471B	BV
Selenium, Total	ND		mg/kg	2.8	--	1	02/10/17 16:50	02/13/17 17:46	EPA 3050B	97,6010C	AB
Silver, Total	1.2		mg/kg	0.57	--	1	02/10/17 16:50	02/13/17 17:46	EPA 3050B	97,6010C	AB



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703861  
**Report Date:** 02/14/17

**SAMPLE RESULTS**

Lab ID: L1703861-03 Date Collected: 02/07/17 10:00  
Client ID: VES-120 (1-2) Date Received: 02/07/17  
Sample Location: MA Field Prep: Not Specified  
Matrix: Soil  
Percent Solids: 84%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
<b>MCP Total Metals - Mansfield Lab</b>											
Arsenic, Total	1.8		mg/kg	0.46	--	1	02/10/17 16:50	02/13/17 17:50	EPA 3050B	97,6010C	AB
Barium, Total	5.8		mg/kg	0.46	--	1	02/10/17 16:50	02/13/17 17:50	EPA 3050B	97,6010C	AB
Cadmium, Total	ND		mg/kg	0.46	--	1	02/10/17 16:50	02/13/17 17:50	EPA 3050B	97,6010C	AB
Chromium, Total	6.4		mg/kg	0.46	--	1	02/10/17 16:50	02/13/17 17:50	EPA 3050B	97,6010C	AB
Lead, Total	2.53		mg/kg	2.30	--	1	02/10/17 16:50	02/13/17 17:50	EPA 3050B	97,6010C	AB
Mercury, Total	ND		mg/kg	0.078	--	1	02/09/17 06:45	02/11/17 15:14	EPA 7471B	97,7471B	BV
Selenium, Total	ND		mg/kg	2.3	--	1	02/10/17 16:50	02/13/17 17:50	EPA 3050B	97,6010C	AB
Silver, Total	ND		mg/kg	0.46	--	1	02/10/17 16:50	02/13/17 17:50	EPA 3050B	97,6010C	AB



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703861  
**Report Date:** 02/14/17

**SAMPLE RESULTS**

Lab ID: L1703861-04 Date Collected: 02/07/17 11:30  
Client ID: VES-101 (5-6) Date Received: 02/07/17  
Sample Location: MA Field Prep: Not Specified  
Matrix: Soil  
Percent Solids: 38%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
<b>MCP Total Metals - Mansfield Lab</b>											
Arsenic, Total	52		mg/kg	1.0	--	1	02/10/17 16:50	02/13/17 17:54	EPA 3050B	97,6010C	AB
Barium, Total	440		mg/kg	1.0	--	1	02/10/17 16:50	02/13/17 17:54	EPA 3050B	97,6010C	AB
Cadmium, Total	8.4		mg/kg	1.0	--	1	02/10/17 16:50	02/13/17 17:54	EPA 3050B	97,6010C	AB
Chromium, Total	140		mg/kg	1.0	--	1	02/10/17 16:50	02/13/17 17:54	EPA 3050B	97,6010C	AB
Lead, Total	760		mg/kg	5.2	--	1	02/10/17 16:50	02/13/17 17:54	EPA 3050B	97,6010C	AB
Mercury, Total	2.33		mg/kg	0.166	--	1	02/09/17 06:45	02/11/17 15:16	EPA 7471B	97,7471B	BV
Selenium, Total	ND		mg/kg	5.2	--	1	02/10/17 16:50	02/13/17 17:54	EPA 3050B	97,6010C	AB
Silver, Total	1.6		mg/kg	1.0	--	1	02/10/17 16:50	02/13/17 17:54	EPA 3050B	97,6010C	AB



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703861  
**Report Date:** 02/14/17

**SAMPLE RESULTS**

Lab ID: L1703861-05  
Client ID: VES-101 (10-12)  
Sample Location: MA  
Matrix: Soil  
Percent Solids: 41%

Date Collected: 02/07/17 12:00  
Date Received: 02/07/17  
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
<b>MCP Total Metals - Mansfield Lab</b>											
Arsenic, Total	9.0		mg/kg	0.97	--	1	02/10/17 16:50	02/13/17 18:21	EPA 3050B	97,6010C	AB
Barium, Total	52		mg/kg	0.97	--	1	02/10/17 16:50	02/13/17 18:21	EPA 3050B	97,6010C	AB
Cadmium, Total	ND		mg/kg	0.97	--	1	02/10/17 16:50	02/13/17 18:21	EPA 3050B	97,6010C	AB
Chromium, Total	47		mg/kg	0.97	--	1	02/10/17 16:50	02/13/17 18:21	EPA 3050B	97,6010C	AB
Lead, Total	17		mg/kg	4.9	--	1	02/10/17 16:50	02/13/17 18:21	EPA 3050B	97,6010C	AB
Mercury, Total	ND		mg/kg	0.164	--	1	02/09/17 06:45	02/11/17 15:21	EPA 7471B	97,7471B	BV
Selenium, Total	ND		mg/kg	4.9	--	1	02/10/17 16:50	02/13/17 18:21	EPA 3050B	97,6010C	AB
Silver, Total	ND		mg/kg	0.97	--	1	02/10/17 16:50	02/13/17 18:21	EPA 3050B	97,6010C	AB



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703861  
**Report Date:** 02/14/17

**SAMPLE RESULTS**

Lab ID: L1703861-06 Date Collected: 02/07/17 13:15  
Client ID: VES-102 (0-2) Date Received: 02/07/17  
Sample Location: MA Field Prep: Not Specified  
Matrix: Soil  
Percent Solids: 92%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
<b>MCP Total Metals - Mansfield Lab</b>											
Arsenic, Total	0.98		mg/kg	0.42	--	1	02/10/17 16:50	02/13/17 18:26	EPA 3050B	97,6010C	AB
Barium, Total	34		mg/kg	0.42	--	1	02/10/17 16:50	02/13/17 18:26	EPA 3050B	97,6010C	AB
Cadmium, Total	ND		mg/kg	0.42	--	1	02/10/17 16:50	02/13/17 18:26	EPA 3050B	97,6010C	AB
Chromium, Total	22		mg/kg	0.42	--	1	02/10/17 16:50	02/13/17 18:26	EPA 3050B	97,6010C	AB
Lead, Total	3.5		mg/kg	2.1	--	1	02/10/17 16:50	02/13/17 18:26	EPA 3050B	97,6010C	AB
Mercury, Total	ND		mg/kg	0.070	--	1	02/09/17 06:45	02/11/17 15:23	EPA 7471B	97,7471B	BV
Selenium, Total	ND		mg/kg	2.1	--	1	02/10/17 16:50	02/13/17 18:26	EPA 3050B	97,6010C	AB
Silver, Total	ND		mg/kg	0.42	--	1	02/10/17 16:50	02/13/17 18:26	EPA 3050B	97,6010C	AB



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703861  
**Report Date:** 02/14/17

**SAMPLE RESULTS**

Lab ID: L1703861-07  
Client ID: VES-102 (10-12)  
Sample Location: MA  
Matrix: Soil  
Percent Solids: 37%

Date Collected: 02/07/17 13:20  
Date Received: 02/07/17  
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
<b>MCP Total Metals - Mansfield Lab</b>											
Arsenic, Total	7.2		mg/kg	1.0	--	1	02/10/17 16:50	02/13/17 18:30	EPA 3050B	97,6010C	AB
Barium, Total	40		mg/kg	1.0	--	1	02/10/17 16:50	02/13/17 18:30	EPA 3050B	97,6010C	AB
Cadmium, Total	ND		mg/kg	1.0	--	1	02/10/17 16:50	02/13/17 18:30	EPA 3050B	97,6010C	AB
Chromium, Total	22		mg/kg	1.0	--	1	02/10/17 16:50	02/13/17 18:30	EPA 3050B	97,6010C	AB
Lead, Total	140		mg/kg	5.3	--	1	02/10/17 16:50	02/13/17 18:30	EPA 3050B	97,6010C	AB
Mercury, Total	ND		mg/kg	0.183	--	1	02/09/17 06:45	02/11/17 15:25	EPA 7471B	97,7471B	BV
Selenium, Total	ND		mg/kg	5.3	--	1	02/10/17 16:50	02/13/17 18:30	EPA 3050B	97,6010C	AB
Silver, Total	ND		mg/kg	1.0	--	1	02/10/17 16:50	02/13/17 18:30	EPA 3050B	97,6010C	AB



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703861  
**Report Date:** 02/14/17

## Method Blank Analysis Batch Quality Control

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
MCP Total Metals - Mansfield Lab for sample(s): 01-07 Batch: WG976581-1									
Mercury, Total	ND	mg/kg	0.083	--	1	02/09/17 06:45	02/11/17 14:54	97,7471B	BV

### Prep Information

Digestion Method: EPA 7471B

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
MCP Total Metals - Mansfield Lab for sample(s): 01-07 Batch: WG976947-1									
Arsenic, Total	ND	mg/kg	0.40	--	1	02/10/17 16:50	02/13/17 17:29	97,6010C	AB
Barium, Total	ND	mg/kg	0.40	--	1	02/10/17 16:50	02/13/17 17:29	97,6010C	AB
Cadmium, Total	ND	mg/kg	0.40	--	1	02/10/17 16:50	02/13/17 17:29	97,6010C	AB
Chromium, Total	ND	mg/kg	0.40	--	1	02/10/17 16:50	02/13/17 17:29	97,6010C	AB
Lead, Total	ND	mg/kg	2.0	--	1	02/10/17 16:50	02/13/17 17:29	97,6010C	AB
Selenium, Total	ND	mg/kg	2.0	--	1	02/10/17 16:50	02/13/17 17:29	97,6010C	AB
Silver, Total	ND	mg/kg	0.40	--	1	02/10/17 16:50	02/13/17 17:29	97,6010C	AB

### Prep Information

Digestion Method: EPA 3050B

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703861  
**Report Date:** 02/14/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Total Metals - Mansfield Lab Associated sample(s): 01-07 Batch: WG976581-2 WG976581-3 SRM Lot Number: D091-540								
Mercury, Total	99		99		72-128	0		30
MCP Total Metals - Mansfield Lab Associated sample(s): 01-07 Batch: WG976947-2 WG976947-3 SRM Lot Number: D091-540								
Arsenic, Total	103		103		80-121	0		30
Barium, Total	96		96		84-117	0		30
Cadmium, Total	99		103		83-117	4		30
Chromium, Total	98		119		80-119	19		30
Lead, Total	96		96		82-118	0		30
Selenium, Total	96		101		79-121	5		30
Silver, Total	99		102		76-124	3		30

# **INORGANICS & MISCELLANEOUS**



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703861  
**Report Date:** 02/14/17

## SAMPLE RESULTS

Lab ID: L1703861-01  
Client ID: VES-121 (0-2)  
Sample Location: MA  
Matrix: Soil

Date Collected: 02/07/17 07:30  
Date Received: 02/07/17  
Field Prep: Not Specified

### Test Material Information

Source of Material: Unknown  
Description of Material: Non-Metallic - Damp Clay  
Particle Size: Fine  
Preliminary Burning Time (sec): 120

Parameter	Result	Date Analyzed	Analytical Method	Analyst
Ignitability of Solids - Westborough Lab				
Ignitability	NI	02/10/17 08:23	1,1030	AB



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703861  
**Report Date:** 02/14/17

## SAMPLE RESULTS

Lab ID: L1703861-02  
Client ID: VES-121 (14-15)  
Sample Location: MA  
Matrix: Soil

Date Collected: 02/07/17 09:00  
Date Received: 02/07/17  
Field Prep: Not Specified

### Test Material Information

Source of Material: Unknown  
Description of Material: Non-Metallic - Damp Sand  
Particle Size: Fine  
Preliminary Burning Time (sec): 120

Parameter	Result	Date Analyzed	Analytical Method	Analyst
Ignitability of Solids - Westborough Lab				
Ignitability	NI	02/10/17 08:23	1,1030	AB



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703861  
**Report Date:** 02/14/17

## SAMPLE RESULTS

Lab ID: L1703861-03  
Client ID: VES-120 (1-2)  
Sample Location: MA  
Matrix: Soil

Date Collected: 02/07/17 10:00  
Date Received: 02/07/17  
Field Prep: Not Specified

### Test Material Information

Source of Material: Unknown  
Description of Material: Non-Metallic - Damp Soil  
Particle Size: Medium  
Preliminary Burning Time (sec): 120

Parameter	Result	Date Analyzed	Analytical Method	Analyst
Ignitability of Solids - Westborough Lab				
Ignitability	NI	02/10/17 08:23	1,1030	AB



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703861  
**Report Date:** 02/14/17

## SAMPLE RESULTS

Lab ID: L1703861-04  
Client ID: VES-101 (5-6)  
Sample Location: MA  
Matrix: Soil

Date Collected: 02/07/17 11:30  
Date Received: 02/07/17  
Field Prep: Not Specified

### Test Material Information

Source of Material: Unknown  
Description of Material: Non-Metallic - Wet Soil  
Particle Size: Medium  
Preliminary Burning Time (sec): 120

Parameter	Result	Date Analyzed	Analytical Method	Analyst
Ignitability of Solids - Westborough Lab				
Ignitability	NI	02/10/17 08:23	1,1030	AB



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703861  
**Report Date:** 02/14/17

## SAMPLE RESULTS

Lab ID: L1703861-05  
Client ID: VES-101 (10-12)  
Sample Location: MA  
Matrix: Soil

Date Collected: 02/07/17 12:00  
Date Received: 02/07/17  
Field Prep: Not Specified

### Test Material Information

Source of Material: Unknown  
Description of Material: Non-Metallic - Damp Clay  
Particle Size: Medium  
Preliminary Burning Time (sec): 120

Parameter	Result	Date Analyzed	Analytical Method	Analyst
Ignitability of Solids - Westborough Lab				
Ignitability	NI	02/10/17 08:23	1,1030	AB



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703861  
**Report Date:** 02/14/17

## SAMPLE RESULTS

Lab ID: L1703861-06  
Client ID: VES-102 (0-2)  
Sample Location: MA  
Matrix: Soil

Date Collected: 02/07/17 13:15  
Date Received: 02/07/17  
Field Prep: Not Specified

### Test Material Information

Source of Material: Unknown  
Description of Material: Non-Metallic - Damp Clay  
Particle Size: Fine  
Preliminary Burning Time (sec): 120

Parameter	Result	Date Analyzed	Analytical Method	Analyst
Ignitability of Solids - Westborough Lab				
Ignitability	NI	02/10/17 08:23	1,1030	AB



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703861  
**Report Date:** 02/14/17

## SAMPLE RESULTS

Lab ID: L1703861-07  
Client ID: VES-102 (10-12)  
Sample Location: MA  
Matrix: Soil

Date Collected: 02/07/17 13:20  
Date Received: 02/07/17  
Field Prep: Not Specified

### Test Material Information

Source of Material: Unknown  
Description of Material: Non-Metallic - Damp Soil  
Particle Size: Medium  
Preliminary Burning Time (sec): 120

Parameter	Result	Date Analyzed	Analytical Method	Analyst
Ignitability of Solids - Westborough Lab				
Ignitability	NI	02/10/17 08:23	1,1030	AB



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703861  
**Report Date:** 02/14/17

### SAMPLE RESULTS

Lab ID:	L1703861-01	Date Collected:	02/07/17 07:30
Client ID:	VES-121 (0-2)	Date Received:	02/07/17
Sample Location:	MA	Field Prep:	Not Specified
Matrix:	Soil		

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>General Chemistry - Westborough Lab</b>										
Specific Conductance @ 25 C	ND		umhos/cm	10	--	1	-	02/08/17 21:08	1,9050A	AS
Solids, Total	89.8	%		0.100	NA	1	-	02/08/17 10:26	121,2540G	RI
pH (H)	7.4	SU		-	NA	1	-	02/08/17 17:48	1,9045D	AS
Cyanide, Reactive	ND		mg/kg	10	--	1	02/10/17 18:55	02/10/17 20:40	1,7.3	TL
Sulfide, Reactive	ND		mg/kg	10	--	1	02/10/17 18:55	02/10/17 20:25	1,7.3	TL



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703861  
**Report Date:** 02/14/17

### SAMPLE RESULTS

Lab ID: L1703861-02  
Client ID: VES-121 (14-15)  
Sample Location: MA  
Matrix: Soil

Date Collected: 02/07/17 09:00  
Date Received: 02/07/17  
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>General Chemistry - Westborough Lab</b>										
Specific Conductance @ 25 C	160		umhos/cm	10	--	1	-	02/08/17 21:08	1,9050A	AS
Solids, Total	68.4	%		0.100	NA	1	-	02/08/17 10:26	121,2540G	RI
pH (H)	8.1	SU		-	NA	1	-	02/08/17 17:48	1,9045D	AS
Cyanide, Reactive	ND		mg/kg	10	--	1	02/10/17 18:55	02/10/17 20:40	1,7.3	TL
Sulfide, Reactive	ND		mg/kg	10	--	1	02/10/17 18:55	02/10/17 20:25	1,7.3	TL



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703861  
**Report Date:** 02/14/17

### SAMPLE RESULTS

Lab ID:	L1703861-03	Date Collected:	02/07/17 10:00
Client ID:	VES-120 (1-2)	Date Received:	02/07/17
Sample Location:	MA	Field Prep:	Not Specified
Matrix:	Soil		

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>General Chemistry - Westborough Lab</b>										
Specific Conductance @ 25 C	55		umhos/cm	10	--	1	-	02/08/17 21:08	1,9050A	AS
Solids, Total	84.0		%	0.100	NA	1	-	02/08/17 10:26	121,2540G	RI
pH (H)	6.7		SU	-	NA	1	-	02/08/17 17:48	1,9045D	AS
Cyanide, Reactive	ND		mg/kg	10	--	1	02/10/17 18:55	02/10/17 20:41	1,7.3	TL
Sulfide, Reactive	ND		mg/kg	10	--	1	02/10/17 18:55	02/10/17 20:26	1,7.3	TL



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703861  
**Report Date:** 02/14/17

### SAMPLE RESULTS

Lab ID: L1703861-04  
Client ID: VES-101 (5-6)  
Sample Location: MA  
Matrix: Soil

Date Collected: 02/07/17 11:30  
Date Received: 02/07/17  
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>General Chemistry - Westborough Lab</b>										
Specific Conductance @ 25 C	160		umhos/cm	10	--	1	-	02/08/17 21:08	1,9050A	AS
Solids, Total	38.4	%		0.100	NA	1	-	02/08/17 10:26	121,2540G	RI
pH (H)	7.6	SU		-	NA	1	-	02/08/17 17:48	1,9045D	AS
Cyanide, Reactive	ND		mg/kg	10	--	1	02/10/17 18:55	02/10/17 20:41	1,7.3	TL
Sulfide, Reactive	45		mg/kg	10	--	1	02/10/17 18:55	02/10/17 20:26	1,7.3	TL



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703861  
**Report Date:** 02/14/17

### SAMPLE RESULTS

Lab ID: L1703861-05  
Client ID: VES-101 (10-12)  
Sample Location: MA  
Matrix: Soil

Date Collected: 02/07/17 12:00  
Date Received: 02/07/17  
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>General Chemistry - Westborough Lab</b>										
Specific Conductance @ 25 C	1600		umhos/cm	10	--	1	-	02/08/17 21:08	1,9050A	AS
Solids, Total	40.7	%		0.100	NA	1	-	02/08/17 10:26	121,2540G	RI
pH (H)	7.8	SU		-	NA	1	-	02/08/17 17:48	1,9045D	AS
Cyanide, Reactive	ND		mg/kg	10	--	1	02/10/17 22:15	02/10/17 23:14	1,7.3	TL
Sulfide, Reactive	ND		mg/kg	10	--	1	02/10/17 22:15	02/10/17 23:06	1,7.3	TL



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703861  
**Report Date:** 02/14/17

### SAMPLE RESULTS

Lab ID: L1703861-06  
Client ID: VES-102 (0-2)  
Sample Location: MA  
Matrix: Soil

Date Collected: 02/07/17 13:15  
Date Received: 02/07/17  
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>General Chemistry - Westborough Lab</b>										
Specific Conductance @ 25 C	55		umhos/cm	10	--	1	-	02/08/17 21:08	1,9050A	AS
Solids, Total	91.9	%		0.100	NA	1	-	02/08/17 10:26	121,2540G	RI
pH (H)	8.1	SU		-	NA	1	-	02/08/17 17:48	1,9045D	AS
Cyanide, Reactive	ND		mg/kg	10	--	1	02/10/17 22:15	02/10/17 23:14	1,7.3	TL
Sulfide, Reactive	ND		mg/kg	10	--	1	02/10/17 22:15	02/10/17 23:06	1,7.3	TL



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703861  
**Report Date:** 02/14/17

### SAMPLE RESULTS

Lab ID: L1703861-07  
Client ID: VES-102 (10-12)  
Sample Location: MA  
Matrix: Soil

Date Collected: 02/07/17 13:20  
Date Received: 02/07/17  
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>General Chemistry - Westborough Lab</b>										
Specific Conductance @ 25 C	750		umhos/cm	10	--	1	-	02/08/17 21:08	1,9050A	AS
Solids, Total	37.0	%		0.100	NA	1	-	02/08/17 10:26	121,2540G	RI
pH (H)	7.6	SU		-	NA	1	-	02/08/17 17:48	1,9045D	AS
Cyanide, Reactive	ND		mg/kg	10	--	1	02/10/17 22:15	02/10/17 23:14	1,7.3	TL
Sulfide, Reactive	ND		mg/kg	10	--	1	02/10/17 22:15	02/10/17 23:07	1,7.3	TL



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703861  
**Report Date:** 02/14/17

**Method Blank Analysis**  
**Batch Quality Control**

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab for sample(s): 01-04 Batch: WG976965-1									
Sulfide, Reactive	ND	mg/kg	10	--	1	02/10/17 18:55	02/10/17 20:23	1,7.3	TL
General Chemistry - Westborough Lab for sample(s): 01-04 Batch: WG976967-1									
Cyanide, Reactive	ND	mg/kg	10	--	1	02/10/17 18:55	02/10/17 20:39	1,7.3	TL
General Chemistry - Westborough Lab for sample(s): 05-07 Batch: WG976968-1									
Sulfide, Reactive	ND	mg/kg	10	--	1	02/10/17 22:15	02/10/17 23:06	1,7.3	TL
General Chemistry - Westborough Lab for sample(s): 05-07 Batch: WG976969-1									
Cyanide, Reactive	ND	mg/kg	10	--	1	02/10/17 22:15	02/10/17 23:13	1,7.3	TL



# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703861  
**Report Date:** 02/14/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01-07 Batch: WG976467-1								
pH	101	-	-	-	99-101	-	-	-
General Chemistry - Westborough Lab Associated sample(s): 01-07 Batch: WG976512-1								
Specific Conductance	100	-	-	-	99-101	-	-	-
General Chemistry - Westborough Lab Associated sample(s): 01-04 Batch: WG976965-2								
Sulfide, Reactive	101	-	-	-	60-125	-	-	40
General Chemistry - Westborough Lab Associated sample(s): 01-04 Batch: WG976967-2								
Cyanide, Reactive	86	-	-	-	30-125	-	-	40
General Chemistry - Westborough Lab Associated sample(s): 05-07 Batch: WG976968-2								
Sulfide, Reactive	84	-	-	-	60-125	-	-	40
General Chemistry - Westborough Lab Associated sample(s): 05-07 Batch: WG976969-2								
Cyanide, Reactive	59	-	-	-	30-125	-	-	40

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703861  
**Report Date:** 02/14/17

### Sample Receipt and Container Information

Were project specific reporting limits specified? YES

**Reagent H2O Preserved Vials Frozen on:** 02/08/2017 08:55

#### Cooler Information Custody Seal

##### Cooler

A Absent

#### Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L1703861-01A	Vial MeOH preserved	A	N/A	3.9	Y	Absent	VPH-10(28),MCP-8260HLW-10(14)
L1703861-01B	Vial water preserved	A	N/A	3.9	Y	Absent	MCP-8260HLW-10(14)
L1703861-01C	Vial water preserved	A	N/A	3.9	Y	Absent	MCP-8260HLW-10(14)
L1703861-01D	Glass 500ml/16oz unpreserved	A	N/A	3.9	Y	Absent	EPH-10(14),IGNIT-1030(14),REACTS(14),MCP-8270-10(14),TS(7),MCP-8082-10-3540C(365),PH-9045(1),REACTCN(14),COND-9050(28)
L1703861-01E	Metals Only - Glass 60mL/2oz unp	A	N/A	3.9	Y	Absent	MCP-CR-6010T-10(180),MCP-AS-6010T-10(180),MCP-7471T-10(28),MCP-CD-6010T-10(180),MCP-AG-6010T-10(180),MCP-SE-6010T-10(180),MCP-BA-6010T-10(180),MCP-PB-6010T-10(180)
L1703861-02A	Vial MeOH preserved	A	N/A	3.9	Y	Absent	VPH-10(28),MCP-8260HLW-10(14)
L1703861-02B	Vial water preserved	A	N/A	3.9	Y	Absent	MCP-8260HLW-10(14)
L1703861-02C	Vial water preserved	A	N/A	3.9	Y	Absent	MCP-8260HLW-10(14)
L1703861-02D	Glass 500ml/16oz unpreserved	A	N/A	3.9	Y	Absent	EPH-10(14),IGNIT-1030(14),REACTS(14),MCP-8270-10(14),TS(7),MCP-8082-10-3540C(365),PH-9045(1),REACTCN(14),COND-9050(28)
L1703861-02E	Metals Only - Glass 60mL/2oz unp	A	N/A	3.9	Y	Absent	MCP-CR-6010T-10(180),MCP-AS-6010T-10(180),MCP-7471T-10(28),MCP-CD-6010T-10(180),MCP-AG-6010T-10(180),MCP-SE-6010T-10(180),MCP-BA-6010T-10(180),MCP-PB-6010T-10(180)
L1703861-03A	Vial MeOH preserved	A	N/A	3.9	Y	Absent	VPH-10(28),MCP-8260HLW-10(14)
L1703861-03B	Vial water preserved	A	N/A	3.9	Y	Absent	MCP-8260HLW-10(14)

\*Values in parentheses indicate holding time in days

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703861  
**Report Date:** 02/14/17

**Container Information**

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L1703861-03C	Vial water preserved	A	N/A	3.9	Y	Absent	MCP-8260HLW-10(14)
L1703861-03D	Glass 500ml/16oz unpreserved	A	N/A	3.9	Y	Absent	EPH-10(14),IGNIT-1030(14),REACTS(14),MCP-8270-10(14),TS(7),MCP-8082-10-3540C(365),PH-9045(1),REACTCN(14),COND-9050(28)
L1703861-03E	Metals Only - Glass 60mL/2oz unp	A	N/A	3.9	Y	Absent	MCP-CR-6010T-10(180),MCP-AS-6010T-10(180),MCP-7471T-10(28),MCP-CD-6010T-10(180),MCP-AG-6010T-10(180),MCP-SE-6010T-10(180),MCP-BA-6010T-10(180),MCP-PB-6010T-10(180)
L1703861-04A	Vial MeOH preserved	A	N/A	3.9	Y	Absent	VPH-10(28),MCP-8260HLW-10(14)
L1703861-04B	Vial water preserved	A	N/A	3.9	Y	Absent	MCP-8260HLW-10(14)
L1703861-04C	Vial water preserved	A	N/A	3.9	Y	Absent	MCP-8260HLW-10(14)
L1703861-04D	Glass 500ml/16oz unpreserved	A	N/A	3.9	Y	Absent	EPH-10(14),IGNIT-1030(14),REACTS(14),MCP-8270-10(14),TS(7),MCP-8082-10-3540C(365),PH-9045(1),REACTCN(14),COND-9050(28)
L1703861-04E	Metals Only - Glass 60mL/2oz unp	A	N/A	3.9	Y	Absent	MCP-CR-6010T-10(180),MCP-AS-6010T-10(180),MCP-7471T-10(28),MCP-CD-6010T-10(180),MCP-AG-6010T-10(180),MCP-SE-6010T-10(180),MCP-BA-6010T-10(180),MCP-PB-6010T-10(180)
L1703861-05A	Vial MeOH preserved	A	N/A	3.9	Y	Absent	VPH-10(28),MCP-8260HLW-10(14)
L1703861-05B	Vial water preserved	A	N/A	3.9	Y	Absent	MCP-8260HLW-10(14)
L1703861-05C	Vial water preserved	A	N/A	3.9	Y	Absent	MCP-8260HLW-10(14)
L1703861-05D	Glass 500ml/16oz unpreserved	A	N/A	3.9	Y	Absent	EPH-10(14),IGNIT-1030(14),REACTS(14),MCP-8270-10(14),TS(7),MCP-8082-10-3540C(365),PH-9045(1),REACTCN(14),COND-9050(28)
L1703861-05E	Metals Only - Glass 60mL/2oz unp	A	N/A	3.9	Y	Absent	MCP-CR-6010T-10(180),MCP-AS-6010T-10(180),MCP-7471T-10(28),MCP-CD-6010T-10(180),MCP-AG-6010T-10(180),MCP-SE-6010T-10(180),MCP-BA-6010T-10(180),MCP-PB-6010T-10(180)
L1703861-06A	Vial MeOH preserved	A	N/A	3.9	Y	Absent	VPH-10(28),MCP-8260HLW-10(14)
L1703861-06B	Vial water preserved	A	N/A	3.9	Y	Absent	MCP-8260HLW-10(14)

\*Values in parentheses indicate holding time in days

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703861  
**Report Date:** 02/14/17

**Container Information**

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L1703861-06C	Vial water preserved	A	N/A	3.9	Y	Absent	MCP-8260HLW-10(14)
L1703861-06D	Glass 500ml/16oz unpreserved	A	N/A	3.9	Y	Absent	EPH-10(14),IGNIT-1030(14),REACTS(14),MCP-8270-10(14),TS(7),MCP-8082-10-3540C(365),PH-9045(1),REACTCN(14),COND-9050(28)
L1703861-06E	Metals Only - Glass 60mL/2oz unp	A	N/A	3.9	Y	Absent	MCP-CR-6010T-10(180),MCP-AS-6010T-10(180),MCP-7471T-10(28),MCP-CD-6010T-10(180),MCP-AG-6010T-10(180),MCP-SE-6010T-10(180),MCP-BA-6010T-10(180),MCP-PB-6010T-10(180)
L1703861-07A	Vial MeOH preserved	A	N/A	3.9	Y	Absent	VPH-10(28),MCP-8260HLW-10(14)
L1703861-07B	Vial water preserved	A	N/A	3.9	Y	Absent	MCP-8260HLW-10(14)
L1703861-07C	Vial water preserved	A	N/A	3.9	Y	Absent	MCP-8260HLW-10(14)
L1703861-07D	Glass 500ml/16oz unpreserved	A	N/A	3.9	Y	Absent	EPH-10(14),IGNIT-1030(14),REACTS(14),MCP-8270-10(14),TS(7),MCP-8082-10-3540C(365),PH-9045(1),REACTCN(14),COND-9050(28)
L1703861-07E	Metals Only - Glass 60mL/2oz unp	A	N/A	3.9	Y	Absent	MCP-CR-6010T-10(180),MCP-AS-6010T-10(180),MCP-7471T-10(28),MCP-CD-6010T-10(180),MCP-AG-6010T-10(180),MCP-SE-6010T-10(180),MCP-BA-6010T-10(180),MCP-PB-6010T-10(180)

\*Values in parentheses indicate holding time in days

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703861  
**Report Date:** 02/14/17

## GLOSSARY

### **Acronyms**

EDL	- Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).
EPA	- Environmental Protection Agency.
LCS	- Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCSD	- Laboratory Control Sample Duplicate: Refer to LCS.
LFB	- Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
MDL	- Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
MS	- Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available.
MSD	- Matrix Spike Sample Duplicate: Refer to MS.
NA	- Not Applicable.
NC	- Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
NDPA/DPA	- N-Nitrosodiphenylamine/Diphenylamine.
NI	- Not Ignitable.
NP	- Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.
RL	- Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
RPD	- Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.
SRM	- Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.
STLP	- Semi-dynamic Tank Leaching Procedure per EPA Method 1315.
TIC	- Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

### **Footnotes**

- 1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

### **Terms**

**Total:** With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

**Analytical Method:** Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

### **Data Qualifiers**

- A** - Spectra identified as "Aldol Condensation Product".
- B** - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the

**Report Format:** Data Usability Report



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703861  
**Report Date:** 02/14/17

**Data Qualifiers**

reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

- C** - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.
- D** - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.
- E** - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.
- G** - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.
- H** - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.
- I** - The lower value for the two columns has been reported due to obvious interference.
- M** - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.
- NJ** - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.
- P** - The RPD between the results for the two columns exceeds the method-specified criteria.
- Q** - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)
- R** - Analytical results are from sample re-analysis.
- RE** - Analytical results are from sample re-extraction.
- S** - Analytical results are from modified screening analysis.
- J** - Estimated value. This represents an estimated concentration for Tentatively Identified Compounds (TICs).
- ND** - Not detected at the reporting limit (RL) for the sample.

*Report Format:* Data Usability Report



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1703861  
**Report Date:** 02/14/17

## REFERENCES

- 1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - IV, 2007.
- 97 EPA Test Methods (SW-846) with QC Requirements & Performance Standards for the Analysis of EPA SW-846 Methods under the Massachusetts Contingency Plan, WSC-CAM-IIA, IIB, IIIA, IIIB, IIIC, IID, VA, VB, VC, VIA, VIB, VIIIA and VIIIB, July 2010.
- 98 Method for the Determination of Extractable Petroleum Hydrocarbons (EPH), MassDEP, May 2004, Revision 1.1 with QC Requirements & Performance Standards for the Analysis of EPH under the Massachusetts Contingency Plan, WSC-CAM-IVB, July 2010.
- 100 Method for the Determination of Volatile Petroleum Hydrocarbons (VPH), MassDEP, May 2004, Revision 1.1 with QC Requirements & Performance Standards for the Analysis of VPH under the Massachusetts Contingency Plan, WSC-CAM-IVA, July 2010.
- 121 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. Standard Methods Online.

## LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at its own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.



## Certification Information

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**The following analytes are not included in our Primary NELAP Scope of Accreditation:**

**Westborough Facility**

EPA 624: m/p-xylene, o-xylene  
EPA 8260C: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), Methyl methacrylate, 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.  
EPA 8270D: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.  
EPA 300: DW: Bromide  
EPA 6860: NPW and SCM: Perchlorate  
EPA 9010: NPW and SCM: Amenable Cyanide Distillation  
EPA 9012B: NPW: Total Cyanide  
EPA 9050A: NPW: Specific Conductance  
SM3500: NPW: Ferrous Iron  
SM4500: NPW: Amenable Cyanide, Dissolved Oxygen; SCM: Total Phosphorus, TKN, NO<sub>2</sub>, NO<sub>3</sub>.  
SM5310C: DW: Dissolved Organic Carbon

**Mansfield Facility**

SM 2540D: TSS  
EPA 3005A NPW  
EPA 8082A: NPW: PCB: 1, 5, 31, 87, 101, 110, 141, 151, 153, 180, 183, 187.  
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.  
Biological Tissue Matrix: EPA 3050B

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**The following analytes are included in our Massachusetts DEP Scope of Accreditation**

**Westborough Facility:**

**Drinking Water**

EPA 300.0: Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C**, **SM4500CN-CE**, **EPA 180.1**, **SM2130B**, **SM4500CI-D**, **SM2320B**, **SM2540C**, **SM4500H-B**  
EPA 332: Perchlorate; **EPA 524.2**: THMs and VOCs; **EPA 504.1**: EDB, DBCP.  
Microbiology: **SM9215B**; **SM9223-P/A**, **SM9223B-Colilert-QT**,**SM9222D**.

**Non-Potable Water**

**SM4500H,B**, **EPA 120.1**, **SM2510B**, **SM2540C**, **SM2320B**, **SM4500CL-E**, **SM4500F-BC**, **SM4500NH3-BH**, **EPA 350.1**: Ammonia-N, LACHAT 10-107-06-1-B: Ammonia-N, **SM4500NO3-F**, **EPA 353.2**: Nitrate-N, **EPA 351.1**, **SM4500P-E**, **SM4500P-B**, **E**, **SM4500SO4-E**, **SM5220D**, **EPA 410.4**, **SM5210B**, **SM5310C**, **SM4500CL-D**, **EPA 1664**, **EPA 420.1**, **SM4500-CN-CE**, **SM2540D**.  
**EPA 624**: Volatile Halocarbons & Aromatics,  
**EPA 608**: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs  
**EPA 625**: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045**: PCB-Oil.  
Microbiology: **SM9223B-Colilert-QT**; **Enterolert-QT**, **SM9221E**.

**Mansfield Facility:**

**Drinking Water**

**EPA 200.7**: Ba, Be, Cd, Cr, Cu, Ni, Na, Ca. **EPA 200.8**: Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Ni, Se, TL. **EPA 245.1 Hg**.

**Non-Potable Water**

**EPA 200.7**: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.  
**EPA 200.8**: Al, Sb, As, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn.  
**EPA 245.1 Hg**.  
**SM2340B**

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For a complete listing of analytes and methods, please contact your Alpha Project Manager.



## CHAIN OF CUSTODY

PAGE 1 OF 1

Date Rec'd in Lab: 2/7/17

ALPHA Job #: L1703861

8 Walkup Drive  
Westboro, MA 01581  
Tel: 508-898-9220

320 Forbes Blvd  
Mansfield, MA 02048  
Tel: 508-822-9300

## Client Information

Client: Vertex

Address: One Congress St., 10th fl  
Boston, MA 02114

Phone: 781-971-5360

Email: bgibbons@vertexery.com

ksarson@vertexery.com

Additional Project Information:

## Project Information

Project Name: East Boston

Project Location: MA

Project #: 43068

Project Manager: Bill Gibbons

ALPHA Quote #:

## Turn-Around Time

 Standard       RUSH (only confirmed if pre-approved)

Date Due:

## Report Information - Data Deliverables

 ADEX       EMAIL

## Billing Information

 Same as Client info      PO #:

## Regulatory Requirements &amp; Project Information Requirements

- Yes     No MA MCP Analytical Methods       Yes     No CT RCP Analytical Methods  
 Yes     No Matrix Spike Required on this SDG? (Required for MCP Inorganics)  
 Yes     No GW1 Standards (Info Required for Metals & EPH with Targets)  
 Yes     No NPDES RGP  
 Other State /Fed Program \_\_\_\_\_ Criteria \_\_\_\_\_

ANALYSIS	Criteria												TOTAL #	
	<input type="checkbox"/> VOC: <input checked="" type="checkbox"/> 8260	<input type="checkbox"/> 624	<input type="checkbox"/> 524.2	<input checked="" type="checkbox"/> PAH	<input type="checkbox"/> MCP 13	<input type="checkbox"/> MCP 14	<input type="checkbox"/> RCP 15	<input type="checkbox"/> PP13	<input type="checkbox"/> Ranges Only	<input type="checkbox"/> Ranges Only	<input type="checkbox"/> PEST	<input type="checkbox"/> PCB	<input type="checkbox"/> Quant Only	<input type="checkbox"/> Fingerprint
VOC: <input checked="" type="checkbox"/> 8260	✓													
SVOOC: <input type="checkbox"/> ABN														
METALS: <input type="checkbox"/> RCR45														
EPH: <input type="checkbox"/> Ranges & Targets														
VPH: <input type="checkbox"/> Ranges & Targets														
TPH: <input type="checkbox"/> Quant Only														
PHT: <input type="checkbox"/> 8082														
PCB: <input type="checkbox"/> Cyanide														
PCB: <input type="checkbox"/> Sulfide														
PCB: <input type="checkbox"/> Reducibility														

## SAMPLE INFO

Filtration  
 Field  
 Lab to do

Preservation  
 Lab to do

Sample Comments

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection		Sample Matrix	Sampler Initials	Criteria												TOTAL #
		Date	Time			VOC: <input checked="" type="checkbox"/> 8260	<input type="checkbox"/> 624	<input type="checkbox"/> 524.2	<input checked="" type="checkbox"/> PAH	<input type="checkbox"/> MCP 13	<input type="checkbox"/> MCP 14	<input type="checkbox"/> RCP 15	<input type="checkbox"/> PP13	<input type="checkbox"/> Ranges Only	<input type="checkbox"/> Ranges Only	<input type="checkbox"/> PEST	<input type="checkbox"/> PCB	<input type="checkbox"/> Quant Only
03861-01	VES-121 (0-2)	5/7/17	0730	Soil	105	X	X		X	X	X	X		X	X			5
02	VES-121 (4-15)		0900			X	X		X	X	X	X		X	X			5
03	VES-120 (1-2)		1000			X	X		X	X	X	X		X	X			5
04	VES-101 (5-6)		1130			X	X		X	X	X	X		X	X			5
05	VES-101 (10-12)		1200			X	X		X	X	X	X		X	X			5
06	VES-102 (0-2)		13:15			BS	X	X	X	X	X	X		X	X			5
07	VES-102 (10-12)		13:20			BS	X	X	X	X	X	X		X	X			5

## Container Type

P= Plastic  
 A= Amber glass  
 V= Vial  
 G= Glass  
 B= Bacteria cup  
 C= Cube  
 O= Other  
 E= Encore  
 D= BOD Bottle

## Preservative

A= None  
 B= HCl  
 C= HNO<sub>3</sub>  
 D= H<sub>2</sub>SO<sub>4</sub>  
 E= NaOH  
 F= MeOH  
 G= NaHSO<sub>4</sub>  
 H= Na<sub>2</sub>S<sub>2</sub>O<sub>3</sub>  
 I= Ascorbic Acid  
 J= NH<sub>4</sub>Cl  
 K= Zn Acetate  
 O= Other

## Container Type

V

A

A

A

V

A

A

A

## Preservative

F

A

A

A

F

A

A

A

Relinquished By:	Date/Time	Received By:	Date/Time	All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.	
Karen Carson	2/7/17 12:13				
32	2/7/17 14:26	Jim Spangler	2/7/17 14:26		
John Seng	2/7/17 17:45	John Smith	2/7/17 17:45		
				ID# NO: 01-01 (rev. 12-Mar-2012)	

**Method Blank Summary  
Form 4**

Client	: Vertex Environmental Services, Inc.	Lab Number	: L1703861
Project Name	: EAST BOSTON	Project Number	: 43068
Lab Sample ID	: WG977259-5	Lab File ID	: V11170212A05
Instrument ID	: VOA111		
Matrix	: SOIL	Analysis Date	: 02/12/17 10:38

Client Sample No.	Lab Sample ID	Analysis Date
WG977259-3LCS	WG977259-3	02/12/17 09:22
WG977259-4LCSD	WG977259-4	02/12/17 09:48
VES-121 (0-2)	L1703861-01	02/12/17 12:21
VES-121 (14-15)	L1703861-02	02/12/17 12:47
VES-120 (1-2)	L1703861-03	02/12/17 13:12
VES-101 (5-6)	L1703861-04	02/12/17 13:37
VES-101 (10-12)	L1703861-05	02/12/17 14:03
VES-102 (0-2)	L1703861-06	02/12/17 14:28
VES-102 (10-12)	L1703861-07	02/12/17 14:53

**Continuing Calibration  
Form 7**

Client	: Vertex Environmental Services, Inc.	Lab Number	: L1703861
Project Name	: EAST BOSTON	Project Number	: 43068
Instrument ID	: VOA111	Calibration Date	: 02/12/17 09:22
Lab File ID	: V11170212A02	Init. Calib. Date(s)	: 01/30/17
Sample No	: WG977259-2	Init. Calib. Times	: 21:39 01/31/17 00:38
Channel	:		

Compound	Ave. RRF	RRF	Min RRF	%D	Max %D	Area%	Dev(min)
Fluorobenzene	1	1	-	0	20	82	0
Dichlorodifluoromethane	0.292	0.277	-	5.1	20	79	0
Chloromethane	0.451	0.452	-	-0.2	20	82	0
Vinyl chloride	0.346	0.348	-	-0.6	20	83	0
Bromomethane	0.152	0.155	-	-2	20	85	0
Chloroethane	0.177	0.192	-	-8.5	20	82	0
Trichlorofluoromethane	0.361	0.373	-	-3.3	20	84	0
Ethyl ether	0.146	0.146	-	0	20	82	0
1,1-Dichloroethene	0.199	0.202	-	-1.5	20	84	0
Carbon disulfide	0.765	0.749	-	2.1	20	84	0
Freon-113	0.18	0.188	-	-4.4	20	86	0
Acrolein	0.034	0.027	-	20.6*	20	55	0
Methylene chloride	0.264	0.269	-	-1.9	20	85	0
Acetone	0.106	0.096	-	9.4	20	69	0
trans-1,2-Dichloroethene	0.234	0.234	-	0	20	81	0
Methyl acetate	0.222	0.217	-	2.3	20	86	0
Methyl tert-butyl ether	0.756	0.739	-	2.2	20	82	0
tert-Butyl alcohol	0.026	0.027	-	-3.8	20	89	0
Diisopropyl ether	1.413	1.434	-	-1.5	20	84	0
1,1-Dichloroethane	0.565	0.574	-	-1.6	20	84	0
Halothane	0.14	0.139	-	0.7	20	83	0
Acrylonitrile	0.105	0.106	-	-1	20	82	0
Ethyl tert-butyl ether	1.043	1.039	-	0.4	20	84	0
Vinyl acetate	0.941	0.936	-	0.5	20	83	0
cis-1,2-Dichloroethene	0.265	0.263	-	0.8	20	81	0
2,2-Dichloropropane	0.39	0.412	-	-5.6	20	87	0
Bromochloromethane	0.114	0.109	-	4.4	20	78	0
Cyclohexane	0.523	0.571	-	-9.2	20	90	0
Chloroform	0.478	0.481	-	-0.6	20	82	0
Ethyl acetate	0.342	0.336	-	1.8	20	83	0
Carbon tetrachloride	0.317	0.329	-	-3.8	20	85	0
Tetrahydrofuran	0.128	0.133	-	-3.9	20	85	0
Dibromofluoromethane	0.236	0.237	-	-0.4	20	82	0
1,1,1-Trichloroethane	0.389	0.402	-	-3.3	20	83	0
2-Butanone	0.158	0.14	-	11.4	20	74	0
1,1-Dichloropropene	0.348	0.362	-	-4	20	84	0
Benzene	1.024	1.029	-	-0.5	20	83	0
tert-Amyl methyl ether	0.7	0.694	-	0.9	20	82	0
1,2-Dichloroethane-d4	0.321	0.325	-	-1.2	20	84	0
1,2-Dichloroethane	0.45	0.448	-	0.4	20	81	0
Methyl cyclohexane	0.357	0.385	-	-7.8	20	89	0
Trichloroethene	0.257	0.263	-	-2.3	20	84	0
Dibromomethane	0.151	0.149	-	1.3	20	82	0
1,2-Dichloropropane	0.318	0.32	-	-0.6	20	83	0
2-Chloroethyl vinyl ether	0.161	0.163	-	-1.2	20	82	0

\* Value outside of QC limits.



# Continuing Calibration

## Form 7

Client : Vertex Environmental Services, Inc.      Lab Number : L1703861  
 Project Name : EAST BOSTON      Project Number : 43068  
 Instrument ID : VOA111      Calibration Date : 02/12/17 09:22  
 Lab File ID : V11170212A02      Init. Calib. Date(s) : 01/30/17      01/31/17  
 Sample No : WG977259-2      Init. Calib. Times : 21:39      00:38  
 Channel :

Compound	Ave. RRF	RRF	Min RRF	%D	Max %D	Area%	Dev(min)
Bromodichloromethane	0.365	0.354	-	3	20	80	0
1,4-Dioxane	0.00225	0.00243	-	-8	20	87	0
cis-1,3-Dichloropropene	0.432	0.426	-	1.4	20	82	0
Chlorobenzene-d5	1	1	-	0	20	84	0
Toluene-d8	1.352	1.36	-	-0.6	20	84	0
Toluene	0.899	0.879	-	2.2	20	82	0
4-Methyl-2-pentanone	0.145	0.131	-	9.7	20	81	0
Tetrachloroethene	0.327	0.325	-	0.6	20	82	0
trans-1,3-Dichloropropene	0.548	0.54	-	1.5	20	84	0
Ethyl methacrylate	20	17.449	-	12.8	20	81	0
1,1,2-Trichloroethane	0.261	0.256	-	1.9	20	81	0
Chlorodibromomethane	0.335	0.316	-	5.7	20	79	0
1,3-Dichloropropane	0.562	0.55	-	2.1	20	82	0
1,2-Dibromoethane	0.285	0.275	-	3.5	20	80	0
2-Hexanone	0.306	0.284	-	7.2	20	80	0
Chlorobenzene	0.972	0.945	-	2.8	20	82	0
Ethylbenzene	1.74	1.727	-	0.7	20	83	0
1,1,1,2-Tetrachloroethane	0.341	0.326	-	4.4	20	80	0
p/m Xylene	0.631	0.629	-	0.3	20	83	0
o Xylene	0.603	0.595	-	1.3	20	82	0
Styrene	1.018	1	-	1.8	20	82	0
1,4-Dichlorobenzene-d4	1	1	-	0	20	84	0
Bromoform	0.412	0.382	-	7.3	20	78	0
Isopropylbenzene	3.309	3.352	-	-1.3	20	84	0
4-Bromofluorobenzene	1.064	1.096	-	-3	20	86	0
Bromobenzene	0.78	0.748	-	4.1	20	81	0
n-Propylbenzene	4.144	4.298	-	-3.7	20	86	0
1,4-Dichlorobutane	1.642	1.628	-	0.9	20	84	0
1,1,2,2-Tetrachloroethane	0.783	0.756	-	3.4	20	81	0
4-Ethyltoluene	3.249	3.327	-	-2.4	20	85	0
2-Chlorotoluene	2.943	2.98	-	-1.3	20	84	0
1,3,5-Trimethylbenzene	2.832	2.884	-	-1.8	20	85	0
1,2,3-Trichloropropane	0.664	0.651	-	2	20	82	0
trans-1,4-Dichloro-2-butene	0.327	0.338	-	-3.4	20	87	0
4-Chlorotoluene	2.607	2.643	-	-1.4	20	85	0
tert-Butylbenzene	2.294	2.305	-	-0.5	20	82	0
1,2,4-Trimethylbenzene	2.895	2.92	-	-0.9	20	83	0
sec-Butylbenzene	3.577	3.682	-	-2.9	20	85	0
p-Isopropyltoluene	2.913	2.982	-	-2.4	20	84	0
1,3-Dichlorobenzene	1.545	1.521	-	1.6	20	82	0
1,4-Dichlorobenzene	1.555	1.502	-	3.4	20	82	0
p-Diethylbenzene	1.703	1.768	-	-3.8	20	86	0
n-Butylbenzene	2.973	3.107	-	-4.5	20	88	0
1,2-Dichlorobenzene	1.448	1.393	-	3.8	20	81	0
1,2,4,5-Tetramethylbenzene	2.748	2.68	-	2.5	20	82	0

\* Value outside of QC limits.



# Continuing Calibration Form 7

Client : Vertex Environmental Services, Inc.      Lab Number : L1703861  
 Project Name : EAST BOSTON      Project Number : 43068  
 Instrument ID : VOA111      Calibration Date : 02/12/17 09:22  
 Lab File ID : V11170212A02      Init. Calib. Date(s) : 01/30/17      01/31/17  
 Sample No : WG977259-2      Init. Calib. Times : 21:39      00:38  
 Channel :

Compound	Ave. RRF	RRF	Min RRF	%D	Max %D	Area%	Dev(min)
1,2-Dibromo-3-chloropropan	0.104	0.09	-	13.5	20	78	0
1,3,5-Trichlorobenzene	1.101	1.076	-	2.3	20	81	0
Hexachlorobutadiene	0.485	0.463	-	4.5	20	79	0
1,2,4-Trichlorobenzene	0.985	0.952	-	3.4	20	81	0
Naphthalene	2.073	1.974	-	4.8	20	80	0
1,2,3-Trichlorobenzene	0.892	0.846	-	5.2	20	78	0

---

\* Value outside of QC limits.





## ANALYTICAL REPORT

Lab Number:	L1703863
Client:	Vertex Environmental Services, Inc. 400 Libbey Pkwy Weymouth, MA 02184
ATTN:	Bill Gibbons
Phone:	(617) 830-1540
Project Name:	EAST BOSTON (CONCRETE)
Project Number:	43068
Report Date:	02/14/17

The original project report/data package is held by Alpha Analytical. This report/data package is paginated and should be reproduced only in its entirety. Alpha Analytical holds no responsibility for results and/or data that are not consistent with the original.

*Certifications & Approvals:* MA (M-MA086), NH NELAP (2064), NJ NELAP (MA935), CT (PH-0574), IL (200077), ME (MA00086), MD (348), NH (2003), NY (1111-25700/666), PA (68-03671), RI (LA000065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #P330-14-00197).

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Eight Walkup Drive, Westborough, MA 01581-1019  
508-898-9220 (Fax) 508-898-9193 800-624-9220 - [www.alphalab.com](http://www.alphalab.com)



**Project Name:** EAST BOSTON (CONCRETE)  
**Project Number:** 43068

**Lab Number:** L1703863  
**Report Date:** 02/14/17

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L1703863-01	VES-MAINT-N	CONCRETE	EAST BOSTON	02/07/17 09:50	02/07/17
L1703863-02	VES-MAINT-S	CONCRETE	EAST BOSTON	02/07/17 10:05	02/07/17
L1703863-03	VES-TRANS-N	CONCRETE	EAST BOSTON	02/07/17 11:05	02/07/17
L1703863-04	VES-TRANS-SE	CONCRETE	EAST BOSTON	02/07/17 11:10	02/07/17
L1703863-05	VES-TRANS-SW	CONCRETE	EAST BOSTON	02/07/17 11:15	02/07/17

**Project Name:** EAST BOSTON (CONCRETE)  
**Project Number:** 43068

**Lab Number:** L1703863  
**Report Date:** 02/14/17

### MADEP MCP Response Action Analytical Report Certification

This form provides certifications for all samples performed by MCP methods. Please refer to the Sample Results and Container Information sections of this report for specification of MCP methods used for each analysis. The following questions pertain only to MCP Analytical Methods.

<b>An affirmative response to questions A through F is required for "Presumptive Certainty" status</b>		
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
B	Were the analytical method(s) and all associated QC requirements specified in the selected CAM protocol(s) followed?	YES
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
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
E a.	VPH, EPH, and APH Methods only: Was each method conducted without significant modification(s)? (Refer to the individual method(s) for a list of significant modifications).	N/A
E b.	APH and TO-15 Methods only: Was the complete analyte list reported for each method?	N/A
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

<b>A response to questions G, H and I is required for "Presumptive Certainty" status</b>		
G	Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocol(s)?	YES
H	Were all QC performance standards specified in the CAM protocol(s) achieved?	NO
I	Were results reported for the complete analyte list specified in the selected CAM protocol(s)?	YES

**For any questions answered "No", please refer to the case narrative section on the following page(s).**

Please note that sample matrix information is located in the Sample Results section of this report.



**Project Name:** EAST BOSTON (CONCRETE)  
**Project Number:** 43068

**Lab Number:** L1703863  
**Report Date:** 02/14/17

### Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively. When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. All specific QC information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated usability implications. Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances the specific failure is not narrated but noted in the associated QC table. The information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated usability implications.

Please see the associated ADEx data file for a comparison of laboratory reporting limits that were achieved with the regulatory Numerical Standards requested on the Chain of Custody.

#### HOLD POLICY

For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Client Service Representative and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Client Services at 800-624-9220 with any questions.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature:


 Michelle M. Morris

Title: Technical Director/Representative

Date: 02/14/17

# ORGANICS



**PCBS**



Project Name: EAST BOSTON (CONCRETE)

Lab Number: L1703863

Project Number: 43068

Report Date: 02/14/17

**SAMPLE RESULTS**

Lab ID: L1703863-01  
 Client ID: VES-MAINT-N  
 Sample Location: EAST BOSTON  
 Matrix: Concrete  
 Analytical Method: 97,8082A  
 Analytical Date: 02/10/17 16:29  
 Analyst: HT  
 Percent Solids: 98%

Date Collected: 02/07/17 09:50  
 Date Received: 02/07/17  
 Field Prep: Not Specified  
 Extraction Method: EPA 3540C  
 Extraction Date: 02/09/17 03:40  
 Cleanup Method: EPA 3665A  
 Cleanup Date: 02/10/17  
 Cleanup Method: EPA 3660B  
 Cleanup Date: 02/10/17

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
<b>MCP Polychlorinated Biphenyls - Westborough Lab</b>							
Aroclor 1016	ND		ug/kg	55.6	--	1	A
Aroclor 1221	ND		ug/kg	55.6	--	1	A
Aroclor 1232	ND		ug/kg	55.6	--	1	A
Aroclor 1242	ND		ug/kg	55.6	--	1	A
Aroclor 1248	ND		ug/kg	37.0	--	1	A
Aroclor 1254	ND		ug/kg	55.6	--	1	B
Aroclor 1260	ND		ug/kg	37.0	--	1	B
Aroclor 1262	ND		ug/kg	18.5	--	1	A
Aroclor 1268	ND		ug/kg	18.5	--	1	A
PCBs, Total	ND		ug/kg	37.0	--	1	B

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	81		30-150	A
Decachlorobiphenyl	104		30-150	A
2,4,5,6-Tetrachloro-m-xylene	99		30-150	B
Decachlorobiphenyl	118		30-150	B

**Project Name:** EAST BOSTON (CONCRETE)  
**Project Number:** 43068

**Lab Number:** L1703863  
**Report Date:** 02/14/17

**SAMPLE RESULTS**

Lab ID: L1703863-02  
Client ID: VES-MAINT-S  
Sample Location: EAST BOSTON  
Matrix: Concrete  
Analytical Method: 97,8082A  
Analytical Date: 02/11/17 22:23  
Analyst: JW  
Percent Solids: 99%

Date Collected: 02/07/17 10:05  
Date Received: 02/07/17  
Field Prep: Not Specified  
Extraction Method: EPA 3540C  
Extraction Date: 02/10/17 18:50  
Cleanup Method: EPA 3665A  
Cleanup Date: 02/11/17  
Cleanup Method: EPA 3660B  
Cleanup Date: 02/11/17

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
<b>MCP Polychlorinated Biphenyls - Westborough Lab</b>							
Aroclor 1016	ND		ug/kg	51.6	--	1	A
Aroclor 1221	ND		ug/kg	51.6	--	1	A
Aroclor 1232	ND		ug/kg	51.6	--	1	A
Aroclor 1242	ND		ug/kg	51.6	--	1	A
Aroclor 1248	ND		ug/kg	34.4	--	1	A
Aroclor 1254	ND		ug/kg	51.6	--	1	A
Aroclor 1260	59.3	P	ug/kg	34.4	--	1	B
Aroclor 1262	ND		ug/kg	17.2	--	1	A
Aroclor 1268	ND		ug/kg	17.2	--	1	A
PCBs, Total	59.3		ug/kg	34.4	--	1	B

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	67		30-150	A
Decachlorobiphenyl	62		30-150	A
2,4,5,6-Tetrachloro-m-xylene	63		30-150	B
Decachlorobiphenyl	70		30-150	B

Project Name: EAST BOSTON (CONCRETE)

Lab Number: L1703863

Project Number: 43068

Report Date: 02/14/17

**SAMPLE RESULTS**

Lab ID: L1703863-03  
 Client ID: VES-TRANS-N  
 Sample Location: EAST BOSTON  
 Matrix: Concrete  
 Analytical Method: 97,8082A  
 Analytical Date: 02/10/17 16:45  
 Analyst: HT  
 Percent Solids: 98%

Date Collected: 02/07/17 11:05  
 Date Received: 02/07/17  
 Field Prep: Not Specified  
 Extraction Method: EPA 3540C  
 Extraction Date: 02/09/17 03:40  
 Cleanup Method: EPA 3665A  
 Cleanup Date: 02/10/17  
 Cleanup Method: EPA 3660B  
 Cleanup Date: 02/10/17

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
<b>MCP Polychlorinated Biphenyls - Westborough Lab</b>							
Aroclor 1016	ND		ug/kg	54.0	--	1	A
Aroclor 1221	ND		ug/kg	54.0	--	1	A
Aroclor 1232	ND		ug/kg	54.0	--	1	A
Aroclor 1242	ND		ug/kg	54.0	--	1	A
Aroclor 1248	ND		ug/kg	36.0	--	1	A
Aroclor 1254	ND		ug/kg	54.0	--	1	B
Aroclor 1260	116		ug/kg	36.0	--	1	A
Aroclor 1262	ND		ug/kg	18.0	--	1	A
Aroclor 1268	144		ug/kg	18.0	--	1	A
PCBs, Total	260		ug/kg	54.0	--	1	B

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	71		30-150	A
Decachlorobiphenyl	82		30-150	A
2,4,5,6-Tetrachloro-m-xylene	71		30-150	B
Decachlorobiphenyl	80		30-150	B

**Project Name:** EAST BOSTON (CONCRETE)  
**Project Number:** 43068

**Lab Number:** L1703863  
**Report Date:** 02/14/17

**SAMPLE RESULTS**

Lab ID: L1703863-04  
Client ID: VES-TRANS-SE  
Sample Location: EAST BOSTON  
Matrix: Concrete  
Analytical Method: 97,8082A  
Analytical Date: 02/10/17 17:01  
Analyst: HT  
Percent Solids: 97%

Date Collected: 02/07/17 11:10  
Date Received: 02/07/17  
Field Prep: Not Specified  
Extraction Method: EPA 3540C  
Extraction Date: 02/09/17 03:40  
Cleanup Method: EPA 3665A  
Cleanup Date: 02/10/17  
Cleanup Method: EPA 3660B  
Cleanup Date: 02/10/17

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
<b>MCP Polychlorinated Biphenyls - Westborough Lab</b>							
Aroclor 1016	ND		ug/kg	53.6	--	1	A
Aroclor 1221	ND		ug/kg	53.6	--	1	A
Aroclor 1232	ND		ug/kg	53.6	--	1	A
Aroclor 1242	ND		ug/kg	53.6	--	1	A
Aroclor 1248	ND		ug/kg	35.7	--	1	A
Aroclor 1254	ND		ug/kg	53.6	--	1	A
Aroclor 1260	ND		ug/kg	35.7	--	1	A
Aroclor 1262	ND		ug/kg	17.9	--	1	A
Aroclor 1268	ND		ug/kg	17.9	--	1	A
PCBs, Total	ND		ug/kg	17.9	--	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	87		30-150	A
Decachlorobiphenyl	106		30-150	A
2,4,5,6-Tetrachloro-m-xylene	94		30-150	B
Decachlorobiphenyl	103		30-150	B

Project Name: EAST BOSTON (CONCRETE)

Lab Number: L1703863

Project Number: 43068

Report Date: 02/14/17

**SAMPLE RESULTS**

Lab ID: L1703863-05  
 Client ID: VES-TRANS-SW  
 Sample Location: EAST BOSTON  
 Matrix: Concrete  
 Analytical Method: 97,8082A  
 Analytical Date: 02/10/17 17:18  
 Analyst: HT  
 Percent Solids: 99%

Date Collected: 02/07/17 11:15  
 Date Received: 02/07/17  
 Field Prep: Not Specified  
 Extraction Method: EPA 3540C  
 Extraction Date: 02/09/17 03:40  
 Cleanup Method: EPA 3665A  
 Cleanup Date: 02/10/17  
 Cleanup Method: EPA 3660B  
 Cleanup Date: 02/10/17

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
<b>MCP Polychlorinated Biphenyls - Westborough Lab</b>							
Aroclor 1016	ND		ug/kg	53.6	--	1	A
Aroclor 1221	ND		ug/kg	53.6	--	1	A
Aroclor 1232	ND		ug/kg	53.6	--	1	A
Aroclor 1242	ND		ug/kg	53.6	--	1	A
Aroclor 1248	ND		ug/kg	35.7	--	1	A
Aroclor 1254	ND		ug/kg	53.6	--	1	A
Aroclor 1260	ND		ug/kg	35.7	--	1	B
Aroclor 1262	ND		ug/kg	17.9	--	1	A
Aroclor 1268	ND		ug/kg	17.9	--	1	A
PCBs, Total	ND		ug/kg	35.7	--	1	B

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	81		30-150	A
Decachlorobiphenyl	87		30-150	A
2,4,5,6-Tetrachloro-m-xylene	90		30-150	B
Decachlorobiphenyl	82		30-150	B

**Project Name:** EAST BOSTON (CONCRETE)  
**Project Number:** 43068

**Lab Number:** L1703863  
**Report Date:** 02/14/17

### Method Blank Analysis Batch Quality Control

Analytical Method: 97,8082A  
Analytical Date: 02/10/17 15:40  
Analyst: AF

Extraction Method: EPA 3540C  
Extraction Date: 02/09/17 03:40  
Cleanup Method: EPA 3665A  
Cleanup Date: 02/10/17  
Cleanup Method: EPA 3660B  
Cleanup Date: 02/10/17

Parameter	Result	Qualifier	Units	RL	MDL	Column
MCP Polychlorinated Biphenyls - Westborough Lab for sample(s):	01,03-05			Batch:	WG976592-1	
Aroclor 1016	ND		ug/kg	52.9	--	A
Aroclor 1221	ND		ug/kg	52.9	--	A
Aroclor 1232	ND		ug/kg	52.9	--	A
Aroclor 1242	ND		ug/kg	52.9	--	A
Aroclor 1248	ND		ug/kg	35.3	--	A
Aroclor 1254	ND		ug/kg	52.9	--	A
Aroclor 1260	ND		ug/kg	35.3	--	A
Aroclor 1262	ND		ug/kg	17.6	--	A
Aroclor 1268	ND		ug/kg	17.6	--	A
PCBs, Total	ND		ug/kg	17.6	--	A

Surrogate	%Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	92		30-150	A
Decachlorobiphenyl	95		30-150	A
2,4,5,6-Tetrachloro-m-xylene	94		30-150	B
Decachlorobiphenyl	87		30-150	B

**Project Name:** EAST BOSTON (CONCRETE)  
**Project Number:** 43068

**Lab Number:** L1703863  
**Report Date:** 02/14/17

### Method Blank Analysis Batch Quality Control

Analytical Method: 97,8082A  
Analytical Date: 02/11/17 21:46  
Analyst: JW

Extraction Method: EPA 3540C  
Extraction Date: 02/10/17 18:50  
Cleanup Method: EPA 3665A  
Cleanup Date: 02/11/17  
Cleanup Method: EPA 3660B  
Cleanup Date: 02/11/17

Parameter	Result	Qualifier	Units	RL	MDL	Column
MCP Polychlorinated Biphenyls - Westborough Lab for sample(s):	02			Batch:	WG976759-1	
Aroclor 1016	ND		ug/kg	51.4	--	A
Aroclor 1221	ND		ug/kg	51.4	--	A
Aroclor 1232	ND		ug/kg	51.4	--	A
Aroclor 1242	ND		ug/kg	51.4	--	A
Aroclor 1248	ND		ug/kg	34.2	--	A
Aroclor 1254	ND		ug/kg	51.4	--	A
Aroclor 1260	ND		ug/kg	34.2	--	A
Aroclor 1262	ND		ug/kg	17.1	--	A
Aroclor 1268	ND		ug/kg	17.1	--	A
PCBs, Total	ND		ug/kg	17.1	--	A

Surrogate	%Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	84		30-150	A
Decachlorobiphenyl	65		30-150	A
2,4,5,6-Tetrachloro-m-xylene	82		30-150	B
Decachlorobiphenyl	75		30-150	B

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** EAST BOSTON (CONCRETE)  
**Project Number:** 43068

**Lab Number:** L1703863  
**Report Date:** 02/14/17

<b>Parameter</b>	<i>LCS</i>	<i>LCSD</i>	%Recovery		%Recovery	<i>RPD</i>	<i>Qual</i>	<i>RPD</i>	<i>Column</i>
	%Recovery	Qual	%Recovery	Qual	Limits			Limits	
MCP Polychlorinated Biphenyls - Westborough Lab Associated sample(s): 01,03-05 Batch: WG976592-2 WG976592-3									
Aroclor 1016	78		72		40-140	8		30	A
Aroclor 1260	90		82		40-140	9		30	A

<b>Surrogate</b>	<i>LCS</i>	<i>LCSD</i>	%Recovery		<i>Acceptance Criteria</i>	<i>Column</i>
	%Recovery	Qual	%Recovery	Qual	Criteria	
2,4,5,6-Tetrachloro-m-xylene	82		79		30-150	A
Decachlorobiphenyl	91		89		30-150	A
2,4,5,6-Tetrachloro-m-xylene	86		84		30-150	B
Decachlorobiphenyl	80		78		30-150	B

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** EAST BOSTON (CONCRETE)  
**Project Number:** 43068

**Lab Number:** L1703863  
**Report Date:** 02/14/17

<b>Parameter</b>	<i>LCS</i>	<i>LCSD</i>	%Recovery		%Recovery	<i>RPD</i>	<i>Qual</i>	<i>RPD</i>	<i>Column</i>
	%Recovery	Qual	%Recovery	Qual	Limits			Limits	
MCP Polychlorinated Biphenyls - Westborough Lab Associated sample(s): 02 Batch: WG976759-2 WG976759-3									
Aroclor 1016	80		91		40-140	13		30	A
Aroclor 1260	76		91		40-140	18		30	A

<b>Surrogate</b>	<i>LCS</i>	<i>LCSD</i>	%Recovery		<i>Acceptance Criteria</i>	<i>Column</i>
	%Recovery	Qual	%Recovery	Qual	Criteria	
2,4,5,6-Tetrachloro-m-xylene	77		92		30-150	A
Decachlorobiphenyl	60		74		30-150	A
2,4,5,6-Tetrachloro-m-xylene	74		88		30-150	B
Decachlorobiphenyl	62		76		30-150	B

# **INORGANICS & MISCELLANEOUS**



**Project Name:** EAST BOSTON (CONCRETE)  
**Project Number:** 43068

**Lab Number:** L1703863  
**Report Date:** 02/14/17

### SAMPLE RESULTS

Lab ID:	L1703863-01	Date Collected:	02/07/17 09:50
Client ID:	VES-MAINT-N	Date Received:	02/07/17
Sample Location:	EAST BOSTON	Field Prep:	Not Specified
Matrix:	Concrete		

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>General Chemistry - Westborough Lab</b>										
Solids, Total	98.0		%	0.100	NA	1	-	02/08/17 10:49	121,2540G	RI

**Project Name:** EAST BOSTON (CONCRETE)  
**Project Number:** 43068

**Lab Number:** L1703863  
**Report Date:** 02/14/17

### SAMPLE RESULTS

Lab ID: L1703863-02  
Client ID: VES-MAINT-S  
Sample Location: EAST BOSTON  
Matrix: Concrete

Date Collected: 02/07/17 10:05  
Date Received: 02/07/17  
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>General Chemistry - Westborough Lab</b>										
Solids, Total	98.9		%	0.100	NA	1	-	02/08/17 10:49	121,2540G	RI

**Project Name:** EAST BOSTON (CONCRETE)  
**Project Number:** 43068

**Lab Number:** L1703863  
**Report Date:** 02/14/17

### SAMPLE RESULTS

Lab ID: L1703863-03  
Client ID: VES-TRANS-N  
Sample Location: EAST BOSTON  
Matrix: Concrete

Date Collected: 02/07/17 11:05  
Date Received: 02/07/17  
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>General Chemistry - Westborough Lab</b>										
Solids, Total	98.4		%	0.100	NA	1	-	02/08/17 10:49	121,2540G	RI

**Project Name:** EAST BOSTON (CONCRETE)  
**Project Number:** 43068

**Lab Number:** L1703863  
**Report Date:** 02/14/17

### SAMPLE RESULTS

Lab ID: L1703863-04  
Client ID: VES-TRANS-SE  
Sample Location: EAST BOSTON  
Matrix: Concrete

Date Collected: 02/07/17 11:10  
Date Received: 02/07/17  
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>General Chemistry - Westborough Lab</b>										
Solids, Total	96.7		%	0.100	NA	1	-	02/08/17 10:49	121,2540G	RI

**Project Name:** EAST BOSTON (CONCRETE)  
**Project Number:** 43068

**Lab Number:** L1703863  
**Report Date:** 02/14/17

### SAMPLE RESULTS

Lab ID: L1703863-05  
Client ID: VES-TRANS-SW  
Sample Location: EAST BOSTON  
Matrix: Concrete

Date Collected: 02/07/17 11:15  
Date Received: 02/07/17  
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>General Chemistry - Westborough Lab</b>										
Solids, Total	98.7		%	0.100	NA	1	-	02/08/17 10:49	121,2540G	RI

**Project Name:** EAST BOSTON (CONCRETE)  
**Project Number:** 43068

**Lab Number:** L1703863  
**Report Date:** 02/14/17

### Sample Receipt and Container Information

Were project specific reporting limits specified? YES

#### Cooler Information Custody Seal

##### Cooler

A Absent

#### Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L1703863-01A	Glass 120ml/4oz unpreserved	A	N/A	3.9	Y	Absent	TS(7),MCP-8082LL-CNCRT(365)
L1703863-02A	Glass 120ml/4oz unpreserved	A	N/A	3.9	Y	Absent	TS(7),MCP-8082LL-CNCRT(365)
L1703863-03A	Glass 120ml/4oz unpreserved	A	N/A	3.9	Y	Absent	TS(7),MCP-8082LL-CNCRT(365)
L1703863-04A	Glass 120ml/4oz unpreserved	A	N/A	3.9	Y	Absent	TS(7),MCP-8082LL-CNCRT(365)
L1703863-05A	Glass 120ml/4oz unpreserved	A	N/A	3.9	Y	Absent	TS(7),MCP-8082LL-CNCRT(365)

\*Values in parentheses indicate holding time in days

**Project Name:** EAST BOSTON (CONCRETE)  
**Project Number:** 43068

**Lab Number:** L1703863  
**Report Date:** 02/14/17

## GLOSSARY

### **Acronyms**

EDL	- Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).
EPA	- Environmental Protection Agency.
LCS	- Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCSD	- Laboratory Control Sample Duplicate: Refer to LCS.
LFB	- Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
MDL	- Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
MS	- Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available.
MSD	- Matrix Spike Sample Duplicate: Refer to MS.
NA	- Not Applicable.
NC	- Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
NDPA/DPA	- N-Nitrosodiphenylamine/Diphenylamine.
NI	- Not Ignitable.
NP	- Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.
RL	- Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
RPD	- Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.
SRM	- Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.
STLP	- Semi-dynamic Tank Leaching Procedure per EPA Method 1315.
TIC	- Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

### **Footnotes**

- 1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

### **Terms**

**Total:** With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

**Analytical Method:** Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

### **Data Qualifiers**

- A** - Spectra identified as "Aldol Condensation Product".
- B** - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the

**Report Format:** Data Usability Report



**Project Name:** EAST BOSTON (CONCRETE)  
**Project Number:** 43068

**Lab Number:** L1703863  
**Report Date:** 02/14/17

**Data Qualifiers**

- reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).
- C** - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.
- D** - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.
- E** - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.
- G** - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.
- H** - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.
- I** - The lower value for the two columns has been reported due to obvious interference.
- M** - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.
- NJ** - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.
- P** - The RPD between the results for the two columns exceeds the method-specified criteria.
- Q** - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)
- R** - Analytical results are from sample re-analysis.
- RE** - Analytical results are from sample re-extraction.
- S** - Analytical results are from modified screening analysis.
- J** - Estimated value. This represents an estimated concentration for Tentatively Identified Compounds (TICs).
- ND** - Not detected at the reporting limit (RL) for the sample.

*Report Format:* Data Usability Report



**Project Name:** EAST BOSTON (CONCRETE)  
**Project Number:** 43068

**Lab Number:** L1703863  
**Report Date:** 02/14/17

## REFERENCES

- 97 EPA Test Methods (SW-846) with QC Requirements & Performance Standards for the Analysis of EPA SW-846 Methods under the Massachusetts Contingency Plan, WSC-CAM-IIA, IIB, IIIA, IIIB, IIIC, IID, VA, VB, VC, VIA, VIB, VIIIA and VIIIB, July 2010.
- 121 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. Standard Methods Online.

## LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at its own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.



## Certification Information

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**The following analytes are not included in our Primary NELAP Scope of Accreditation:**

**Westborough Facility**

EPA 624: m/p-xylene, o-xylene

EPA 8260C: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), Methyl methacrylate, 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.

EPA 8270D: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.

EPA 300: DW: Bromide

EPA 6860: NPW and SCM: Perchlorate

EPA 9010: NPW and SCM: Amenable Cyanide Distillation

EPA 9012B: NPW: Total Cyanide

EPA 9050A: NPW: Specific Conductance

SM3500: NPW: Ferrous Iron

SM4500: NPW: Amenable Cyanide, Dissolved Oxygen; SCM: Total Phosphorus, TKN, NO<sub>2</sub>, NO<sub>3</sub>.

SM5310C: DW: Dissolved Organic Carbon

**Mansfield Facility**

SM 2540D: TSS

EPA 3005A NPW

EPA 8082A: NPW: PCB: 1, 5, 31, 87, 101, 110, 141, 151, 153, 180, 183, 187.

EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.

**Biological Tissue Matrix**: EPA 3050B

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**The following analytes are included in our Massachusetts DEP Scope of Accreditation**

**Westborough Facility:**

**Drinking Water**

EPA 300.0: Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C**, **SM4500CN-CE**, **EPA 180.1**,

**SM2130B**, **SM4500CI-D**, **SM2320B**, **SM2540C**, **SM4500H-B**

EPA 332: Perchlorate; **EPA 524.2**: THMs and VOCs; **EPA 504.1**: EDB, DBCP.

Microbiology: **SM9215B**; **SM9223-P/A**, **SM9223B-Colilert-QT**, **SM9222D**.

**Non-Potable Water**

**SM4500H,B**, **EPA 120.1**, **SM2510B**, **SM2540C**, **SM2320B**, **SM4500CL-E**, **SM4500F-BC**, **SM4500NH3-BH**, **EPA 350.1**: Ammonia-N, LACHAT 10-107-06-1-B: Ammonia-N, **SM4500NO3-F**, **EPA 353.2**: Nitrate-N, **EPA 351.1**, **SM4500P-E**, **SM4500P-B**, **E**, **SM4500SO4-E**, **SM5220D**, **EPA 410.4**, **SM5210B**, **SM5310C**, **SM4500CL-D**, **EPA 1664**, **EPA 420.1**, **SM4500-CN-CE**, **SM2540D**.

EPA 624: Volatile Halocarbons & Aromatics,

EPA 608: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs

EPA 625: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045**: PCB-Oil.

Microbiology: **SM9223B-Colilert-QT**; **Enterolert-QT**, **SM9221E**.

**Mansfield Facility:**

**Drinking Water**

EPA 200.7: Ba, Be, Cd, Cr, Cu, Ni, Na, Ca. **EPA 200.8**: Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Ni, Se, TL. **EPA 245.1 Hg**.

**Non-Potable Water**

EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.

EPA 200.8: Al, Sb, As, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn.

EPA 245.1 Hg.

**SM2340B**

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For a complete listing of analytes and methods, please contact your Alpha Project Manager.



8 Walkup Drive  
Westboro, MA 01581  
Tel: 508-898-9220

# CHAIN OF CUSTODY

PAGE 1 OF 1

Date Rec'd in Lab:

2/7/17

ALPHA Job #: L1703863

320 Forbes Blvd  
Mansfield, MA 02048  
Tel: 508-822-9300

## Client Information

Client: VERTEX  
Address: 1 Congress St, 10th Flr  
Boston MA  
Phone: 781-974-7595  
Email: bs.volmer@vertexxeng.com

## Additional Project Information:

## Project Information

Project Name: East Boston (Concrete)

Project Location: East Boston

Project #: 110368 43068

Project Manager: B. Gibbons

ALPHA Quote #:

## Turn-Around Time

 Standard       RUSH (only confirmed if pre-approved)

Date Due:

## Report Information - Data Deliverables

 ADEX       EMAIL

## Billing Information

 Same as Client Info      PO #:

## Regulatory Requirements &amp; Project Information Requirements

- Yes  No MA MCP Analytical Methods       Yes  No CT RCP Analytical Methods  
 Yes  No Matrix Spike Required on this SDG? (Required for MCP Inorganics)  
 Yes  No GW1 Standards (Info Required for Metals & EPH with Targets)  
 Yes  No NPDES RGP  
 Other State /Fed Program \_\_\_\_\_ Criteria

ANALYSIS	SAMPLE INFO										TOTAL #					
	VOC: <input type="checkbox"/> 8260	<input type="checkbox"/> 624	<input type="checkbox"/> 524.2	SVOC: <input type="checkbox"/> ABN	<input type="checkbox"/> PAH	METALS: <input type="checkbox"/> MCP 13	<input type="checkbox"/> MCP 14	<input type="checkbox"/> RCRP 15	<input type="checkbox"/> PP13	EPH: <input type="checkbox"/> RCRAS	<input type="checkbox"/> Ranges & Targets	<input type="checkbox"/> Ranges Only	<input type="checkbox"/> PCB	<input type="checkbox"/> PEST	<input type="checkbox"/> TPH: <input type="checkbox"/> Quant Only	<input type="checkbox"/> Fingerprint
											X	X	X	X	Total Solids	

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection		Sample Matrix	Sampler Initials
		Date	Time		
03863-01	VES - Maint - N	2/7/17	9:50	X	
02	VES - Maint - S	2/7/17	10:05	X	
03	VES - Trans - N	2/7/17	11:05	X	
04	VES - Trans - SE	2/7/17	11:10	X	
05	VES - Trans - SW	2/7/17	11:15	X	

**Container Type**  
 P= Plastic  
 A= Amber glass  
 V= Vial  
 G= Glass  
 B= Bacteria cup  
 C= Cube  
 O= Other  
 E= Encore  
 D= BOD Bottle

**Preservative**  
 A= None  
 B= HCl  
 C= HNO<sub>3</sub>  
 D= H<sub>2</sub>SO<sub>4</sub>  
 E= NaOH  
 F= MeOH  
 G= NaHSO<sub>4</sub>  
 H= Na<sub>2</sub>S<sub>2</sub>O<sub>3</sub>  
 I= Ascorbic Acid  
 J= NH<sub>4</sub>Cl  
 K= Zn Acetate  
 O= Other

Container Type

A

A

Preservative

A

A

Relinquished By:	Date/Time	Received By:	Date/Time
<i>B. Gibbons</i>	2/7/17 14:26	<i>John S. Drury</i>	2/7/17 14:26
<i>John S. Drury</i>	2/7/17 17:45	<i>John S. Drury</i>	2/7/17 17:45

All samples submitted are subject to  
Alpha's Terms and Conditions.  
See reverse side.

FORM NO: 01-01 (rev. 12-Mar-2012)



## CHAIN OF CUSTODY

PAGE 1 OF 1

Date Rec'd in Lab: 2/7/17

ALPHA Job #: L1703863

8 Walkup Drive  
Westboro, MA 01581  
Tel: 508-898-9220

320 Forbes Blvd  
Mansfield, MA 02048  
Tel: 508-822-9300

## Client Information

Client: VERTEX  
Address: 1 Congress St, 10th Flr  
Boston MA  
Phone: 781-974-7595  
Email: bs.volmer@vertexxeng.com

## Additional Project Information:

## Project Information

Project Name: East Boston (concrete)

Project Location: East Boston

Project #: 40368

Project Manager: B. Gibbons

ALPHA Quote #:

## Turn-Around Time

 Standard     RUSH (only confirmed if pre-approved)

Date Due:

## Report Information - Data Deliverables

 ADEX     EMAIL

## Billing Information

 Same as Client Info    PO #:

## Regulatory Requirements &amp; Project Information Requirements

- Yes  No MA MCP Analytical Methods     Yes  No CT RCP Analytical Methods
- Yes  No Matrix Spike Required on this SDG? (Required for MCP Inorganics)
- Yes  No GW1 Standards (Info Required for Metals & EPH with Targets)
- Yes  No NPDES RGP
- Other State /Fed Program \_\_\_\_\_ Criteria

ANALYSIS										SAMPLE INFO		TOTAL #
VOC: <input type="checkbox"/> 8260	<input type="checkbox"/> 624	<input type="checkbox"/> 524.2								Filtration		
SVOC: <input type="checkbox"/> ABN	<input type="checkbox"/> PAH									Field		
METALS: <input type="checkbox"/> MCP 13	<input type="checkbox"/> MCP 14	<input type="checkbox"/> RCRP 15								Lab to do		
EPH: <input type="checkbox"/> RCRAS	<input type="checkbox"/> RCRAS	<input type="checkbox"/> PP13								Preservation		
VPH: <input type="checkbox"/> Ranges & Targets	<input type="checkbox"/> Ranges Only									Lab to do		
PCB: <input type="checkbox"/> PEST	<input type="checkbox"/> Quant Only	<input type="checkbox"/> Fingerprint										
TPH: <input type="checkbox"/> Total Solids												

Sample Comments

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection		Sample Matrix	Sampler Initials
		Date	Time		
03863-01	VES - Maint - N	2/7/17	9:50	X	
02	VES - Maint - S	2/7/17	10:05	X	
03	VES - Trans - N	2/7/17	11:05	X	
04	VES - Trans - SE	2/7/17	11:10	X	
05	VES - Trans - SW	2/7/17	11:15	X	

Container Type  
P= Plastic  
A= Amber glass  
V= Vial  
G= Glass  
B= Bacteria cup  
C= Cube  
O= Other  
E= Encore  
D= BOD Bottle

Preservative  
A= None  
B= HCl  
C= HNO<sub>3</sub>  
D= H<sub>2</sub>SO<sub>4</sub>  
E= NaOH  
F= MeOH  
G= NaHSO<sub>4</sub>  
H= Na<sub>2</sub>S<sub>2</sub>O<sub>3</sub>  
I= Ascorbic Acid  
J= NH<sub>4</sub>Cl  
K= Zn Acetate  
O= Other

Container Type

A

A

Preservative

A

A

Relinquished By:	Date/Time	Received By:	Date/Time
<i>B. Gibbons</i>	2/7/17 14:26	<i>John Dwyer</i>	2/7/17 14:26
<i>John Dwyer</i>	2/7/17 17:45	<i>John Dwyer</i>	2/7/17 17:45

All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.

FORM NO: 01-01 (rev. 12-Mar-2012)



## ANALYTICAL REPORT

Lab Number:	L1704354
Client:	Vertex Environmental Services, Inc. 400 Libbey Pkwy Weymouth, MA 02184
ATTN:	Bill Gibbons
Phone:	(617) 830-1540
Project Name:	EAST BOSTON
Project Number:	43068
Report Date:	02/17/17

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**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704354  
**Report Date:** 02/17/17

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L1704354-01	VES-103 (1-2)	SOIL	MA	02/10/17 08:30	02/10/17
L1704354-02	VES-108 (6-8)	SOIL	MA	02/10/17 13:45	02/10/17
L1704354-03	VES-108 (16-18)	SOIL	MA	02/10/17 13:50	02/10/17
L1704354-04	VES-123 (0-2)	SOIL	MA	02/10/17 10:30	02/10/17
L1704354-05	VES-119 (0-2)	SOIL	MA	02/10/17 12:30	02/10/17
L1704354-06	VES-109 (0-2)	SOIL	MA	02/10/17 13:30	02/10/17

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704354  
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### MADEP MCP Response Action Analytical Report Certification

This form provides certifications for all samples performed by MCP methods. Please refer to the Sample Results and Container Information sections of this report for specification of MCP methods used for each analysis. The following questions pertain only to MCP Analytical Methods.

<b>An affirmative response to questions A through F is required for "Presumptive Certainty" status</b>		
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
B	Were the analytical method(s) and all associated QC requirements specified in the selected CAM protocol(s) followed?	YES
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
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
E a.	VPH, EPH, and APH Methods only: Was each method conducted without significant modification(s)? (Refer to the individual method(s) for a list of significant modifications).	YES
E b.	APH and TO-15 Methods only: Was the complete analyte list reported for each method?	N/A
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

<b>A response to questions G, H and I is required for "Presumptive Certainty" status</b>		
G	Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocol(s)?	YES
H	Were all QC performance standards specified in the CAM protocol(s) achieved?	NO
I	Were results reported for the complete analyte list specified in the selected CAM protocol(s)?	NO

**For any questions answered "No", please refer to the case narrative section on the following page(s).**

Please note that sample matrix information is located in the Sample Results section of this report.



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### Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively. When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. All specific QC information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated usability implications. Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances the specific failure is not narrated but noted in the associated QC table. The information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated usability implications.

Please see the associated ADEx data file for a comparison of laboratory reporting limits that were achieved with the regulatory Numerical Standards requested on the Chain of Custody.

#### HOLD POLICY

For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Client Service Representative and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Client Services at 800-624-9220 with any questions.

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### Case Narrative (continued)

#### MCP Related Narratives

Sample Receipt

In reference to question H:

A Matrix Spike was not submitted for the analysis of Metals.

#### Volatile Organics

Copies of the continuing calibration standards are included as an addendum to this report.

In reference to question H:

The initial calibration, associated with L1704354-01 through -06, did not meet the method required minimum response factor on the lowest calibration standard for 1,4-dioxane (0.0020), as well as the average response factor for 1,4-dioxane.

#### VPH

In reference to question I:

All samples were analyzed for a subset of MCP analytes per the Chain of Custody.

#### Metals

In reference to question I:

All samples were analyzed for a subset of MCP analytes per the Chain of Custody.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature:

Melissa Cripps

Title: Technical Director/Representative

Date: 02/17/17

# ORGANICS



# VOLATILES



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704354  
**Report Date:** 02/17/17

**SAMPLE RESULTS**

Lab ID:	L1704354-01	Date Collected:	02/10/17 08:30
Client ID:	VES-103 (1-2)	Date Received:	02/10/17
Sample Location:	MA	Field Prep:	Not Specified
Matrix:	Soil		
Analytical Method:	97,8260C		
Analytical Date:	02/15/17 20:46		
Analyst:	TE		
Percent Solids:	91%		

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics by 8260/5035 - Westborough Lab</b>						
Methylene chloride	ND	ug/kg	21	--	--	1
1,1-Dichloroethane	ND	ug/kg	3.2	--	--	1
Chloroform	ND	ug/kg	3.2	--	--	1
Carbon tetrachloride	ND	ug/kg	2.1	--	--	1
1,2-Dichloropropane	ND	ug/kg	7.4	--	--	1
Dibromochloromethane	ND	ug/kg	2.1	--	--	1
1,1,2-Trichloroethane	ND	ug/kg	3.2	--	--	1
Tetrachloroethene	ND	ug/kg	2.1	--	--	1
Chlorobenzene	ND	ug/kg	2.1	--	--	1
Trichlorofluoromethane	ND	ug/kg	8.4	--	--	1
1,2-Dichloroethane	ND	ug/kg	2.1	--	--	1
1,1,1-Trichloroethane	ND	ug/kg	2.1	--	--	1
Bromodichloromethane	ND	ug/kg	2.1	--	--	1
trans-1,3-Dichloropropene	ND	ug/kg	2.1	--	--	1
cis-1,3-Dichloropropene	ND	ug/kg	2.1	--	--	1
1,3-Dichloropropene, Total	ND	ug/kg	2.1	--	--	1
1,1-Dichloropropene	ND	ug/kg	8.4	--	--	1
Bromoform	ND	ug/kg	8.4	--	--	1
1,1,2,2-Tetrachloroethane	ND	ug/kg	2.1	--	--	1
Benzene	ND	ug/kg	2.1	--	--	1
Toluene	ND	ug/kg	3.2	--	--	1
Ethylbenzene	ND	ug/kg	2.1	--	--	1
Chloromethane	ND	ug/kg	8.4	--	--	1
Bromomethane	ND	ug/kg	4.2	--	--	1
Vinyl chloride	ND	ug/kg	4.2	--	--	1
Chloroethane	ND	ug/kg	4.2	--	--	1
1,1-Dichloroethene	ND	ug/kg	2.1	--	--	1
trans-1,2-Dichloroethene	ND	ug/kg	3.2	--	--	1
Trichloroethene	ND	ug/kg	2.1	--	--	1
1,2-Dichlorobenzene	ND	ug/kg	8.4	--	--	1



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704354  
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**SAMPLE RESULTS**

Lab ID:	L1704354-01	Date Collected:	02/10/17 08:30			
Client ID:	VES-103 (1-2)	Date Received:	02/10/17			
Sample Location:	MA	Field Prep:	Not Specified			
Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics by 8260/5035 - Westborough Lab</b>						
1,3-Dichlorobenzene	ND	ug/kg	8.4	--	1	
1,4-Dichlorobenzene	ND	ug/kg	8.4	--	1	
Methyl tert butyl ether	ND	ug/kg	4.2	--	1	
p/m-Xylene	ND	ug/kg	4.2	--	1	
o-Xylene	ND	ug/kg	4.2	--	1	
Xylenes, Total	ND	ug/kg	4.2	--	1	
cis-1,2-Dichloroethene	ND	ug/kg	2.1	--	1	
1,2-Dichloroethene, Total	ND	ug/kg	2.1	--	1	
Dibromomethane	ND	ug/kg	8.4	--	1	
1,2,3-Trichloropropane	ND	ug/kg	8.4	--	1	
Styrene	ND	ug/kg	4.2	--	1	
Dichlorodifluoromethane	ND	ug/kg	21	--	1	
Acetone	ND	ug/kg	76	--	1	
Carbon disulfide	ND	ug/kg	8.4	--	1	
Methyl ethyl ketone	ND	ug/kg	21	--	1	
Methyl isobutyl ketone	ND	ug/kg	21	--	1	
2-Hexanone	ND	ug/kg	21	--	1	
Bromochloromethane	ND	ug/kg	8.4	--	1	
Tetrahydrofuran	ND	ug/kg	8.4	--	1	
2,2-Dichloropropane	ND	ug/kg	10	--	1	
1,2-Dibromoethane	ND	ug/kg	8.4	--	1	
1,3-Dichloropropane	ND	ug/kg	8.4	--	1	
1,1,1,2-Tetrachloroethane	ND	ug/kg	2.1	--	1	
Bromobenzene	ND	ug/kg	10	--	1	
n-Butylbenzene	ND	ug/kg	2.1	--	1	
sec-Butylbenzene	ND	ug/kg	2.1	--	1	
tert-Butylbenzene	ND	ug/kg	8.4	--	1	
o-Chlorotoluene	ND	ug/kg	8.4	--	1	
p-Chlorotoluene	ND	ug/kg	8.4	--	1	
1,2-Dibromo-3-chloropropane	ND	ug/kg	8.4	--	1	
Hexachlorobutadiene	ND	ug/kg	8.4	--	1	
Isopropylbenzene	ND	ug/kg	2.1	--	1	
p-Isopropyltoluene	ND	ug/kg	2.1	--	1	
Naphthalene	ND	ug/kg	8.4	--	1	
n-Propylbenzene	ND	ug/kg	2.1	--	1	
1,2,3-Trichlorobenzene	ND	ug/kg	8.4	--	1	
1,2,4-Trichlorobenzene	ND	ug/kg	8.4	--	1	
1,3,5-Trimethylbenzene	ND	ug/kg	8.4	--	1	
1,2,4-Trimethylbenzene	ND	ug/kg	8.4	--	1	



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Lab Number: L1704354

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**SAMPLE RESULTS**

Lab ID: L1704354-01

Date Collected: 02/10/17 08:30

Client ID: VES-103 (1-2)

Date Received: 02/10/17

Sample Location: MA

Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics by 8260/5035 - Westborough Lab						
Diethyl ether	ND	ug/kg	10	--	--	1
Diisopropyl Ether	ND	ug/kg	8.4	--	--	1
Ethyl-Tert-Butyl-Ether	ND	ug/kg	8.4	--	--	1
Tertiary-Amyl Methyl Ether	ND	ug/kg	8.4	--	--	1
1,4-Dioxane	ND	ug/kg	84	--	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	110		70-130
Toluene-d8	103		70-130
4-Bromofluorobenzene	114		70-130
Dibromofluoromethane	100		70-130

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704354  
**Report Date:** 02/17/17

**SAMPLE RESULTS**

Lab ID: L1704354-02  
Client ID: VES-108 (6-8)  
Sample Location: MA  
Matrix: Soil  
Analytical Method: 97,8260C  
Analytical Date: 02/15/17 21:11  
Analyst: TE  
Percent Solids: 45%

Date Collected: 02/10/17 13:45  
Date Received: 02/10/17  
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics by 8260/5035 - Westborough Lab</b>						
Methylene chloride	ND	ug/kg	16	--	--	1
1,1-Dichloroethane	ND	ug/kg	2.5	--	--	1
Chloroform	ND	ug/kg	2.5	--	--	1
Carbon tetrachloride	ND	ug/kg	1.6	--	--	1
1,2-Dichloropropane	ND	ug/kg	5.8	--	--	1
Dibromochloromethane	ND	ug/kg	1.6	--	--	1
1,1,2-Trichloroethane	ND	ug/kg	2.5	--	--	1
Tetrachloroethene	ND	ug/kg	1.6	--	--	1
Chlorobenzene	ND	ug/kg	1.6	--	--	1
Trichlorofluoromethane	ND	ug/kg	6.6	--	--	1
1,2-Dichloroethane	ND	ug/kg	1.6	--	--	1
1,1,1-Trichloroethane	ND	ug/kg	1.6	--	--	1
Bromodichloromethane	ND	ug/kg	1.6	--	--	1
trans-1,3-Dichloropropene	ND	ug/kg	1.6	--	--	1
cis-1,3-Dichloropropene	ND	ug/kg	1.6	--	--	1
1,3-Dichloropropene, Total	ND	ug/kg	1.6	--	--	1
1,1-Dichloropropene	ND	ug/kg	6.6	--	--	1
Bromoform	ND	ug/kg	6.6	--	--	1
1,1,2,2-Tetrachloroethane	ND	ug/kg	1.6	--	--	1
Benzene	ND	ug/kg	1.6	--	--	1
Toluene	33	ug/kg	2.5	--	--	1
Ethylbenzene	2.2	ug/kg	1.6	--	--	1
Chloromethane	ND	ug/kg	6.6	--	--	1
Bromomethane	ND	ug/kg	3.3	--	--	1
Vinyl chloride	ND	ug/kg	3.3	--	--	1
Chloroethane	ND	ug/kg	3.3	--	--	1
1,1-Dichloroethene	ND	ug/kg	1.6	--	--	1
trans-1,2-Dichloroethene	ND	ug/kg	2.5	--	--	1
Trichloroethene	ND	ug/kg	1.6	--	--	1
1,2-Dichlorobenzene	ND	ug/kg	6.6	--	--	1



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704354  
**Report Date:** 02/17/17

**SAMPLE RESULTS**

Lab ID:	L1704354-02	Date Collected:	02/10/17 13:45			
Client ID:	VES-108 (6-8)	Date Received:	02/10/17			
Sample Location:	MA	Field Prep:	Not Specified			
Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics by 8260/5035 - Westborough Lab</b>						
1,3-Dichlorobenzene	ND	ug/kg	6.6	--	1	
1,4-Dichlorobenzene	ND	ug/kg	6.6	--	1	
Methyl tert butyl ether	ND	ug/kg	3.3	--	1	
p/m-Xylene	ND	ug/kg	3.3	--	1	
o-Xylene	ND	ug/kg	3.3	--	1	
Xylenes, Total	ND	ug/kg	3.3	--	1	
cis-1,2-Dichloroethene	ND	ug/kg	1.6	--	1	
1,2-Dichloroethene, Total	ND	ug/kg	1.6	--	1	
Dibromomethane	ND	ug/kg	6.6	--	1	
1,2,3-Trichloropropane	ND	ug/kg	6.6	--	1	
Styrene	ND	ug/kg	3.3	--	1	
Dichlorodifluoromethane	ND	ug/kg	16	--	1	
Acetone	62	ug/kg	59	--	1	
Carbon disulfide	23	ug/kg	6.6	--	1	
Methyl ethyl ketone	ND	ug/kg	16	--	1	
Methyl isobutyl ketone	ND	ug/kg	16	--	1	
2-Hexanone	ND	ug/kg	16	--	1	
Bromochloromethane	ND	ug/kg	6.6	--	1	
Tetrahydrofuran	ND	ug/kg	6.6	--	1	
2,2-Dichloropropane	ND	ug/kg	8.2	--	1	
1,2-Dibromoethane	ND	ug/kg	6.6	--	1	
1,3-Dichloropropane	ND	ug/kg	6.6	--	1	
1,1,1,2-Tetrachloroethane	ND	ug/kg	1.6	--	1	
Bromobenzene	ND	ug/kg	8.2	--	1	
n-Butylbenzene	ND	ug/kg	1.6	--	1	
sec-Butylbenzene	ND	ug/kg	1.6	--	1	
tert-Butylbenzene	ND	ug/kg	6.6	--	1	
o-Chlorotoluene	ND	ug/kg	6.6	--	1	
p-Chlorotoluene	ND	ug/kg	6.6	--	1	
1,2-Dibromo-3-chloropropane	ND	ug/kg	6.6	--	1	
Hexachlorobutadiene	ND	ug/kg	6.6	--	1	
Isopropylbenzene	ND	ug/kg	1.6	--	1	
p-Isopropyltoluene	ND	ug/kg	1.6	--	1	
Naphthalene	ND	ug/kg	6.6	--	1	
n-Propylbenzene	ND	ug/kg	1.6	--	1	
1,2,3-Trichlorobenzene	ND	ug/kg	6.6	--	1	
1,2,4-Trichlorobenzene	ND	ug/kg	6.6	--	1	
1,3,5-Trimethylbenzene	ND	ug/kg	6.6	--	1	
1,2,4-Trimethylbenzene	ND	ug/kg	6.6	--	1	

Project Name: EAST BOSTON

Lab Number: L1704354

Project Number: 43068

Report Date: 02/17/17

**SAMPLE RESULTS**

Lab ID: L1704354-02

Date Collected: 02/10/17 13:45

Client ID: VES-108 (6-8)

Date Received: 02/10/17

Sample Location: MA

Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics by 8260/5035 - Westborough Lab						
Diethyl ether	ND		ug/kg	8.2	--	1
Diisopropyl Ether	ND		ug/kg	6.6	--	1
Ethyl-Tert-Butyl-Ether	ND		ug/kg	6.6	--	1
Tertiary-Amyl Methyl Ether	ND		ug/kg	6.6	--	1
1,4-Dioxane	ND		ug/kg	66	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	113		70-130
Toluene-d8	100		70-130
4-Bromofluorobenzene	113		70-130
Dibromofluoromethane	102		70-130

Project Name: EAST BOSTON

Lab Number: L1704354

Project Number: 43068

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**SAMPLE RESULTS**

Lab ID: L1704354-03  
 Client ID: VES-108 (16-18)  
 Sample Location: MA  
 Matrix: Soil  
 Analytical Method: 97,8260C  
 Analytical Date: 02/16/17 10:23  
 Analyst: JC  
 Percent Solids: 72%

Date Collected: 02/10/17 13:50  
 Date Received: 02/10/17  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics by 8260/5035 - Westborough Lab</b>						
Methylene chloride	ND	ug/kg	7.7	--	--	1
1,1-Dichloroethane	ND	ug/kg	1.2	--	--	1
Chloroform	ND	ug/kg	1.2	--	--	1
Carbon tetrachloride	ND	ug/kg	0.77	--	--	1
1,2-Dichloropropane	ND	ug/kg	2.7	--	--	1
Dibromochloromethane	ND	ug/kg	0.77	--	--	1
1,1,2-Trichloroethane	ND	ug/kg	1.2	--	--	1
Tetrachloroethene	ND	ug/kg	0.77	--	--	1
Chlorobenzene	ND	ug/kg	0.77	--	--	1
Trichlorofluoromethane	ND	ug/kg	3.1	--	--	1
1,2-Dichloroethane	ND	ug/kg	0.77	--	--	1
1,1,1-Trichloroethane	ND	ug/kg	0.77	--	--	1
Bromodichloromethane	ND	ug/kg	0.77	--	--	1
trans-1,3-Dichloropropene	ND	ug/kg	0.77	--	--	1
cis-1,3-Dichloropropene	ND	ug/kg	0.77	--	--	1
1,3-Dichloropropene, Total	ND	ug/kg	0.77	--	--	1
1,1-Dichloropropene	ND	ug/kg	3.1	--	--	1
Bromoform	ND	ug/kg	3.1	--	--	1
1,1,2,2-Tetrachloroethane	ND	ug/kg	0.77	--	--	1
Benzene	ND	ug/kg	0.77	--	--	1
Toluene	ND	ug/kg	1.2	--	--	1
Ethylbenzene	ND	ug/kg	0.77	--	--	1
Chloromethane	ND	ug/kg	3.1	--	--	1
Bromomethane	ND	ug/kg	1.5	--	--	1
Vinyl chloride	ND	ug/kg	1.5	--	--	1
Chloroethane	ND	ug/kg	1.5	--	--	1
1,1-Dichloroethene	ND	ug/kg	0.77	--	--	1
trans-1,2-Dichloroethene	ND	ug/kg	1.2	--	--	1
Trichloroethene	ND	ug/kg	0.77	--	--	1
1,2-Dichlorobenzene	ND	ug/kg	3.1	--	--	1



**Project Name:** EAST BOSTON  
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**Report Date:** 02/17/17

**SAMPLE RESULTS**

Lab ID:	L1704354-03	Date Collected:	02/10/17 13:50			
Client ID:	VES-108 (16-18)	Date Received:	02/10/17			
Sample Location:	MA	Field Prep:	Not Specified			
Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics by 8260/5035 - Westborough Lab</b>						
1,3-Dichlorobenzene	ND	ug/kg	3.1	--	1	
1,4-Dichlorobenzene	ND	ug/kg	3.1	--	1	
Methyl tert butyl ether	ND	ug/kg	1.5	--	1	
p/m-Xylene	ND	ug/kg	1.5	--	1	
o-Xylene	ND	ug/kg	1.5	--	1	
Xylenes, Total	ND	ug/kg	1.5	--	1	
cis-1,2-Dichloroethene	ND	ug/kg	0.77	--	1	
1,2-Dichloroethene, Total	ND	ug/kg	0.77	--	1	
Dibromomethane	ND	ug/kg	3.1	--	1	
1,2,3-Trichloropropane	ND	ug/kg	3.1	--	1	
Styrene	ND	ug/kg	1.5	--	1	
Dichlorodifluoromethane	ND	ug/kg	7.7	--	1	
Acetone	ND	ug/kg	28	--	1	
Carbon disulfide	ND	ug/kg	3.1	--	1	
Methyl ethyl ketone	ND	ug/kg	7.7	--	1	
Methyl isobutyl ketone	ND	ug/kg	7.7	--	1	
2-Hexanone	ND	ug/kg	7.7	--	1	
Bromochloromethane	ND	ug/kg	3.1	--	1	
Tetrahydrofuran	ND	ug/kg	3.1	--	1	
2,2-Dichloropropane	ND	ug/kg	3.9	--	1	
1,2-Dibromoethane	ND	ug/kg	3.1	--	1	
1,3-Dichloropropane	ND	ug/kg	3.1	--	1	
1,1,1,2-Tetrachloroethane	ND	ug/kg	0.77	--	1	
Bromobenzene	ND	ug/kg	3.9	--	1	
n-Butylbenzene	ND	ug/kg	0.77	--	1	
sec-Butylbenzene	ND	ug/kg	0.77	--	1	
tert-Butylbenzene	ND	ug/kg	3.1	--	1	
o-Chlorotoluene	ND	ug/kg	3.1	--	1	
p-Chlorotoluene	ND	ug/kg	3.1	--	1	
1,2-Dibromo-3-chloropropane	ND	ug/kg	3.1	--	1	
Hexachlorobutadiene	ND	ug/kg	3.1	--	1	
Isopropylbenzene	ND	ug/kg	0.77	--	1	
p-Isopropyltoluene	ND	ug/kg	0.77	--	1	
Naphthalene	ND	ug/kg	3.1	--	1	
n-Propylbenzene	ND	ug/kg	0.77	--	1	
1,2,3-Trichlorobenzene	ND	ug/kg	3.1	--	1	
1,2,4-Trichlorobenzene	ND	ug/kg	3.1	--	1	
1,3,5-Trimethylbenzene	ND	ug/kg	3.1	--	1	
1,2,4-Trimethylbenzene	ND	ug/kg	3.1	--	1	



Project Name: EAST BOSTON

Lab Number: L1704354

Project Number: 43068

Report Date: 02/17/17

**SAMPLE RESULTS**

Lab ID: L1704354-03  
 Client ID: VES-108 (16-18)  
 Sample Location: MA

Date Collected: 02/10/17 13:50  
 Date Received: 02/10/17  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics by 8260/5035 - Westborough Lab						
Diethyl ether	ND	ug/kg	3.9	--	--	1
Diisopropyl Ether	ND	ug/kg	3.1	--	--	1
Ethyl-Tert-Butyl-Ether	ND	ug/kg	3.1	--	--	1
Tertiary-Amyl Methyl Ether	ND	ug/kg	3.1	--	--	1
1,4-Dioxane	ND	ug/kg	31	--	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	107		70-130
Toluene-d8	101		70-130
4-Bromofluorobenzene	109		70-130
Dibromofluoromethane	99		70-130

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704354  
**Report Date:** 02/17/17

**SAMPLE RESULTS**

Lab ID:	L1704354-04	Date Collected:	02/10/17 10:30
Client ID:	VES-123 (0-2)	Date Received:	02/10/17
Sample Location:	MA	Field Prep:	Not Specified
Matrix:	Soil		
Analytical Method:	97,8260C		
Analytical Date:	02/15/17 22:03		
Analyst:	TE		
Percent Solids:	91%		

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics by 8260/5035 - Westborough Lab</b>						
Methylene chloride	ND	ug/kg	12	--	--	1
1,1-Dichloroethane	ND	ug/kg	1.9	--	--	1
Chloroform	ND	ug/kg	1.9	--	--	1
Carbon tetrachloride	ND	ug/kg	1.2	--	--	1
1,2-Dichloropropane	ND	ug/kg	4.4	--	--	1
Dibromochloromethane	ND	ug/kg	1.2	--	--	1
1,1,2-Trichloroethane	ND	ug/kg	1.9	--	--	1
Tetrachloroethene	ND	ug/kg	1.2	--	--	1
Chlorobenzene	ND	ug/kg	1.2	--	--	1
Trichlorofluoromethane	ND	ug/kg	5.0	--	--	1
1,2-Dichloroethane	ND	ug/kg	1.2	--	--	1
1,1,1-Trichloroethane	ND	ug/kg	1.2	--	--	1
Bromodichloromethane	ND	ug/kg	1.2	--	--	1
trans-1,3-Dichloropropene	ND	ug/kg	1.2	--	--	1
cis-1,3-Dichloropropene	ND	ug/kg	1.2	--	--	1
1,3-Dichloropropene, Total	ND	ug/kg	1.2	--	--	1
1,1-Dichloropropene	ND	ug/kg	5.0	--	--	1
Bromoform	ND	ug/kg	5.0	--	--	1
1,1,2,2-Tetrachloroethane	ND	ug/kg	1.2	--	--	1
Benzene	ND	ug/kg	1.2	--	--	1
Toluene	ND	ug/kg	1.9	--	--	1
Ethylbenzene	ND	ug/kg	1.2	--	--	1
Chloromethane	ND	ug/kg	5.0	--	--	1
Bromomethane	ND	ug/kg	2.5	--	--	1
Vinyl chloride	ND	ug/kg	2.5	--	--	1
Chloroethane	ND	ug/kg	2.5	--	--	1
1,1-Dichloroethene	ND	ug/kg	1.2	--	--	1
trans-1,2-Dichloroethene	ND	ug/kg	1.9	--	--	1
Trichloroethene	ND	ug/kg	1.2	--	--	1
1,2-Dichlorobenzene	ND	ug/kg	5.0	--	--	1



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704354  
**Report Date:** 02/17/17

**SAMPLE RESULTS**

Lab ID:	L1704354-04	Date Collected:	02/10/17 10:30		
Client ID:	VES-123 (0-2)	Date Received:	02/10/17		
Sample Location:	MA	Field Prep:	Not Specified		
Parameter	Result	Qualifier	Units	RL	MDL
<b>MCP Volatile Organics by 8260/5035 - Westborough Lab</b>					
1,3-Dichlorobenzene	ND	ug/kg	5.0	--	1
1,4-Dichlorobenzene	ND	ug/kg	5.0	--	1
Methyl tert butyl ether	ND	ug/kg	2.5	--	1
p/m-Xylene	ND	ug/kg	2.5	--	1
o-Xylene	ND	ug/kg	2.5	--	1
Xylenes, Total	ND	ug/kg	2.5	--	1
cis-1,2-Dichloroethene	ND	ug/kg	1.2	--	1
1,2-Dichloroethene, Total	ND	ug/kg	1.2	--	1
Dibromomethane	ND	ug/kg	5.0	--	1
1,2,3-Trichloropropane	ND	ug/kg	5.0	--	1
Styrene	ND	ug/kg	2.5	--	1
Dichlorodifluoromethane	ND	ug/kg	12	--	1
Acetone	ND	ug/kg	45	--	1
Carbon disulfide	ND	ug/kg	5.0	--	1
Methyl ethyl ketone	ND	ug/kg	12	--	1
Methyl isobutyl ketone	ND	ug/kg	12	--	1
2-Hexanone	ND	ug/kg	12	--	1
Bromochloromethane	ND	ug/kg	5.0	--	1
Tetrahydrofuran	ND	ug/kg	5.0	--	1
2,2-Dichloropropane	ND	ug/kg	6.2	--	1
1,2-Dibromoethane	ND	ug/kg	5.0	--	1
1,3-Dichloropropane	ND	ug/kg	5.0	--	1
1,1,1,2-Tetrachloroethane	ND	ug/kg	1.2	--	1
Bromobenzene	ND	ug/kg	6.2	--	1
n-Butylbenzene	ND	ug/kg	1.2	--	1
sec-Butylbenzene	ND	ug/kg	1.2	--	1
tert-Butylbenzene	ND	ug/kg	5.0	--	1
o-Chlorotoluene	ND	ug/kg	5.0	--	1
p-Chlorotoluene	ND	ug/kg	5.0	--	1
1,2-Dibromo-3-chloropropane	ND	ug/kg	5.0	--	1
Hexachlorobutadiene	ND	ug/kg	5.0	--	1
Isopropylbenzene	ND	ug/kg	1.2	--	1
p-Isopropyltoluene	ND	ug/kg	1.2	--	1
Naphthalene	ND	ug/kg	5.0	--	1
n-Propylbenzene	ND	ug/kg	1.2	--	1
1,2,3-Trichlorobenzene	ND	ug/kg	5.0	--	1
1,2,4-Trichlorobenzene	ND	ug/kg	5.0	--	1
1,3,5-Trimethylbenzene	ND	ug/kg	5.0	--	1
1,2,4-Trimethylbenzene	ND	ug/kg	5.0	--	1



Project Name: EAST BOSTON

Lab Number: L1704354

Project Number: 43068

Report Date: 02/17/17

**SAMPLE RESULTS**

Lab ID: L1704354-04

Date Collected: 02/10/17 10:30

Client ID: VES-123 (0-2)

Date Received: 02/10/17

Sample Location: MA

Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics by 8260/5035 - Westborough Lab						
Diethyl ether	ND	ug/kg	6.2	--	--	1
Diisopropyl Ether	ND	ug/kg	5.0	--	--	1
Ethyl-Tert-Butyl-Ether	ND	ug/kg	5.0	--	--	1
Tertiary-Amyl Methyl Ether	ND	ug/kg	5.0	--	--	1
1,4-Dioxane	ND	ug/kg	50	--	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	111		70-130
Toluene-d8	99		70-130
4-Bromofluorobenzene	108		70-130
Dibromofluoromethane	99		70-130

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704354  
**Report Date:** 02/17/17

**SAMPLE RESULTS**

Lab ID:	L1704354-05	Date Collected:	02/10/17 12:30
Client ID:	VES-119 (0-2)	Date Received:	02/10/17
Sample Location:	MA	Field Prep:	Not Specified
Matrix:	Soil		
Analytical Method:	97,8260C		
Analytical Date:	02/15/17 22:29		
Analyst:	TE		
Percent Solids:	84%		

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics by 8260/5035 - Westborough Lab</b>						
Methylene chloride	ND	ug/kg	14	--	--	1
1,1-Dichloroethane	ND	ug/kg	2.1	--	--	1
Chloroform	ND	ug/kg	2.1	--	--	1
Carbon tetrachloride	ND	ug/kg	1.4	--	--	1
1,2-Dichloropropane	ND	ug/kg	5.0	--	--	1
Dibromochloromethane	ND	ug/kg	1.4	--	--	1
1,1,2-Trichloroethane	ND	ug/kg	2.1	--	--	1
Tetrachloroethene	ND	ug/kg	1.4	--	--	1
Chlorobenzene	ND	ug/kg	1.4	--	--	1
Trichlorofluoromethane	ND	ug/kg	5.7	--	--	1
1,2-Dichloroethane	ND	ug/kg	1.4	--	--	1
1,1,1-Trichloroethane	ND	ug/kg	1.4	--	--	1
Bromodichloromethane	ND	ug/kg	1.4	--	--	1
trans-1,3-Dichloropropene	ND	ug/kg	1.4	--	--	1
cis-1,3-Dichloropropene	ND	ug/kg	1.4	--	--	1
1,3-Dichloropropene, Total	ND	ug/kg	1.4	--	--	1
1,1-Dichloropropene	ND	ug/kg	5.7	--	--	1
Bromoform	ND	ug/kg	5.7	--	--	1
1,1,2,2-Tetrachloroethane	ND	ug/kg	1.4	--	--	1
Benzene	ND	ug/kg	1.4	--	--	1
Toluene	ND	ug/kg	2.1	--	--	1
Ethylbenzene	ND	ug/kg	1.4	--	--	1
Chloromethane	ND	ug/kg	5.7	--	--	1
Bromomethane	ND	ug/kg	2.8	--	--	1
Vinyl chloride	ND	ug/kg	2.8	--	--	1
Chloroethane	ND	ug/kg	2.8	--	--	1
1,1-Dichloroethene	ND	ug/kg	1.4	--	--	1
trans-1,2-Dichloroethene	ND	ug/kg	2.1	--	--	1
Trichloroethene	ND	ug/kg	1.4	--	--	1
1,2-Dichlorobenzene	ND	ug/kg	5.7	--	--	1



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704354  
**Report Date:** 02/17/17

**SAMPLE RESULTS**

Lab ID:	L1704354-05	Date Collected:	02/10/17 12:30			
Client ID:	VES-119 (0-2)	Date Received:	02/10/17			
Sample Location:	MA	Field Prep:	Not Specified			
Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics by 8260/5035 - Westborough Lab</b>						
1,3-Dichlorobenzene	ND	ug/kg	5.7	--	1	
1,4-Dichlorobenzene	ND	ug/kg	5.7	--	1	
Methyl tert butyl ether	ND	ug/kg	2.8	--	1	
p/m-Xylene	ND	ug/kg	2.8	--	1	
o-Xylene	ND	ug/kg	2.8	--	1	
Xylenes, Total	ND	ug/kg	2.8	--	1	
cis-1,2-Dichloroethene	ND	ug/kg	1.4	--	1	
1,2-Dichloroethene, Total	ND	ug/kg	1.4	--	1	
Dibromomethane	ND	ug/kg	5.7	--	1	
1,2,3-Trichloropropane	ND	ug/kg	5.7	--	1	
Styrene	ND	ug/kg	2.8	--	1	
Dichlorodifluoromethane	ND	ug/kg	14	--	1	
Acetone	ND	ug/kg	51	--	1	
Carbon disulfide	ND	ug/kg	5.7	--	1	
Methyl ethyl ketone	ND	ug/kg	14	--	1	
Methyl isobutyl ketone	ND	ug/kg	14	--	1	
2-Hexanone	ND	ug/kg	14	--	1	
Bromochloromethane	ND	ug/kg	5.7	--	1	
Tetrahydrofuran	ND	ug/kg	5.7	--	1	
2,2-Dichloropropane	ND	ug/kg	7.1	--	1	
1,2-Dibromoethane	ND	ug/kg	5.7	--	1	
1,3-Dichloropropane	ND	ug/kg	5.7	--	1	
1,1,1,2-Tetrachloroethane	ND	ug/kg	1.4	--	1	
Bromobenzene	ND	ug/kg	7.1	--	1	
n-Butylbenzene	ND	ug/kg	1.4	--	1	
sec-Butylbenzene	ND	ug/kg	1.4	--	1	
tert-Butylbenzene	ND	ug/kg	5.7	--	1	
o-Chlorotoluene	ND	ug/kg	5.7	--	1	
p-Chlorotoluene	ND	ug/kg	5.7	--	1	
1,2-Dibromo-3-chloropropane	ND	ug/kg	5.7	--	1	
Hexachlorobutadiene	ND	ug/kg	5.7	--	1	
Isopropylbenzene	ND	ug/kg	1.4	--	1	
p-Isopropyltoluene	ND	ug/kg	1.4	--	1	
Naphthalene	ND	ug/kg	5.7	--	1	
n-Propylbenzene	ND	ug/kg	1.4	--	1	
1,2,3-Trichlorobenzene	ND	ug/kg	5.7	--	1	
1,2,4-Trichlorobenzene	ND	ug/kg	5.7	--	1	
1,3,5-Trimethylbenzene	ND	ug/kg	5.7	--	1	
1,2,4-Trimethylbenzene	ND	ug/kg	5.7	--	1	



Project Name: EAST BOSTON

Lab Number: L1704354

Project Number: 43068

Report Date: 02/17/17

**SAMPLE RESULTS**

Lab ID: L1704354-05

Date Collected: 02/10/17 12:30

Client ID: VES-119 (0-2)

Date Received: 02/10/17

Sample Location: MA

Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics by 8260/5035 - Westborough Lab						
Diethyl ether	ND		ug/kg	7.1	--	1
Diisopropyl Ether	ND		ug/kg	5.7	--	1
Ethyl-Tert-Butyl-Ether	ND		ug/kg	5.7	--	1
Tertiary-Amyl Methyl Ether	ND		ug/kg	5.7	--	1
1,4-Dioxane	ND		ug/kg	57	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	112		70-130
Toluene-d8	101		70-130
4-Bromofluorobenzene	110		70-130
Dibromofluoromethane	100		70-130

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704354  
**Report Date:** 02/17/17

**SAMPLE RESULTS**

Lab ID: L1704354-06  
Client ID: VES-109 (0-2)  
Sample Location: MA  
Matrix: Soil  
Analytical Method: 97,8260C  
Analytical Date: 02/15/17 22:54  
Analyst: TE  
Percent Solids: 90%

Date Collected: 02/10/17 13:30  
Date Received: 02/10/17  
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics by 8260/5035 - Westborough Lab</b>						
Methylene chloride	ND	ug/kg	7.3	--	--	1
1,1-Dichloroethane	ND	ug/kg	1.1	--	--	1
Chloroform	ND	ug/kg	1.1	--	--	1
Carbon tetrachloride	ND	ug/kg	0.73	--	--	1
1,2-Dichloropropane	ND	ug/kg	2.5	--	--	1
Dibromochloromethane	ND	ug/kg	0.73	--	--	1
1,1,2-Trichloroethane	ND	ug/kg	1.1	--	--	1
Tetrachloroethene	ND	ug/kg	0.73	--	--	1
Chlorobenzene	ND	ug/kg	0.73	--	--	1
Trichlorofluoromethane	ND	ug/kg	2.9	--	--	1
1,2-Dichloroethane	ND	ug/kg	0.73	--	--	1
1,1,1-Trichloroethane	ND	ug/kg	0.73	--	--	1
Bromodichloromethane	ND	ug/kg	0.73	--	--	1
trans-1,3-Dichloropropene	ND	ug/kg	0.73	--	--	1
cis-1,3-Dichloropropene	ND	ug/kg	0.73	--	--	1
1,3-Dichloropropene, Total	ND	ug/kg	0.73	--	--	1
1,1-Dichloropropene	ND	ug/kg	2.9	--	--	1
Bromoform	ND	ug/kg	2.9	--	--	1
1,1,2,2-Tetrachloroethane	ND	ug/kg	0.73	--	--	1
Benzene	ND	ug/kg	0.73	--	--	1
Toluene	ND	ug/kg	1.1	--	--	1
Ethylbenzene	ND	ug/kg	0.73	--	--	1
Chloromethane	ND	ug/kg	2.9	--	--	1
Bromomethane	ND	ug/kg	1.4	--	--	1
Vinyl chloride	ND	ug/kg	1.4	--	--	1
Chloroethane	ND	ug/kg	1.4	--	--	1
1,1-Dichloroethene	ND	ug/kg	0.73	--	--	1
trans-1,2-Dichloroethene	ND	ug/kg	1.1	--	--	1
Trichloroethene	ND	ug/kg	0.73	--	--	1
1,2-Dichlorobenzene	ND	ug/kg	2.9	--	--	1



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704354  
**Report Date:** 02/17/17

**SAMPLE RESULTS**

Lab ID:	L1704354-06	Date Collected:	02/10/17 13:30			
Client ID:	VES-109 (0-2)	Date Received:	02/10/17			
Sample Location:	MA	Field Prep:	Not Specified			
Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics by 8260/5035 - Westborough Lab</b>						
1,3-Dichlorobenzene	ND	ug/kg	2.9	--	1	
1,4-Dichlorobenzene	ND	ug/kg	2.9	--	1	
Methyl tert butyl ether	ND	ug/kg	1.4	--	1	
p/m-Xylene	ND	ug/kg	1.4	--	1	
o-Xylene	ND	ug/kg	1.4	--	1	
Xylenes, Total	ND	ug/kg	1.4	--	1	
cis-1,2-Dichloroethene	ND	ug/kg	0.73	--	1	
1,2-Dichloroethene, Total	ND	ug/kg	0.73	--	1	
Dibromomethane	ND	ug/kg	2.9	--	1	
1,2,3-Trichloropropane	ND	ug/kg	2.9	--	1	
Styrene	ND	ug/kg	1.4	--	1	
Dichlorodifluoromethane	ND	ug/kg	7.3	--	1	
Acetone	ND	ug/kg	26	--	1	
Carbon disulfide	ND	ug/kg	2.9	--	1	
Methyl ethyl ketone	ND	ug/kg	7.3	--	1	
Methyl isobutyl ketone	ND	ug/kg	7.3	--	1	
2-Hexanone	ND	ug/kg	7.3	--	1	
Bromochloromethane	ND	ug/kg	2.9	--	1	
Tetrahydrofuran	ND	ug/kg	2.9	--	1	
2,2-Dichloropropane	ND	ug/kg	3.6	--	1	
1,2-Dibromoethane	ND	ug/kg	2.9	--	1	
1,3-Dichloropropane	ND	ug/kg	2.9	--	1	
1,1,1,2-Tetrachloroethane	ND	ug/kg	0.73	--	1	
Bromobenzene	ND	ug/kg	3.6	--	1	
n-Butylbenzene	ND	ug/kg	0.73	--	1	
sec-Butylbenzene	ND	ug/kg	0.73	--	1	
tert-Butylbenzene	ND	ug/kg	2.9	--	1	
o-Chlorotoluene	ND	ug/kg	2.9	--	1	
p-Chlorotoluene	ND	ug/kg	2.9	--	1	
1,2-Dibromo-3-chloropropane	ND	ug/kg	2.9	--	1	
Hexachlorobutadiene	ND	ug/kg	2.9	--	1	
Isopropylbenzene	ND	ug/kg	0.73	--	1	
p-Isopropyltoluene	ND	ug/kg	0.73	--	1	
Naphthalene	ND	ug/kg	2.9	--	1	
n-Propylbenzene	ND	ug/kg	0.73	--	1	
1,2,3-Trichlorobenzene	ND	ug/kg	2.9	--	1	
1,2,4-Trichlorobenzene	ND	ug/kg	2.9	--	1	
1,3,5-Trimethylbenzene	ND	ug/kg	2.9	--	1	
1,2,4-Trimethylbenzene	ND	ug/kg	2.9	--	1	

Project Name: EAST BOSTON

Lab Number: L1704354

Project Number: 43068

Report Date: 02/17/17

**SAMPLE RESULTS**

Lab ID: L1704354-06

Date Collected: 02/10/17 13:30

Client ID: VES-109 (0-2)

Date Received: 02/10/17

Sample Location: MA

Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics by 8260/5035 - Westborough Lab						
Diethyl ether	ND		ug/kg	3.6	--	1
Diisopropyl Ether	ND		ug/kg	2.9	--	1
Ethyl-Tert-Butyl-Ether	ND		ug/kg	2.9	--	1
Tertiary-Amyl Methyl Ether	ND		ug/kg	2.9	--	1
1,4-Dioxane	ND		ug/kg	29	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	113		70-130
Toluene-d8	99		70-130
4-Bromofluorobenzene	111		70-130
Dibromofluoromethane	101		70-130

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704354  
**Report Date:** 02/17/17

### Method Blank Analysis Batch Quality Control

Analytical Method: 97,8260C  
Analytical Date: 02/15/17 20:20  
Analyst: PK

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics by 8260/5035 - Westborough Lab for sample(s): WG978400-5				01-02,04-06	Batch:
Methylene chloride	ND		ug/kg	10	--
1,1-Dichloroethane	ND		ug/kg	1.5	--
Chloroform	ND		ug/kg	1.5	--
Carbon tetrachloride	ND		ug/kg	1.0	--
1,2-Dichloropropane	ND		ug/kg	3.5	--
Dibromochloromethane	ND		ug/kg	1.0	--
1,1,2-Trichloroethane	ND		ug/kg	1.5	--
Tetrachloroethene	ND		ug/kg	1.0	--
Chlorobenzene	ND		ug/kg	1.0	--
Trichlorofluoromethane	ND		ug/kg	4.0	--
1,2-Dichloroethane	ND		ug/kg	1.0	--
1,1,1-Trichloroethane	ND		ug/kg	1.0	--
Bromodichloromethane	ND		ug/kg	1.0	--
trans-1,3-Dichloropropene	ND		ug/kg	1.0	--
cis-1,3-Dichloropropene	ND		ug/kg	1.0	--
1,3-Dichloropropene, Total	ND		ug/kg	1.0	--
1,1-Dichloropropene	ND		ug/kg	4.0	--
Bromoform	ND		ug/kg	4.0	--
1,1,2,2-Tetrachloroethane	ND		ug/kg	1.0	--
Benzene	ND		ug/kg	1.0	--
Toluene	ND		ug/kg	1.5	--
Ethylbenzene	ND		ug/kg	1.0	--
Chloromethane	ND		ug/kg	4.0	--
Bromomethane	ND		ug/kg	2.0	--
Vinyl chloride	ND		ug/kg	2.0	--
Chloroethane	ND		ug/kg	2.0	--
1,1-Dichloroethene	ND		ug/kg	1.0	--
trans-1,2-Dichloroethene	ND		ug/kg	1.5	--
Trichloroethene	ND		ug/kg	1.0	--



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704354  
**Report Date:** 02/17/17

### Method Blank Analysis Batch Quality Control

Analytical Method: 97,8260C  
Analytical Date: 02/15/17 20:20  
Analyst: PK

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics by 8260/5035 - Westborough Lab for sample(s): WG978400-5				01-02,04-06	Batch:
1,2-Dichlorobenzene	ND		ug/kg	4.0	--
1,3-Dichlorobenzene	ND		ug/kg	4.0	--
1,4-Dichlorobenzene	ND		ug/kg	4.0	--
Methyl tert butyl ether	ND		ug/kg	2.0	--
p/m-Xylene	ND		ug/kg	2.0	--
o-Xylene	ND		ug/kg	2.0	--
Xylenes, Total	ND		ug/kg	2.0	--
cis-1,2-Dichloroethene	ND		ug/kg	1.0	--
1,2-Dichloroethene, Total	ND		ug/kg	1.0	--
Dibromomethane	ND		ug/kg	4.0	--
1,4-Dichlorobutane	ND		ug/kg	10	--
1,2,3-Trichloropropane	ND		ug/kg	4.0	--
Styrene	ND		ug/kg	2.0	--
Dichlorodifluoromethane	ND		ug/kg	10	--
Acetone	ND		ug/kg	36	--
Carbon disulfide	ND		ug/kg	4.0	--
Methyl ethyl ketone	ND		ug/kg	10	--
Methyl isobutyl ketone	ND		ug/kg	10	--
2-Hexanone	ND		ug/kg	10	--
Ethyl methacrylate	ND		ug/kg	10	--
Acrylonitrile	ND		ug/kg	4.0	--
Bromochloromethane	ND		ug/kg	4.0	--
Tetrahydrofuran	ND		ug/kg	4.0	--
2,2-Dichloropropane	ND		ug/kg	5.0	--
1,2-Dibromoethane	ND		ug/kg	4.0	--
1,3-Dichloropropane	ND		ug/kg	4.0	--
1,1,1,2-Tetrachloroethane	ND		ug/kg	1.0	--
Bromobenzene	ND		ug/kg	5.0	--
n-Butylbenzene	ND		ug/kg	1.0	--



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704354  
**Report Date:** 02/17/17

### Method Blank Analysis Batch Quality Control

Analytical Method: 97,8260C  
Analytical Date: 02/15/17 20:20  
Analyst: PK

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics by 8260/5035 - Westborough Lab for sample(s): 01-02,04-06 Batch: WG978400-5					
sec-Butylbenzene	ND		ug/kg	1.0	--
tert-Butylbenzene	ND		ug/kg	4.0	--
o-Chlorotoluene	ND		ug/kg	4.0	--
p-Chlorotoluene	ND		ug/kg	4.0	--
1,2-Dibromo-3-chloropropane	ND		ug/kg	4.0	--
Hexachlorobutadiene	ND		ug/kg	4.0	--
Isopropylbenzene	ND		ug/kg	1.0	--
p-Isopropyltoluene	ND		ug/kg	1.0	--
Naphthalene	ND		ug/kg	4.0	--
n-Propylbenzene	ND		ug/kg	1.0	--
1,2,3-Trichlorobenzene	ND		ug/kg	4.0	--
1,2,4-Trichlorobenzene	ND		ug/kg	4.0	--
1,3,5-Trimethylbenzene	ND		ug/kg	4.0	--
1,2,4-Trimethylbenzene	ND		ug/kg	4.0	--
trans-1,4-Dichloro-2-butene	ND		ug/kg	5.0	--
Diethyl ether	ND		ug/kg	5.0	--
Diisopropyl Ether	ND		ug/kg	4.0	--
Ethyl-Tert-Butyl-Ether	ND		ug/kg	4.0	--
Tertiary-Amyl Methyl Ether	ND		ug/kg	4.0	--
1,4-Dioxane	ND		ug/kg	40	--
2-Chloroethylvinyl ether	ND		ug/kg	20	--
Halothane	ND		ug/kg	40	--
Ethyl Acetate	ND		ug/kg	20	--
Freon-113	ND		ug/kg	20	--
Vinyl acetate	ND		ug/kg	10	--



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704354  
**Report Date:** 02/17/17

**Method Blank Analysis**  
**Batch Quality Control**

Analytical Method: 97,8260C  
Analytical Date: 02/15/17 20:20  
Analyst: PK

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics by 8260/5035 - Westborough Lab for sample(s): 01-02,04-06 Batch: WG978400-5					

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	103		70-130
Toluene-d8	101		70-130
4-Bromofluorobenzene	111		70-130
Dibromofluoromethane	93		70-130

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704354  
**Report Date:** 02/17/17

### Method Blank Analysis Batch Quality Control

Analytical Method: 97,8260C  
Analytical Date: 02/16/17 09:57  
Analyst: MV

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics by 8260/5035 - Westborough Lab for sample(s):	03			Batch: WG978504-5	
Methylene chloride	ND		ug/kg	10	--
1,1-Dichloroethane	ND		ug/kg	1.5	--
Chloroform	ND		ug/kg	1.5	--
Carbon tetrachloride	ND		ug/kg	1.0	--
1,2-Dichloropropane	ND		ug/kg	3.5	--
Dibromochloromethane	ND		ug/kg	1.0	--
1,1,2-Trichloroethane	ND		ug/kg	1.5	--
Tetrachloroethene	ND		ug/kg	1.0	--
Chlorobenzene	ND		ug/kg	1.0	--
Trichlorofluoromethane	ND		ug/kg	4.0	--
1,2-Dichloroethane	ND		ug/kg	1.0	--
1,1,1-Trichloroethane	ND		ug/kg	1.0	--
Bromodichloromethane	ND		ug/kg	1.0	--
trans-1,3-Dichloropropene	ND		ug/kg	1.0	--
cis-1,3-Dichloropropene	ND		ug/kg	1.0	--
1,3-Dichloropropene, Total	ND		ug/kg	1.0	--
1,1-Dichloropropene	ND		ug/kg	4.0	--
Bromoform	ND		ug/kg	4.0	--
1,1,2,2-Tetrachloroethane	ND		ug/kg	1.0	--
Benzene	ND		ug/kg	1.0	--
Toluene	ND		ug/kg	1.5	--
Ethylbenzene	ND		ug/kg	1.0	--
Chloromethane	ND		ug/kg	4.0	--
Bromomethane	ND		ug/kg	2.0	--
Vinyl chloride	ND		ug/kg	2.0	--
Chloroethane	ND		ug/kg	2.0	--
1,1-Dichloroethene	ND		ug/kg	1.0	--
trans-1,2-Dichloroethene	ND		ug/kg	1.5	--
Trichloroethene	ND		ug/kg	1.0	--



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704354  
**Report Date:** 02/17/17

### Method Blank Analysis Batch Quality Control

Analytical Method: 97,8260C  
Analytical Date: 02/16/17 09:57  
Analyst: MV

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics by 8260/5035 - Westborough Lab for sample(s):	03			Batch: WG978504-5	
1,2-Dichlorobenzene	ND		ug/kg	4.0	--
1,3-Dichlorobenzene	ND		ug/kg	4.0	--
1,4-Dichlorobenzene	ND		ug/kg	4.0	--
Methyl tert butyl ether	ND		ug/kg	2.0	--
p/m-Xylene	ND		ug/kg	2.0	--
o-Xylene	ND		ug/kg	2.0	--
Xylenes, Total	ND		ug/kg	2.0	--
cis-1,2-Dichloroethene	ND		ug/kg	1.0	--
1,2-Dichloroethene, Total	ND		ug/kg	1.0	--
Dibromomethane	ND		ug/kg	4.0	--
1,4-Dichlorobutane	ND		ug/kg	10	--
1,2,3-Trichloropropane	ND		ug/kg	4.0	--
Styrene	ND		ug/kg	2.0	--
Dichlorodifluoromethane	ND		ug/kg	10	--
Acetone	ND		ug/kg	36	--
Carbon disulfide	ND		ug/kg	4.0	--
Methyl ethyl ketone	ND		ug/kg	10	--
Methyl isobutyl ketone	ND		ug/kg	10	--
2-Hexanone	ND		ug/kg	10	--
Ethyl methacrylate	ND		ug/kg	10	--
Acrylonitrile	ND		ug/kg	4.0	--
Bromochloromethane	ND		ug/kg	4.0	--
Tetrahydrofuran	ND		ug/kg	4.0	--
2,2-Dichloropropane	ND		ug/kg	5.0	--
1,2-Dibromoethane	ND		ug/kg	4.0	--
1,3-Dichloropropane	ND		ug/kg	4.0	--
1,1,1,2-Tetrachloroethane	ND		ug/kg	1.0	--
Bromobenzene	ND		ug/kg	5.0	--
n-Butylbenzene	ND		ug/kg	1.0	--



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704354  
**Report Date:** 02/17/17

### Method Blank Analysis Batch Quality Control

Analytical Method: 97,8260C  
Analytical Date: 02/16/17 09:57  
Analyst: MV

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics by 8260/5035 - Westborough Lab for sample(s):	03			Batch: WG978504-5	
sec-Butylbenzene	ND		ug/kg	1.0	--
tert-Butylbenzene	ND		ug/kg	4.0	--
o-Chlorotoluene	ND		ug/kg	4.0	--
p-Chlorotoluene	ND		ug/kg	4.0	--
1,2-Dibromo-3-chloropropane	ND		ug/kg	4.0	--
Hexachlorobutadiene	ND		ug/kg	4.0	--
Isopropylbenzene	ND		ug/kg	1.0	--
p-Isopropyltoluene	ND		ug/kg	1.0	--
Naphthalene	ND		ug/kg	4.0	--
n-Propylbenzene	ND		ug/kg	1.0	--
1,2,3-Trichlorobenzene	ND		ug/kg	4.0	--
1,2,4-Trichlorobenzene	ND		ug/kg	4.0	--
1,3,5-Trimethylbenzene	ND		ug/kg	4.0	--
1,2,4-Trimethylbenzene	ND		ug/kg	4.0	--
trans-1,4-Dichloro-2-butene	ND		ug/kg	5.0	--
Diethyl ether	ND		ug/kg	5.0	--
Diisopropyl Ether	ND		ug/kg	4.0	--
Ethyl-Tert-Butyl-Ether	ND		ug/kg	4.0	--
Tertiary-Amyl Methyl Ether	ND		ug/kg	4.0	--
1,4-Dioxane	ND		ug/kg	40	--
2-Chloroethylvinyl ether	ND		ug/kg	20	--
Halothane	ND		ug/kg	40	--
Ethyl Acetate	ND		ug/kg	20	--
Freon-113	ND		ug/kg	20	--
Vinyl acetate	ND		ug/kg	10	--

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704354  
**Report Date:** 02/17/17

### **Method Blank Analysis**

#### **Batch Quality Control**

Analytical Method: 97,8260C  
Analytical Date: 02/16/17 09:57  
Analyst: MV

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics by 8260/5035 - Westborough Lab for sample(s): 03				Batch:	WG978504-5

<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Acceptance Criteria</b>
1,2-Dichloroethane-d4	104		70-130
Toluene-d8	100		70-130
4-Bromofluorobenzene	110		70-130
Dibromofluoromethane	95		70-130

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704354  
**Report Date:** 02/17/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics by 8260/5035 - Westborough Lab Associated sample(s): 01-02,04-06 Batch: WG978400-3 WG978400-4								
Methylene chloride	115		109		70-130	5		20
1,1-Dichloroethane	110		110		70-130	0		20
Chloroform	106		107		70-130	1		20
Carbon tetrachloride	105		106		70-130	1		20
1,2-Dichloropropane	107		109		70-130	2		20
Dibromochloromethane	94		95		70-130	1		20
1,1,2-Trichloroethane	102		103		70-130	1		20
Tetrachloroethene	92		91		70-130	1		20
Chlorobenzene	96		97		70-130	1		20
Trichlorofluoromethane	112		111		70-130	1		20
1,2-Dichloroethane	111		113		70-130	2		20
1,1,1-Trichloroethane	109		109		70-130	0		20
Bromodichloromethane	104		106		70-130	2		20
trans-1,3-Dichloropropene	100		102		70-130	2		20
cis-1,3-Dichloropropene	103		106		70-130	3		20
1,1-Dichloropropene	112		110		70-130	2		20
Bromoform	88		91		70-130	3		20
1,1,2,2-Tetrachloroethane	103		104		70-130	1		20
Benzene	106		107		70-130	1		20
Toluene	99		100		70-130	1		20
Ethylbenzene	101		101		70-130	0		20

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704354  
**Report Date:** 02/17/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics by 8260/5035 - Westborough Lab Associated sample(s): 01-02,04-06 Batch: WG978400-3 WG978400-4								
Chloromethane	109		108		70-130	1		20
Bromomethane	96		98		70-130	2		20
Vinyl chloride	105		103		70-130	2		20
Chloroethane	112		111		70-130	1		20
1,1-Dichloroethene	103		103		70-130	0		20
trans-1,2-Dichloroethene	103		104		70-130	1		20
Trichloroethene	104		105		70-130	1		20
1,2-Dichlorobenzene	94		97		70-130	3		20
1,3-Dichlorobenzene	96		99		70-130	3		20
1,4-Dichlorobenzene	96		98		70-130	2		20
Methyl tert butyl ether	103		105		70-130	2		20
p/m-Xylene	98		98		70-130	0		20
o-Xylene	98		98		70-130	0		20
cis-1,2-Dichloroethene	101		103		70-130	2		20
Dibromomethane	102		103		70-130	1		20
1,4-Dichlorobutane	108		111		70-130	3		20
1,2,3-Trichloropropane	105		108		70-130	3		20
Styrene	97		98		70-130	1		20
Dichlorodifluoromethane	98		97		70-130	1		20
Acetone	117		114		70-130	3		20
Carbon disulfide	104		106		70-130	2		20

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704354  
**Report Date:** 02/17/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics by 8260/5035 - Westborough Lab Associated sample(s): 01-02,04-06 Batch: WG978400-3 WG978400-4								
Methyl ethyl ketone	107		106		70-130	1		20
Methyl isobutyl ketone	94		93		70-130	1		20
2-Hexanone	106		106		70-130	0		20
Ethyl methacrylate	88		90		70-130	2		20
Acrylonitrile	111		114		70-130	3		20
Bromochloromethane	96		99		70-130	3		20
Tetrahydrofuran	119		120		70-130	1		20
2,2-Dichloropropane	111		111		70-130	0		20
1,2-Dibromoethane	95		96		70-130	1		20
1,3-Dichloropropane	102		103		70-130	1		20
1,1,1,2-Tetrachloroethane	94		95		70-130	1		20
Bromobenzene	93		95		70-130	2		20
n-Butylbenzene	112		112		70-130	0		20
sec-Butylbenzene	105		106		70-130	1		20
tert-Butylbenzene	100		102		70-130	2		20
o-Chlorotoluene	106		107		70-130	1		20
p-Chlorotoluene	105		108		70-130	3		20
1,2-Dibromo-3-chloropropane	84		85		70-130	1		20
Hexachlorobutadiene	87		90		70-130	3		20
Isopropylbenzene	101		103		70-130	2		20
p-Isopropyltoluene	102		104		70-130	2		20

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704354  
**Report Date:** 02/17/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics by 8260/5035 - Westborough Lab Associated sample(s): 01-02,04-06 Batch: WG978400-3 WG978400-4								
Naphthalene	95		100		70-130	5		20
n-Propylbenzene	107		109		70-130	2		20
1,2,3-Trichlorobenzene	90		96		70-130	6		20
1,2,4-Trichlorobenzene	94		94		70-130	0		20
1,3,5-Trimethylbenzene	102		106		70-130	4		20
1,2,4-Trimethylbenzene	102		104		70-130	2		20
trans-1,4-Dichloro-2-butene	112		116		70-130	4		20
Diethyl ether	105		106		70-130	1		20
Diisopropyl Ether	115		116		70-130	1		20
Ethyl-Tert-Butyl-Ether	107		109		70-130	2		20
Tertiary-Amyl Methyl Ether	103		106		70-130	3		20
1,4-Dioxane	91		92		70-130	1		20
2-Chloroethylvinyl ether	106		108		70-130	2		20
Halothane	101		100		70-130	1		20
Ethyl Acetate	116		118		70-130	2		20
Freon-113	111		112		70-130	1		20
Vinyl acetate	116		119		70-130	3		20

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704354  
**Report Date:** 02/17/17

<b>Parameter</b>	<i>LCS</i> <i>%Recovery</i>	<i>Qual</i>	<i>LCSD</i> <i>%Recovery</i>	<i>Qual</i>	<i>%Recovery</i> <i>Limits</i>	<i>RPD</i>	<i>Qual</i>	<i>RPD</i> <i>Limits</i>
	MCP Volatile Organics by 8260/5035 - Westborough Lab Associated sample(s): 01-02,04-06 Batch: WG978400-3 WG978400-4							
<b>Surrogate</b>	<i>LCS</i> <i>%Recovery</i>	<i>Qual</i>	<i>LCSD</i> <i>%Recovery</i>	<i>Qual</i>	<i>Acceptance</i> <i>Criteria</i>			
1,2-Dichloroethane-d4	108		107		70-130			
Toluene-d8	98		99		70-130			
4-Bromofluorobenzene	107		108		70-130			
Dibromofluoromethane	99		99		70-130			

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704354  
**Report Date:** 02/17/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics by 8260/5035 - Westborough Lab Associated sample(s): 03 Batch: WG978504-3 WG978504-4								
Methylene chloride	107		119		70-130	11		20
1,1-Dichloroethane	104		103		70-130	1		20
Chloroform	102		103		70-130	1		20
Carbon tetrachloride	96		93		70-130	3		20
1,2-Dichloropropane	105		105		70-130	0		20
Dibromochloromethane	92		94		70-130	2		20
1,1,2-Trichloroethane	101		102		70-130	1		20
Tetrachloroethene	88		82		70-130	7		20
Chlorobenzene	94		92		70-130	2		20
Trichlorofluoromethane	95		91		70-130	4		20
1,2-Dichloroethane	108		110		70-130	2		20
1,1,1-Trichloroethane	100		97		70-130	3		20
Bromodichloromethane	101		102		70-130	1		20
trans-1,3-Dichloropropene	99		101		70-130	2		20
cis-1,3-Dichloropropene	101		102		70-130	1		20
1,1-Dichloropropene	102		97		70-130	5		20
Bromoform	89		92		70-130	3		20
1,1,2,2-Tetrachloroethane	102		104		70-130	2		20
Benzene	101		100		70-130	1		20
Toluene	95		93		70-130	2		20
Ethylbenzene	97		95		70-130	2		20

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704354  
**Report Date:** 02/17/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics by 8260/5035 - Westborough Lab Associated sample(s): 03 Batch: WG978504-3 WG978504-4								
Chloromethane	104		100		70-130	4		20
Bromomethane	91		88		70-130	3		20
Vinyl chloride	93		88		70-130	6		20
Chloroethane	103		99		70-130	4		20
1,1-Dichloroethene	95		90		70-130	5		20
trans-1,2-Dichloroethene	96		96		70-130	0		20
Trichloroethene	97		97		70-130	0		20
1,2-Dichlorobenzene	94		94		70-130	0		20
1,3-Dichlorobenzene	95		94		70-130	1		20
1,4-Dichlorobenzene	95		94		70-130	1		20
Methyl tert butyl ether	102		105		70-130	3		20
p/m-Xylene	94		93		70-130	1		20
o-Xylene	95		94		70-130	1		20
cis-1,2-Dichloroethene	99		98		70-130	1		20
Dibromomethane	103		102		70-130	1		20
1,4-Dichlorobutane	107		110		70-130	3		20
1,2,3-Trichloropropane	104		107		70-130	3		20
Styrene	96		95		70-130	1		20
Dichlorodifluoromethane	83		77		70-130	8		20
Acetone	99		104		70-130	5		20
Carbon disulfide	93		89		70-130	4		20

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704354  
**Report Date:** 02/17/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics by 8260/5035 - Westborough Lab Associated sample(s): 03 Batch: WG978504-3 WG978504-4								
Methyl ethyl ketone	98		106		70-130	8		20
Methyl isobutyl ketone	92		97		70-130	5		20
2-Hexanone	102		104		70-130	2		20
Ethyl methacrylate	87		92		70-130	6		20
Acrylonitrile	104		114		70-130	9		20
Bromochloromethane	95		96		70-130	1		20
Tetrahydrofuran	115		120		70-130	4		20
2,2-Dichloropropane	103		100		70-130	3		20
1,2-Dibromoethane	95		96		70-130	1		20
1,3-Dichloropropane	101		103		70-130	2		20
1,1,1,2-Tetrachloroethane	93		92		70-130	1		20
Bromobenzene	93		92		70-130	1		20
n-Butylbenzene	106		101		70-130	5		20
sec-Butylbenzene	100		94		70-130	6		20
tert-Butylbenzene	97		93		70-130	4		20
o-Chlorotoluene	103		100		70-130	3		20
p-Chlorotoluene	104		102		70-130	2		20
1,2-Dibromo-3-chloropropane	83		89		70-130	7		20
Hexachlorobutadiene	83		79		70-130	5		20
Isopropylbenzene	98		94		70-130	4		20
p-Isopropyltoluene	98		94		70-130	4		20

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704354  
**Report Date:** 02/17/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics by 8260/5035 - Westborough Lab Associated sample(s): 03 Batch: WG978504-3 WG978504-4								
Naphthalene	96		98		70-130	2		20
n-Propylbenzene	103		98		70-130	5		20
1,2,3-Trichlorobenzene	91		92		70-130	1		20
1,2,4-Trichlorobenzene	90		92		70-130	2		20
1,3,5-Trimethylbenzene	100		97		70-130	3		20
1,2,4-Trimethylbenzene	100		97		70-130	3		20
trans-1,4-Dichloro-2-butene	109		113		70-130	4		20
Diethyl ether	101		104		70-130	3		20
Diisopropyl Ether	112		114		70-130	2		20
Ethyl-Tert-Butyl-Ether	105		107		70-130	2		20
Tertiary-Amyl Methyl Ether	101		105		70-130	4		20
1,4-Dioxane	90		97		70-130	7		20
2-Chloroethylvinyl ether	88		86		70-130	2		20
Halothane	94		91		70-130	3		20
Ethyl Acetate	111		117		70-130	5		20
Freon-113	95		88		70-130	8		20
Vinyl acetate	113		118		70-130	4		20

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704354  
**Report Date:** 02/17/17

<b>Parameter</b>	<i>LCS</i> <i>%Recovery</i>	<i>Qual</i>	<i>LCSD</i> <i>%Recovery</i>	<i>Qual</i>	<i>%Recovery</i> <i>Limits</i>	<i>RPD</i>	<i>Qual</i>	<i>RPD</i> <i>Limits</i>
MCP Volatile Organics by 8260/5035 - Westborough Lab Associated sample(s): 03 Batch: WG978504-3 WG978504-4								
<b>Surrogate</b>	<i>LCS</i> <i>%Recovery</i>	<i>Qual</i>	<i>LCSD</i> <i>%Recovery</i>	<i>Qual</i>	<i>Acceptance</i> <i>Criteria</i>			
1,2-Dichloroethane-d4	105		106		70-130			
Toluene-d8	99		99		70-130			
4-Bromofluorobenzene	108		108		70-130			
Dibromofluoromethane	98		100		70-130			

# **SEMIVOLATILES**



**Project Name:** EAST BOSTON  
**Project Number:** 43068

Serial\_No:02171716:16

**Lab Number:** L1704354  
**Report Date:** 02/17/17

### SAMPLE RESULTS

Lab ID: L1704354-01  
Client ID: VES-103 (1-2)  
Sample Location: MA  
Matrix: Soil  
Analytical Method: 97,8270D  
Analytical Date: 02/16/17 12:56  
Analyst: PS  
Percent Solids: 91%

Date Collected: 02/10/17 08:30  
Date Received: 02/10/17  
Field Prep: Not Specified  
Extraction Method: EPA 3546  
Extraction Date: 02/14/17 18:45

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Semivolatile Organics - Westborough Lab						
Acenaphthene	530	ug/kg	140	--	--	1
1,2,4-Trichlorobenzene	ND	ug/kg	180	--	--	1
Hexachlorobenzene	ND	ug/kg	110	--	--	1
Bis(2-chloroethyl)ether	ND	ug/kg	160	--	--	1
2-Chloronaphthalene	ND	ug/kg	180	--	--	1
1,2-Dichlorobenzene	ND	ug/kg	180	--	--	1
1,3-Dichlorobenzene	ND	ug/kg	180	--	--	1
1,4-Dichlorobenzene	ND	ug/kg	180	--	--	1
3,3'-Dichlorobenzidine	ND	ug/kg	180	--	--	1
2,4-Dinitrotoluene	ND	ug/kg	180	--	--	1
2,6-Dinitrotoluene	ND	ug/kg	180	--	--	1
Azobenzene	ND	ug/kg	180	--	--	1
Fluoranthene	6100	ug/kg	110	--	--	1
4-Bromophenyl phenyl ether	ND	ug/kg	180	--	--	1
Bis(2-chloroisopropyl)ether	ND	ug/kg	220	--	--	1
Bis(2-chloroethoxy)methane	ND	ug/kg	200	--	--	1
Hexachlorobutadiene	ND	ug/kg	180	--	--	1
Hexachloroethane	ND	ug/kg	140	--	--	1
Isophorone	ND	ug/kg	160	--	--	1
Naphthalene	330	ug/kg	180	--	--	1
Nitrobenzene	ND	ug/kg	160	--	--	1
Bis(2-ethylhexyl)phthalate	ND	ug/kg	180	--	--	1
Butyl benzyl phthalate	ND	ug/kg	180	--	--	1
Di-n-butylphthalate	ND	ug/kg	180	--	--	1
Di-n-octylphthalate	ND	ug/kg	180	--	--	1
Diethyl phthalate	ND	ug/kg	180	--	--	1
Dimethyl phthalate	ND	ug/kg	180	--	--	1
Benzo(a)anthracene	3600	ug/kg	110	--	--	1
Benzo(a)pyrene	2900	ug/kg	140	--	--	1
Benzo(b)fluoranthene	3800	ug/kg	110	--	--	1



Project Name: EAST BOSTON

Lab Number: L1704354

Project Number: 43068

Report Date: 02/17/17

**SAMPLE RESULTS**

Lab ID:	L1704354-01	Date Collected:	02/10/17 08:30
Client ID:	VES-103 (1-2)	Date Received:	02/10/17
Sample Location:	MA	Field Prep:	Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Semivolatile Organics - Westborough Lab</b>						
Benzo(k)fluoranthene	1200	ug/kg	110	--	--	1
Chrysene	3400	ug/kg	110	--	--	1
Acenaphthylene	140	ug/kg	140	--	--	1
Anthracene	1400	ug/kg	110	--	--	1
Benzo(ghi)perylene	1600	ug/kg	140	--	--	1
Fluorene	520	ug/kg	180	--	--	1
Phenanthrene	5100	ug/kg	110	--	--	1
Dibenzo(a,h)anthracene	480	ug/kg	110	--	--	1
Indeno(1,2,3-cd)pyrene	1800	ug/kg	140	--	--	1
Pyrene	5400	ug/kg	110	--	--	1
Aniline	ND	ug/kg	220	--	--	1
4-Chloroaniline	ND	ug/kg	180	--	--	1
Dibenzofuran	440	ug/kg	180	--	--	1
2-Methylnaphthalene	ND	ug/kg	220	--	--	1
Acetophenone	ND	ug/kg	180	--	--	1
2,4,6-Trichlorophenol	ND	ug/kg	110	--	--	1
2-Chlorophenol	ND	ug/kg	180	--	--	1
2,4-Dichlorophenol	ND	ug/kg	160	--	--	1
2,4-Dimethylphenol	ND	ug/kg	180	--	--	1
2-Nitrophenol	ND	ug/kg	390	--	--	1
4-Nitrophenol	ND	ug/kg	250	--	--	1
2,4-Dinitrophenol	ND	ug/kg	870	--	--	1
Pentachlorophenol	ND	ug/kg	360	--	--	1
Phenol	ND	ug/kg	180	--	--	1
2-Methylphenol	ND	ug/kg	180	--	--	1
3-Methylphenol/4-Methylphenol	ND	ug/kg	260	--	--	1
2,4,5-Trichlorophenol	ND	ug/kg	180	--	--	1
Pyridine	ND	ug/kg	200	--	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	44		30-130
Phenol-d6	46		30-130
Nitrobenzene-d5	52		30-130
2-Fluorobiphenyl	44		30-130
2,4,6-Tribromophenol	45		30-130
4-Terphenyl-d14	39		30-130

**Project Name:** EAST BOSTON  
**Project Number:** 43068

Serial\_No:02171716:16

**Lab Number:** L1704354  
**Report Date:** 02/17/17

### SAMPLE RESULTS

Lab ID: L1704354-02  
Client ID: VES-108 (6-8)  
Sample Location: MA  
Matrix: Soil  
Analytical Method: 97,8270D  
Analytical Date: 02/16/17 15:55  
Analyst: ALS  
Percent Solids: 45%

Date Collected: 02/10/17 13:45  
Date Received: 02/10/17  
Field Prep: Not Specified  
Extraction Method: EPA 3546  
Extraction Date: 02/14/17 12:51

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Semivolatile Organics - Westborough Lab						
Acenaphthene	ND	ug/kg	290	--	--	1
1,2,4-Trichlorobenzene	ND	ug/kg	360	--	--	1
Hexachlorobenzene	ND	ug/kg	220	--	--	1
Bis(2-chloroethyl)ether	ND	ug/kg	330	--	--	1
2-Chloronaphthalene	ND	ug/kg	360	--	--	1
1,2-Dichlorobenzene	ND	ug/kg	360	--	--	1
1,3-Dichlorobenzene	ND	ug/kg	360	--	--	1
1,4-Dichlorobenzene	ND	ug/kg	360	--	--	1
3,3'-Dichlorobenzidine	ND	ug/kg	360	--	--	1
2,4-Dinitrotoluene	ND	ug/kg	360	--	--	1
2,6-Dinitrotoluene	ND	ug/kg	360	--	--	1
Azobenzene	ND	ug/kg	360	--	--	1
Fluoranthene	ND	ug/kg	220	--	--	1
4-Bromophenyl phenyl ether	ND	ug/kg	360	--	--	1
Bis(2-chloroisopropyl)ether	ND	ug/kg	440	--	--	1
Bis(2-chloroethoxy)methane	ND	ug/kg	390	--	--	1
Hexachlorobutadiene	ND	ug/kg	360	--	--	1
Hexachloroethane	ND	ug/kg	290	--	--	1
Isophorone	ND	ug/kg	330	--	--	1
Naphthalene	ND	ug/kg	360	--	--	1
Nitrobenzene	ND	ug/kg	330	--	--	1
Bis(2-ethylhexyl)phthalate	ND	ug/kg	360	--	--	1
Butyl benzyl phthalate	ND	ug/kg	360	--	--	1
Di-n-butylphthalate	ND	ug/kg	360	--	--	1
Di-n-octylphthalate	ND	ug/kg	360	--	--	1
Diethyl phthalate	ND	ug/kg	360	--	--	1
Dimethyl phthalate	ND	ug/kg	360	--	--	1
Benzo(a)anthracene	ND	ug/kg	220	--	--	1
Benzo(a)pyrene	ND	ug/kg	290	--	--	1
Benzo(b)fluoranthene	ND	ug/kg	220	--	--	1



Project Name: EAST BOSTON

Lab Number: L1704354

Project Number: 43068

Report Date: 02/17/17

**SAMPLE RESULTS**

Lab ID:	L1704354-02	Date Collected:	02/10/17 13:45
Client ID:	VES-108 (6-8)	Date Received:	02/10/17
Sample Location:	MA	Field Prep:	Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Semivolatile Organics - Westborough Lab</b>						
Benzo(k)fluoranthene	ND	ug/kg	220	--	--	1
Chrysene	ND	ug/kg	220	--	--	1
Acenaphthylene	ND	ug/kg	290	--	--	1
Anthracene	ND	ug/kg	220	--	--	1
Benzo(ghi)perylene	ND	ug/kg	290	--	--	1
Fluorene	ND	ug/kg	360	--	--	1
Phenanthrene	ND	ug/kg	220	--	--	1
Dibenzo(a,h)anthracene	ND	ug/kg	220	--	--	1
Indeno(1,2,3-cd)pyrene	ND	ug/kg	290	--	--	1
Pyrene	ND	ug/kg	220	--	--	1
Aniline	ND	ug/kg	440	--	--	1
4-Chloroaniline	ND	ug/kg	360	--	--	1
Dibenzofuran	ND	ug/kg	360	--	--	1
2-Methylnaphthalene	ND	ug/kg	440	--	--	1
Acetophenone	ND	ug/kg	360	--	--	1
2,4,6-Trichlorophenol	ND	ug/kg	220	--	--	1
2-Chlorophenol	ND	ug/kg	360	--	--	1
2,4-Dichlorophenol	ND	ug/kg	330	--	--	1
2,4-Dimethylphenol	ND	ug/kg	360	--	--	1
2-Nitrophenol	ND	ug/kg	780	--	--	1
4-Nitrophenol	ND	ug/kg	510	--	--	1
2,4-Dinitrophenol	ND	ug/kg	1700	--	--	1
Pentachlorophenol	ND	ug/kg	720	--	--	1
Phenol	620	ug/kg	360	--	--	1
2-Methylphenol	ND	ug/kg	360	--	--	1
3-Methylphenol/4-Methylphenol	1100	ug/kg	520	--	--	1
2,4,5-Trichlorophenol	ND	ug/kg	360	--	--	1
Pyridine	ND	ug/kg	390	--	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	52		30-130
Phenol-d6	54		30-130
Nitrobenzene-d5	60		30-130
2-Fluorobiphenyl	56		30-130
2,4,6-Tribromophenol	60		30-130
4-Terphenyl-d14	52		30-130

**Project Name:** EAST BOSTON  
**Project Number:** 43068

Serial\_No:02171716:16

**Lab Number:** L1704354  
**Report Date:** 02/17/17

### SAMPLE RESULTS

Lab ID: L1704354-03  
Client ID: VES-108 (16-18)  
Sample Location: MA  
Matrix: Soil  
Analytical Method: 97,8270D  
Analytical Date: 02/16/17 15:05  
Analyst: ALS  
Percent Solids: 72%

Date Collected: 02/10/17 13:50  
Date Received: 02/10/17  
Field Prep: Not Specified  
Extraction Method: EPA 3546  
Extraction Date: 02/14/17 12:51

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Semivolatile Organics - Westborough Lab						
Acenaphthene	ND	ug/kg	180	--	--	1
1,2,4-Trichlorobenzene	ND	ug/kg	230	--	--	1
Hexachlorobenzene	ND	ug/kg	140	--	--	1
Bis(2-chloroethyl)ether	ND	ug/kg	200	--	--	1
2-Chloronaphthalene	ND	ug/kg	230	--	--	1
1,2-Dichlorobenzene	ND	ug/kg	230	--	--	1
1,3-Dichlorobenzene	ND	ug/kg	230	--	--	1
1,4-Dichlorobenzene	ND	ug/kg	230	--	--	1
3,3'-Dichlorobenzidine	ND	ug/kg	230	--	--	1
2,4-Dinitrotoluene	ND	ug/kg	230	--	--	1
2,6-Dinitrotoluene	ND	ug/kg	230	--	--	1
Azobenzene	ND	ug/kg	230	--	--	1
Fluoranthene	ND	ug/kg	140	--	--	1
4-Bromophenyl phenyl ether	ND	ug/kg	230	--	--	1
Bis(2-chloroisopropyl)ether	ND	ug/kg	270	--	--	1
Bis(2-chloroethoxy)methane	ND	ug/kg	250	--	--	1
Hexachlorobutadiene	ND	ug/kg	230	--	--	1
Hexachloroethane	ND	ug/kg	180	--	--	1
Isophorone	ND	ug/kg	200	--	--	1
Naphthalene	ND	ug/kg	230	--	--	1
Nitrobenzene	ND	ug/kg	200	--	--	1
Bis(2-ethylhexyl)phthalate	ND	ug/kg	230	--	--	1
Butyl benzyl phthalate	ND	ug/kg	230	--	--	1
Di-n-butylphthalate	ND	ug/kg	230	--	--	1
Di-n-octylphthalate	ND	ug/kg	230	--	--	1
Diethyl phthalate	ND	ug/kg	230	--	--	1
Dimethyl phthalate	ND	ug/kg	230	--	--	1
Benzo(a)anthracene	ND	ug/kg	140	--	--	1
Benzo(a)pyrene	ND	ug/kg	180	--	--	1
Benzo(b)fluoranthene	ND	ug/kg	140	--	--	1



Project Name: EAST BOSTON

Lab Number: L1704354

Project Number: 43068

Report Date: 02/17/17

**SAMPLE RESULTS**

Lab ID: L1704354-03 Date Collected: 02/10/17 13:50  
 Client ID: VES-108 (16-18) Date Received: 02/10/17  
 Sample Location: MA Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Semivolatile Organics - Westborough Lab</b>						
Benzo(k)fluoranthene	ND	ug/kg	140	--	--	1
Chrysene	ND	ug/kg	140	--	--	1
Acenaphthylene	ND	ug/kg	180	--	--	1
Anthracene	ND	ug/kg	140	--	--	1
Benzo(ghi)perylene	ND	ug/kg	180	--	--	1
Fluorene	ND	ug/kg	230	--	--	1
Phenanthrene	ND	ug/kg	140	--	--	1
Dibenzo(a,h)anthracene	ND	ug/kg	140	--	--	1
Indeno(1,2,3-cd)pyrene	ND	ug/kg	180	--	--	1
Pyrene	ND	ug/kg	140	--	--	1
Aniline	ND	ug/kg	270	--	--	1
4-Chloroaniline	ND	ug/kg	230	--	--	1
Dibenzofuran	ND	ug/kg	230	--	--	1
2-Methylnaphthalene	ND	ug/kg	270	--	--	1
Acetophenone	ND	ug/kg	230	--	--	1
2,4,6-Trichlorophenol	ND	ug/kg	140	--	--	1
2-Chlorophenol	ND	ug/kg	230	--	--	1
2,4-Dichlorophenol	ND	ug/kg	200	--	--	1
2,4-Dimethylphenol	ND	ug/kg	230	--	--	1
2-Nitrophenol	ND	ug/kg	490	--	--	1
4-Nitrophenol	ND	ug/kg	320	--	--	1
2,4-Dinitrophenol	ND	ug/kg	1100	--	--	1
Pentachlorophenol	ND	ug/kg	460	--	--	1
Phenol	ND	ug/kg	230	--	--	1
2-Methylphenol	ND	ug/kg	230	--	--	1
3-Methylphenol/4-Methylphenol	ND	ug/kg	330	--	--	1
2,4,5-Trichlorophenol	ND	ug/kg	230	--	--	1
Pyridine	ND	ug/kg	250	--	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	59		30-130
Phenol-d6	60		30-130
Nitrobenzene-d5	61		30-130
2-Fluorobiphenyl	57		30-130
2,4,6-Tribromophenol	56		30-130
4-Terphenyl-d14	53		30-130

**Project Name:** EAST BOSTON  
**Project Number:** 43068

Serial\_No:02171716:16

**Lab Number:** L1704354  
**Report Date:** 02/17/17

### SAMPLE RESULTS

Lab ID: L1704354-04  
Client ID: VES-123 (0-2)  
Sample Location: MA  
Matrix: Soil  
Analytical Method: 97,8270D  
Analytical Date: 02/16/17 12:59  
Analyst: ALS  
Percent Solids: 91%

Date Collected: 02/10/17 10:30  
Date Received: 02/10/17  
Field Prep: Not Specified  
Extraction Method: EPA 3546  
Extraction Date: 02/14/17 12:51

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Semivolatile Organics - Westborough Lab						
Acenaphthene	ND	ug/kg	140	--	--	1
1,2,4-Trichlorobenzene	ND	ug/kg	180	--	--	1
Hexachlorobenzene	ND	ug/kg	110	--	--	1
Bis(2-chloroethyl)ether	ND	ug/kg	160	--	--	1
2-Chloronaphthalene	ND	ug/kg	180	--	--	1
1,2-Dichlorobenzene	ND	ug/kg	180	--	--	1
1,3-Dichlorobenzene	ND	ug/kg	180	--	--	1
1,4-Dichlorobenzene	ND	ug/kg	180	--	--	1
3,3'-Dichlorobenzidine	ND	ug/kg	180	--	--	1
2,4-Dinitrotoluene	ND	ug/kg	180	--	--	1
2,6-Dinitrotoluene	ND	ug/kg	180	--	--	1
Azobenzene	ND	ug/kg	180	--	--	1
Fluoranthene	ND	ug/kg	110	--	--	1
4-Bromophenyl phenyl ether	ND	ug/kg	180	--	--	1
Bis(2-chloroisopropyl)ether	ND	ug/kg	210	--	--	1
Bis(2-chloroethoxy)methane	ND	ug/kg	190	--	--	1
Hexachlorobutadiene	ND	ug/kg	180	--	--	1
Hexachloroethane	ND	ug/kg	140	--	--	1
Isophorone	ND	ug/kg	160	--	--	1
Naphthalene	ND	ug/kg	180	--	--	1
Nitrobenzene	ND	ug/kg	160	--	--	1
Bis(2-ethylhexyl)phthalate	ND	ug/kg	180	--	--	1
Butyl benzyl phthalate	ND	ug/kg	180	--	--	1
Di-n-butylphthalate	ND	ug/kg	180	--	--	1
Di-n-octylphthalate	ND	ug/kg	180	--	--	1
Diethyl phthalate	ND	ug/kg	180	--	--	1
Dimethyl phthalate	ND	ug/kg	180	--	--	1
Benzo(a)anthracene	ND	ug/kg	110	--	--	1
Benzo(a)pyrene	ND	ug/kg	140	--	--	1
Benzo(b)fluoranthene	ND	ug/kg	110	--	--	1



Project Name: EAST BOSTON

Lab Number: L1704354

Project Number: 43068

Report Date: 02/17/17

**SAMPLE RESULTS**

Lab ID:	L1704354-04	Date Collected:	02/10/17 10:30
Client ID:	VES-123 (0-2)	Date Received:	02/10/17
Sample Location:	MA	Field Prep:	Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Semivolatile Organics - Westborough Lab</b>						
Benzo(k)fluoranthene	ND	ug/kg	110	--	--	1
Chrysene	ND	ug/kg	110	--	--	1
Acenaphthylene	ND	ug/kg	140	--	--	1
Anthracene	ND	ug/kg	110	--	--	1
Benzo(ghi)perylene	ND	ug/kg	140	--	--	1
Fluorene	ND	ug/kg	180	--	--	1
Phenanthrene	ND	ug/kg	110	--	--	1
Dibenzo(a,h)anthracene	ND	ug/kg	110	--	--	1
Indeno(1,2,3-cd)pyrene	ND	ug/kg	140	--	--	1
Pyrene	ND	ug/kg	110	--	--	1
Aniline	ND	ug/kg	210	--	--	1
4-Chloroaniline	ND	ug/kg	180	--	--	1
Dibenzofuran	ND	ug/kg	180	--	--	1
2-Methylnaphthalene	ND	ug/kg	210	--	--	1
Acetophenone	ND	ug/kg	180	--	--	1
2,4,6-Trichlorophenol	ND	ug/kg	110	--	--	1
2-Chlorophenol	ND	ug/kg	180	--	--	1
2,4-Dichlorophenol	ND	ug/kg	160	--	--	1
2,4-Dimethylphenol	ND	ug/kg	180	--	--	1
2-Nitrophenol	ND	ug/kg	380	--	--	1
4-Nitrophenol	ND	ug/kg	250	--	--	1
2,4-Dinitrophenol	ND	ug/kg	850	--	--	1
Pentachlorophenol	ND	ug/kg	350	--	--	1
Phenol	ND	ug/kg	180	--	--	1
2-Methylphenol	ND	ug/kg	180	--	--	1
3-Methylphenol/4-Methylphenol	ND	ug/kg	250	--	--	1
2,4,5-Trichlorophenol	ND	ug/kg	180	--	--	1
Pyridine	ND	ug/kg	190	--	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	66		30-130
Phenol-d6	69		30-130
Nitrobenzene-d5	67		30-130
2-Fluorobiphenyl	62		30-130
2,4,6-Tribromophenol	59		30-130
4-Terphenyl-d14	56		30-130

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704354  
**Report Date:** 02/17/17

**SAMPLE RESULTS**

Lab ID: L1704354-05  
Client ID: VES-119 (0-2)  
Sample Location: MA  
Matrix: Soil  
Analytical Method: 97,8270D  
Analytical Date: 02/16/17 17:11  
Analyst: ALS  
Percent Solids: 84%

Date Collected: 02/10/17 12:30  
Date Received: 02/10/17  
Field Prep: Not Specified  
Extraction Method: EPA 3546  
Extraction Date: 02/14/17 12:51

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Semivolatile Organics - Westborough Lab</b>						
Acenaphthene	ND	ug/kg	160	--	--	1
1,2,4-Trichlorobenzene	ND	ug/kg	190	--	--	1
Hexachlorobenzene	ND	ug/kg	120	--	--	1
Bis(2-chloroethyl)ether	ND	ug/kg	170	--	--	1
2-Chloronaphthalene	ND	ug/kg	190	--	--	1
1,2-Dichlorobenzene	ND	ug/kg	190	--	--	1
1,3-Dichlorobenzene	ND	ug/kg	190	--	--	1
1,4-Dichlorobenzene	ND	ug/kg	190	--	--	1
3,3'-Dichlorobenzidine	ND	ug/kg	190	--	--	1
2,4-Dinitrotoluene	ND	ug/kg	190	--	--	1
2,6-Dinitrotoluene	ND	ug/kg	190	--	--	1
Azobenzene	ND	ug/kg	190	--	--	1
Fluoranthene	1100	ug/kg	120	--	--	1
4-Bromophenyl phenyl ether	ND	ug/kg	190	--	--	1
Bis(2-chloroisopropyl)ether	ND	ug/kg	230	--	--	1
Bis(2-chloroethoxy)methane	ND	ug/kg	210	--	--	1
Hexachlorobutadiene	ND	ug/kg	190	--	--	1
Hexachloroethane	ND	ug/kg	160	--	--	1
Isophorone	ND	ug/kg	170	--	--	1
Naphthalene	ND	ug/kg	190	--	--	1
Nitrobenzene	ND	ug/kg	170	--	--	1
Bis(2-ethylhexyl)phthalate	ND	ug/kg	190	--	--	1
Butyl benzyl phthalate	ND	ug/kg	190	--	--	1
Di-n-butylphthalate	ND	ug/kg	190	--	--	1
Di-n-octylphthalate	ND	ug/kg	190	--	--	1
Diethyl phthalate	ND	ug/kg	190	--	--	1
Dimethyl phthalate	ND	ug/kg	190	--	--	1
Benzo(a)anthracene	600	ug/kg	120	--	--	1
Benzo(a)pyrene	690	ug/kg	160	--	--	1
Benzo(b)fluoranthene	860	ug/kg	120	--	--	1



Project Name: EAST BOSTON

Lab Number: L1704354

Project Number: 43068

Report Date: 02/17/17

**SAMPLE RESULTS**

Lab ID:	L1704354-05	Date Collected:	02/10/17 12:30
Client ID:	VES-119 (0-2)	Date Received:	02/10/17
Sample Location:	MA	Field Prep:	Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Semivolatile Organics - Westborough Lab</b>						
Benzo(k)fluoranthene	240	ug/kg	120	--	--	1
Chrysene	640	ug/kg	120	--	--	1
Acenaphthylene	ND	ug/kg	160	--	--	1
Anthracene	140	ug/kg	120	--	--	1
Benzo(ghi)perylene	440	ug/kg	160	--	--	1
Fluorene	ND	ug/kg	190	--	--	1
Phenanthrene	630	ug/kg	120	--	--	1
Dibenzo(a,h)anthracene	120	ug/kg	120	--	--	1
Indeno(1,2,3-cd)pyrene	470	ug/kg	160	--	--	1
Pyrene	990	ug/kg	120	--	--	1
Aniline	ND	ug/kg	230	--	--	1
4-Chloroaniline	ND	ug/kg	190	--	--	1
Dibenzofuran	ND	ug/kg	190	--	--	1
2-Methylnaphthalene	ND	ug/kg	230	--	--	1
Acetophenone	ND	ug/kg	190	--	--	1
2,4,6-Trichlorophenol	ND	ug/kg	120	--	--	1
2-Chlorophenol	ND	ug/kg	190	--	--	1
2,4-Dichlorophenol	ND	ug/kg	170	--	--	1
2,4-Dimethylphenol	ND	ug/kg	190	--	--	1
2-Nitrophenol	ND	ug/kg	420	--	--	1
4-Nitrophenol	ND	ug/kg	270	--	--	1
2,4-Dinitrophenol	ND	ug/kg	930	--	--	1
Pentachlorophenol	ND	ug/kg	390	--	--	1
Phenol	ND	ug/kg	190	--	--	1
2-Methylphenol	ND	ug/kg	190	--	--	1
3-Methylphenol/4-Methylphenol	ND	ug/kg	280	--	--	1
2,4,5-Trichlorophenol	ND	ug/kg	190	--	--	1
Pyridine	ND	ug/kg	210	--	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	71		30-130
Phenol-d6	73		30-130
Nitrobenzene-d5	79		30-130
2-Fluorobiphenyl	56		30-130
2,4,6-Tribromophenol	67		30-130
4-Terphenyl-d14	46		30-130

**Project Name:** EAST BOSTON  
**Project Number:** 43068

Serial\_No:02171716:16

**Lab Number:** L1704354  
**Report Date:** 02/17/17

### SAMPLE RESULTS

Lab ID: L1704354-06  
Client ID: VES-109 (0-2)  
Sample Location: MA  
Matrix: Soil  
Analytical Method: 97,8270D  
Analytical Date: 02/16/17 16:46  
Analyst: ALS  
Percent Solids: 90%

Date Collected: 02/10/17 13:30  
Date Received: 02/10/17  
Field Prep: Not Specified  
Extraction Method: EPA 3546  
Extraction Date: 02/14/17 12:51

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Semivolatile Organics - Westborough Lab						
Acenaphthene	ND	ug/kg	140	--	--	1
1,2,4-Trichlorobenzene	ND	ug/kg	180	--	--	1
Hexachlorobenzene	ND	ug/kg	110	--	--	1
Bis(2-chloroethyl)ether	ND	ug/kg	160	--	--	1
2-Chloronaphthalene	ND	ug/kg	180	--	--	1
1,2-Dichlorobenzene	ND	ug/kg	180	--	--	1
1,3-Dichlorobenzene	ND	ug/kg	180	--	--	1
1,4-Dichlorobenzene	ND	ug/kg	180	--	--	1
3,3'-Dichlorobenzidine	ND	ug/kg	180	--	--	1
2,4-Dinitrotoluene	ND	ug/kg	180	--	--	1
2,6-Dinitrotoluene	ND	ug/kg	180	--	--	1
Azobenzene	ND	ug/kg	180	--	--	1
Fluoranthene	ND	ug/kg	110	--	--	1
4-Bromophenyl phenyl ether	ND	ug/kg	180	--	--	1
Bis(2-chloroisopropyl)ether	ND	ug/kg	220	--	--	1
Bis(2-chloroethoxy)methane	ND	ug/kg	190	--	--	1
Hexachlorobutadiene	ND	ug/kg	180	--	--	1
Hexachloroethane	ND	ug/kg	140	--	--	1
Isophorone	ND	ug/kg	160	--	--	1
Naphthalene	ND	ug/kg	180	--	--	1
Nitrobenzene	ND	ug/kg	160	--	--	1
Bis(2-ethylhexyl)phthalate	ND	ug/kg	180	--	--	1
Butyl benzyl phthalate	ND	ug/kg	180	--	--	1
Di-n-butylphthalate	ND	ug/kg	180	--	--	1
Di-n-octylphthalate	ND	ug/kg	180	--	--	1
Diethyl phthalate	ND	ug/kg	180	--	--	1
Dimethyl phthalate	ND	ug/kg	180	--	--	1
Benzo(a)anthracene	ND	ug/kg	110	--	--	1
Benzo(a)pyrene	ND	ug/kg	140	--	--	1
Benzo(b)fluoranthene	ND	ug/kg	110	--	--	1



Project Name: EAST BOSTON

Lab Number: L1704354

Project Number: 43068

Report Date: 02/17/17

**SAMPLE RESULTS**

Lab ID:	L1704354-06	Date Collected:	02/10/17 13:30
Client ID:	VES-109 (0-2)	Date Received:	02/10/17
Sample Location:	MA	Field Prep:	Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Semivolatile Organics - Westborough Lab</b>						
Benzo(k)fluoranthene	ND	ug/kg	110	--	--	1
Chrysene	ND	ug/kg	110	--	--	1
Acenaphthylene	ND	ug/kg	140	--	--	1
Anthracene	ND	ug/kg	110	--	--	1
Benzo(ghi)perylene	ND	ug/kg	140	--	--	1
Fluorene	ND	ug/kg	180	--	--	1
Phenanthrene	ND	ug/kg	110	--	--	1
Dibenzo(a,h)anthracene	ND	ug/kg	110	--	--	1
Indeno(1,2,3-cd)pyrene	ND	ug/kg	140	--	--	1
Pyrene	ND	ug/kg	110	--	--	1
Aniline	ND	ug/kg	220	--	--	1
4-Chloroaniline	ND	ug/kg	180	--	--	1
Dibenzofuran	ND	ug/kg	180	--	--	1
2-Methylnaphthalene	ND	ug/kg	220	--	--	1
Acetophenone	ND	ug/kg	180	--	--	1
2,4,6-Trichlorophenol	ND	ug/kg	110	--	--	1
2-Chlorophenol	ND	ug/kg	180	--	--	1
2,4-Dichlorophenol	ND	ug/kg	160	--	--	1
2,4-Dimethylphenol	ND	ug/kg	180	--	--	1
2-Nitrophenol	ND	ug/kg	390	--	--	1
4-Nitrophenol	ND	ug/kg	250	--	--	1
2,4-Dinitrophenol	ND	ug/kg	860	--	--	1
Pentachlorophenol	ND	ug/kg	360	--	--	1
Phenol	ND	ug/kg	180	--	--	1
2-Methylphenol	ND	ug/kg	180	--	--	1
3-Methylphenol/4-Methylphenol	ND	ug/kg	260	--	--	1
2,4,5-Trichlorophenol	ND	ug/kg	180	--	--	1
Pyridine	ND	ug/kg	190	--	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	53		30-130
Phenol-d6	56		30-130
Nitrobenzene-d5	53		30-130
2-Fluorobiphenyl	47		30-130
2,4,6-Tribromophenol	66		30-130
4-Terphenyl-d14	51		30-130

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704354  
**Report Date:** 02/17/17

### Method Blank Analysis Batch Quality Control

Analytical Method: 97,8270D  
Analytical Date: 02/16/17 12:33  
Analyst: ALS

Extraction Method: EPA 3546  
Extraction Date: 02/14/17 12:51

Parameter	Result	Qualifier	Units	RL	MDL
MCP Semivolatile Organics - Westborough Lab for sample(s): 02-06 Batch: WG977657-1					
Acenaphthene	ND		ug/kg	130	--
1,2,4-Trichlorobenzene	ND		ug/kg	160	--
Hexachlorobenzene	ND		ug/kg	99	--
Bis(2-chloroethyl)ether	ND		ug/kg	150	--
2-Chloronaphthalene	ND		ug/kg	160	--
1,2-Dichlorobenzene	ND		ug/kg	160	--
1,3-Dichlorobenzene	ND		ug/kg	160	--
1,4-Dichlorobenzene	ND		ug/kg	160	--
3,3'-Dichlorobenzidine	ND		ug/kg	160	--
2,4-Dinitrotoluene	ND		ug/kg	160	--
2,6-Dinitrotoluene	ND		ug/kg	160	--
Azobenzene	ND		ug/kg	160	--
Fluoranthene	ND		ug/kg	99	--
4-Bromophenyl phenyl ether	ND		ug/kg	160	--
Bis(2-chloroisopropyl)ether	ND		ug/kg	200	--
Bis(2-chloroethoxy)methane	ND		ug/kg	180	--
Hexachlorobutadiene	ND		ug/kg	160	--
Hexachloroethane	ND		ug/kg	130	--
Isophorone	ND		ug/kg	150	--
Naphthalene	ND		ug/kg	160	--
Nitrobenzene	ND		ug/kg	150	--
Bis(2-ethylhexyl)phthalate	ND		ug/kg	160	--
Butyl benzyl phthalate	ND		ug/kg	160	--
Di-n-butylphthalate	ND		ug/kg	160	--
Di-n-octylphthalate	ND		ug/kg	160	--
Diethyl phthalate	ND		ug/kg	160	--
Dimethyl phthalate	ND		ug/kg	160	--
Benzo(a)anthracene	ND		ug/kg	99	--
Benzo(a)pyrene	ND		ug/kg	130	--



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704354  
**Report Date:** 02/17/17

### Method Blank Analysis Batch Quality Control

Analytical Method: 97,8270D  
Analytical Date: 02/16/17 12:33  
Analyst: ALS

Extraction Method: EPA 3546  
Extraction Date: 02/14/17 12:51

Parameter	Result	Qualifier	Units	RL	MDL
MCP Semivolatile Organics - Westborough Lab for sample(s): 02-06 Batch: WG977657-1					
Benzo(b)fluoranthene	ND		ug/kg	99	--
Benzo(k)fluoranthene	ND		ug/kg	99	--
Chrysene	ND		ug/kg	99	--
Acenaphthylene	ND		ug/kg	130	--
Anthracene	ND		ug/kg	99	--
Benzo(ghi)perylene	ND		ug/kg	130	--
Fluorene	ND		ug/kg	160	--
Phenanthrene	ND		ug/kg	99	--
Dibenzo(a,h)anthracene	ND		ug/kg	99	--
Indeno(1,2,3-cd)pyrene	ND		ug/kg	130	--
Pyrene	ND		ug/kg	99	--
Aniline	ND		ug/kg	200	--
4-Chloroaniline	ND		ug/kg	160	--
Dibenzofuran	ND		ug/kg	160	--
2-Methylnaphthalene	ND		ug/kg	200	--
Acetophenone	ND		ug/kg	160	--
2,4,6-Trichlorophenol	ND		ug/kg	99	--
2-Chlorophenol	ND		ug/kg	160	--
2,4-Dichlorophenol	ND		ug/kg	150	--
2,4-Dimethylphenol	ND		ug/kg	160	--
2-Nitrophenol	ND		ug/kg	360	--
4-Nitrophenol	ND		ug/kg	230	--
2,4-Dinitrophenol	ND		ug/kg	800	--
Pentachlorophenol	ND		ug/kg	330	--
Phenol	ND		ug/kg	160	--
2-Methylphenol	ND		ug/kg	160	--
3-Methylphenol/4-Methylphenol	ND		ug/kg	240	--
2,4,5-Trichlorophenol	ND		ug/kg	160	--
Pyridine	ND		ug/kg	180	--



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704354  
**Report Date:** 02/17/17

### **Method Blank Analysis**

#### **Batch Quality Control**

Analytical Method: 97,8270D  
Analytical Date: 02/16/17 12:33  
Analyst: ALS

Extraction Method: EPA 3546  
Extraction Date: 02/14/17 12:51

Parameter	Result	Qualifier	Units	RL	MDL
MCP Semivolatile Organics - Westborough Lab for sample(s): 02-06 Batch: WG977657-1					

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	58		30-130
Phenol-d6	60		30-130
Nitrobenzene-d5	57		30-130
2-Fluorobiphenyl	58		30-130
2,4,6-Tribromophenol	56		30-130
4-Terphenyl-d14	67		30-130

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704354  
**Report Date:** 02/17/17

### Method Blank Analysis Batch Quality Control

Analytical Method: 97,8270D  
Analytical Date: 02/16/17 11:12  
Analyst: PS

Extraction Method: EPA 3546  
Extraction Date: 02/14/17 18:45

Parameter	Result	Qualifier	Units	RL	MDL
MCP Semivolatile Organics - Westborough Lab for sample(s): 01 Batch: WG977840-1					
Acenaphthene	ND		ug/kg	130	--
1,2,4-Trichlorobenzene	ND		ug/kg	160	--
Hexachlorobenzene	ND		ug/kg	97	--
Bis(2-chloroethyl)ether	ND		ug/kg	150	--
2-Chloronaphthalene	ND		ug/kg	160	--
1,2-Dichlorobenzene	ND		ug/kg	160	--
1,3-Dichlorobenzene	ND		ug/kg	160	--
1,4-Dichlorobenzene	ND		ug/kg	160	--
3,3'-Dichlorobenzidine	ND		ug/kg	160	--
2,4-Dinitrotoluene	ND		ug/kg	160	--
2,6-Dinitrotoluene	ND		ug/kg	160	--
Azobenzene	ND		ug/kg	160	--
Fluoranthene	ND		ug/kg	97	--
4-Bromophenyl phenyl ether	ND		ug/kg	160	--
Bis(2-chloroisopropyl)ether	ND		ug/kg	190	--
Bis(2-chloroethoxy)methane	ND		ug/kg	180	--
Hexachlorobutadiene	ND		ug/kg	160	--
Hexachloroethane	ND		ug/kg	130	--
Isophorone	ND		ug/kg	150	--
Naphthalene	ND		ug/kg	160	--
Nitrobenzene	ND		ug/kg	150	--
Bis(2-ethylhexyl)phthalate	ND		ug/kg	160	--
Butyl benzyl phthalate	ND		ug/kg	160	--
Di-n-butylphthalate	ND		ug/kg	160	--
Di-n-octylphthalate	ND		ug/kg	160	--
Diethyl phthalate	ND		ug/kg	160	--
Dimethyl phthalate	ND		ug/kg	160	--
Benzo(a)anthracene	ND		ug/kg	97	--
Benzo(a)pyrene	ND		ug/kg	130	--



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704354  
**Report Date:** 02/17/17

### Method Blank Analysis Batch Quality Control

Analytical Method: 97,8270D  
Analytical Date: 02/16/17 11:12  
Analyst: PS

Extraction Method: EPA 3546  
Extraction Date: 02/14/17 18:45

Parameter	Result	Qualifier	Units	RL	MDL
MCP Semivolatile Organics - Westborough Lab for sample(s): 01 Batch: WG977840-1					
Benzo(b)fluoranthene	ND		ug/kg	97	--
Benzo(k)fluoranthene	ND		ug/kg	97	--
Chrysene	ND		ug/kg	97	--
Acenaphthylene	ND		ug/kg	130	--
Anthracene	ND		ug/kg	97	--
Benzo(ghi)perylene	ND		ug/kg	130	--
Fluorene	ND		ug/kg	160	--
Phenanthrene	ND		ug/kg	97	--
Dibenzo(a,h)anthracene	ND		ug/kg	97	--
Indeno(1,2,3-cd)pyrene	ND		ug/kg	130	--
Pyrene	ND		ug/kg	97	--
Aniline	ND		ug/kg	190	--
4-Chloroaniline	ND		ug/kg	160	--
Dibenzofuran	ND		ug/kg	160	--
2-Methylnaphthalene	ND		ug/kg	190	--
Acetophenone	ND		ug/kg	160	--
2,4,6-Trichlorophenol	ND		ug/kg	97	--
2-Chlorophenol	ND		ug/kg	160	--
2,4-Dichlorophenol	ND		ug/kg	150	--
2,4-Dimethylphenol	ND		ug/kg	160	--
2-Nitrophenol	ND		ug/kg	350	--
4-Nitrophenol	ND		ug/kg	230	--
2,4-Dinitrophenol	ND		ug/kg	780	--
Pentachlorophenol	ND		ug/kg	320	--
Phenol	ND		ug/kg	160	--
2-Methylphenol	ND		ug/kg	160	--
3-Methylphenol/4-Methylphenol	ND		ug/kg	230	--
2,4,5-Trichlorophenol	ND		ug/kg	160	--
Pyridine	ND		ug/kg	180	--



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704354  
**Report Date:** 02/17/17

### Method Blank Analysis Batch Quality Control

Analytical Method: 97,8270D  
Analytical Date: 02/16/17 11:12  
Analyst: PS

Extraction Method: EPA 3546  
Extraction Date: 02/14/17 18:45

Parameter	Result	Qualifier	Units	RL	MDL
MCP Semivolatile Organics - Westborough Lab for sample(s): 01 Batch: WG977840-1					

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	56		30-130
Phenol-d6	62		30-130
Nitrobenzene-d5	59		30-130
2-Fluorobiphenyl	51		30-130
2,4,6-Tribromophenol	57		30-130
4-Terphenyl-d14	59		30-130

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704354  
**Report Date:** 02/17/17

<b>Parameter</b>	<i>LCS</i> <b>%Recovery</b>	<i>LCS</i> <b>%Recovery</b>	<i>%Recovery</i> <b>Limits</b>	<i>RPD</i> <b>Qual</b>	<i>RPD</i> <b>Limits</b>
	<b>Qual</b>	<b>Qual</b>	<b>Limits</b>	<b>Qual</b>	
MCP Semivolatile Organics - Westborough Lab Associated sample(s): 02-06 Batch: WG977657-2 WG977657-3					
Acenaphthene	60	61	40-140	2	30
1,2,4-Trichlorobenzene	56	58	40-140	4	30
Hexachlorobenzene	61	63	40-140	3	30
Bis(2-chloroethyl)ether	55	55	40-140	0	30
2-Chloronaphthalene	58	60	40-140	3	30
1,2-Dichlorobenzene	54	54	40-140	0	30
1,3-Dichlorobenzene	52	50	40-140	4	30
1,4-Dichlorobenzene	53	52	40-140	2	30
3,3'-Dichlorobenzidine	50	56	40-140	11	30
2,4-Dinitrotoluene	70	73	40-140	4	30
2,6-Dinitrotoluene	68	70	40-140	3	30
Azobenzene	62	63	40-140	2	30
Fluoranthene	65	68	40-140	5	30
4-Bromophenyl phenyl ether	59	61	40-140	3	30
Bis(2-chloroisopropyl)ether	46	46	40-140	0	30
Bis(2-chloroethoxy)methane	60	63	40-140	5	30
Hexachlorobutadiene	54	54	40-140	0	30
Hexachloroethane	55	53	40-140	4	30
Isophorone	63	65	40-140	3	30
Naphthalene	59	59	40-140	0	30
Nitrobenzene	61	64	40-140	5	30

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704354  
**Report Date:** 02/17/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Semivolatile Organics - Westborough Lab Associated sample(s): 02-06 Batch: WG977657-2 WG977657-3								
Bis(2-ethylhexyl)phthalate	69		74		40-140	7		30
Butyl benzyl phthalate	76		81		40-140	6		30
Di-n-butylphthalate	67		72		40-140	7		30
Di-n-octylphthalate	69		73		40-140	6		30
Diethyl phthalate	66		68		40-140	3		30
Dimethyl phthalate	64		68		40-140	6		30
Benzo(a)anthracene	62		67		40-140	8		30
Benzo(a)pyrene	71		72		40-140	1		30
Benzo(b)fluoranthene	66		70		40-140	6		30
Benzo(k)fluoranthene	66		67		40-140	2		30
Chrysene	60		64		40-140	6		30
Acenaphthylene	61		64		40-140	5		30
Anthracene	63		66		40-140	5		30
Benzo(ghi)perylene	66		70		40-140	6		30
Fluorene	61		62		40-140	2		30
Phenanthrene	60		62		40-140	3		30
Dibenz(a,h)anthracene	67		70		40-140	4		30
Indeno(1,2,3-cd)pyrene	66		71		40-140	7		30
Pyrene	64		67		40-140	5		30
Aniline	35	Q	39	Q	40-140	11		30
4-Chloroaniline	53		55		40-140	4		30

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704354  
**Report Date:** 02/17/17

<b>Parameter</b>	<i>LCS</i> <i>%Recovery</i>	<i>Qual</i>	<i>LCSD</i> <i>%Recovery</i>	<i>Qual</i>	<i>%Recovery</i> <i>Limits</i>	<i>RPD</i>	<i>Qual</i>	<i>RPD</i> <i>Limits</i>
MCP Semivolatile Organics - Westborough Lab Associated sample(s): 02-06 Batch: WG977657-2 WG977657-3								
Dibenzofuran	59		60		40-140	2		30
2-Methylnaphthalene	59		61		40-140	3		30
Acetophenone	67		69		40-140	3		30
2,4,6-Trichlorophenol	62		64		30-130	3		30
2-Chlorophenol	64		65		30-130	2		30
2,4-Dichlorophenol	65		69		30-130	6		30
2,4-Dimethylphenol	68		72		30-130	6		30
2-Nitrophenol	69		72		30-130	4		30
4-Nitrophenol	61		66		30-130	8		30
2,4-Dinitrophenol	35		40		30-130	13		30
Pentachlorophenol	47		52		30-130	10		30
Phenol	62		63		30-130	2		30
2-Methylphenol	64		67		30-130	5		30
3-Methylphenol/4-Methylphenol	67		72		30-130	7		30
2,4,5-Trichlorophenol	66		70		30-130	6		30
Pyridine	42		34		30-130	21		30

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704354  
**Report Date:** 02/17/17

<b>Parameter</b>	<i>LCS</i> <b>%Recovery</b>	<i>LCS</i> <b>%Recovery</b>	<i>LCSD</i> <b>%Recovery</b>	<i>LCSD</i> <b>%Recovery</b>	<i>%Recovery</i> <b>Limits</b>	<i>RPD</i> <b>Qual</b>	<i>RPD</i> <b>Limits</b>
	<b>Qual</b>	<b>Qual</b>	<b>Qual</b>	<b>Qual</b>	<b>Qual</b>		
MCP Semivolatile Organics - Westborough Lab Associated sample(s): 02-06 Batch: WG977657-2 WG977657-3							
<b>Surrogate</b>	<i>LCS</i> <b>%Recovery</b>	<i>LCS</i> <b>Qual</b>	<i>LCSD</i> <b>%Recovery</b>	<i>LCSD</i> <b>Qual</b>	<i>Acceptance</i> <b>Criteria</b>		
2-Fluorophenol	62		62		30-130		
Phenol-d6	66		67		30-130		
Nitrobenzene-d5	65		66		30-130		
2-Fluorobiphenyl	60		62		30-130		
2,4,6-Tribromophenol	64		66		30-130		
4-Terphenyl-d14	65		68		30-130		

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704354  
**Report Date:** 02/17/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Semivolatile Organics - Westborough Lab Associated sample(s): 01 Batch: WG977840-2 WG977840-3								
Acenaphthene	52		49		40-140	6		30
1,2,4-Trichlorobenzene	52		49		40-140	6		30
Hexachlorobenzene	55		52		40-140	6		30
Bis(2-chloroethyl)ether	58		56		40-140	4		30
2-Chloronaphthalene	56		52		40-140	7		30
1,2-Dichlorobenzene	51		49		40-140	4		30
1,3-Dichlorobenzene	50		48		40-140	4		30
1,4-Dichlorobenzene	50		49		40-140	2		30
3,3'-Dichlorobenzidine	31	Q	34	Q	40-140	9		30
2,4-Dinitrotoluene	62		59		40-140	5		30
2,6-Dinitrotoluene	67		61		40-140	9		30
Azobenzene	65		61		40-140	6		30
Fluoranthene	56		53		40-140	6		30
4-Bromophenyl phenyl ether	54		51		40-140	6		30
Bis(2-chloroisopropyl)ether	62		59		40-140	5		30
Bis(2-chloroethoxy)methane	63		60		40-140	5		30
Hexachlorobutadiene	49		46		40-140	6		30
Hexachloroethane	52		51		40-140	2		30
Isophorone	71		67		40-140	6		30
Naphthalene	55		51		40-140	8		30
Nitrobenzene	69		65		40-140	6		30

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704354  
**Report Date:** 02/17/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Semivolatile Organics - Westborough Lab Associated sample(s): 01 Batch: WG977840-2 WG977840-3								
Bis(2-ethylhexyl)phthalate	59		56		40-140	5		30
Butyl benzyl phthalate	64		62		40-140	3		30
Di-n-butylphthalate	64		61		40-140	5		30
Di-n-octylphthalate	63		60		40-140	5		30
Diethyl phthalate	61		57		40-140	7		30
Dimethyl phthalate	65		60		40-140	8		30
Benzo(a)anthracene	53		51		40-140	4		30
Benzo(a)pyrene	58		55		40-140	5		30
Benzo(b)fluoranthene	57		55		40-140	4		30
Benzo(k)fluoranthene	57		54		40-140	5		30
Chrysene	50		47		40-140	6		30
Acenaphthylene	65		59		40-140	10		30
Anthracene	54		51		40-140	6		30
Benzo(ghi)perylene	54		51		40-140	6		30
Fluorene	54		50		40-140	8		30
Phenanthrene	51		48		40-140	6		30
Dibenzo(a,h)anthracene	54		51		40-140	6		30
Indeno(1,2,3-cd)pyrene	54		51		40-140	6		30
Pyrene	56		54		40-140	4		30
Aniline	32	Q	36	Q	40-140	12		30
4-Chloroaniline	31	Q	34	Q	40-140	9		30

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704354  
**Report Date:** 02/17/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Semivolatile Organics - Westborough Lab Associated sample(s): 01 Batch: WG977840-2 WG977840-3								
Dibenzofuran	53		50		40-140	6		30
2-Methylnaphthalene	56		52		40-140	7		30
Acetophenone	68		64		40-140	6		30
2,4,6-Trichlorophenol	64		60		30-130	6		30
2-Chlorophenol	59		56		30-130	5		30
2,4-Dichlorophenol	62		59		30-130	5		30
2,4-Dimethylphenol	72		69		30-130	4		30
2-Nitrophenol	68		64		30-130	6		30
4-Nitrophenol	71		67		30-130	6		30
2,4-Dinitrophenol	45		39		30-130	14		30
Pentachlorophenol	56		52		30-130	7		30
Phenol	66		62		30-130	6		30
2-Methylphenol	64		60		30-130	6		30
3-Methylphenol/4-Methylphenol	66		63		30-130	5		30
2,4,5-Trichlorophenol	63		58		30-130	8		30
Pyridine	49		44		30-130	11		30

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704354  
**Report Date:** 02/17/17

<b>Parameter</b>	<i>LCS</i> <i>%Recovery</i>	<i>Qual</i>	<i>LCSD</i> <i>%Recovery</i>	<i>Qual</i>	<i>%Recovery</i> <i>Limits</i>	<i>RPD</i>	<i>Qual</i>	<i>RPD</i> <i>Limits</i>
MCP Semivolatile Organics - Westborough Lab Associated sample(s): 01 Batch: WG977840-2 WG977840-3								
<b>Surrogate</b>	<i>LCS</i> <i>%Recovery</i>	<i>Qual</i>	<i>LCSD</i> <i>%Recovery</i>	<i>Qual</i>	<b>Acceptance Criteria</b>			
2-Fluorophenol	59		55		30-130			
Phenol-d6	65		59		30-130			
Nitrobenzene-d5	61		57		30-130			
2-Fluorobiphenyl	55		50		30-130			
2,4,6-Tribromophenol	64		59		30-130			
4-Terphenyl-d14	55		51		30-130			

# **PETROLEUM HYDROCARBONS**



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704354  
**Report Date:** 02/17/17

### SAMPLE RESULTS

Lab ID:	L1704354-01	Date Collected:	02/10/17 08:30
Client ID:	VES-103 (1-2)	Date Received:	02/10/17
Sample Location:	MA	Field Prep:	Not Specified
Matrix:	Soil		
Analytical Method:	100,VPH-04-1.1		
Analytical Date:	02/15/17 14:47		
Analyst:	JM		
Percent Solids:	91%		

### Quality Control Information

Condition of sample received:	Satisfactory
Sample Temperature upon receipt:	Received on Ice
Were samples received in methanol?	Yes (Covering the Soil)
Methanol ratio:	1:0.2

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>Volatile Petroleum Hydrocarbons - Westborough Lab</b>						
C5-C8 Aliphatics	ND		mg/kg	14.9	--	1
C9-C12 Aliphatics	ND		mg/kg	14.9	--	1
C9-C10 Aromatics	ND		mg/kg	14.9	--	1
C5-C8 Aliphatics, Adjusted	ND		mg/kg	14.9	--	1
C9-C12 Aliphatics, Adjusted	ND		mg/kg	14.9	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2,5-Dibromotoluene-PID	110		70-130
2,5-Dibromotoluene-FID	114		70-130

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704354  
**Report Date:** 02/17/17

### SAMPLE RESULTS

Lab ID:	L1704354-01	Date Collected:	02/10/17 08:30
Client ID:	VES-103 (1-2)	Date Received:	02/10/17
Sample Location:	MA	Field Prep:	Not Specified
Matrix:	Soil	Extraction Method:	EPA 3546
Analytical Method:	98,EPH-04-1.1	Extraction Date:	02/14/17 03:59
Analytical Date:	02/15/17 15:57	Cleanup Method1:	EPH-04-1
Analyst:	EK	Cleanup Date1:	02/15/17
Percent Solids:	91%		

### Quality Control Information

Condition of sample received:	Satisfactory
Sample Temperature upon receipt:	Received on Ice
Sample Extraction method:	Extracted Per the Method

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>Extractable Petroleum Hydrocarbons - Westborough Lab</b>						
C9-C18 Aliphatics	ND		mg/kg	7.76	--	1
C19-C36 Aliphatics	ND		mg/kg	7.76	--	1
C11-C22 Aromatics	ND		mg/kg	7.76	--	1
C11-C22 Aromatics, Adjusted	ND		mg/kg	7.76	--	1
Naphthalene	ND		mg/kg	0.388	--	1
2-Methylnaphthalene	ND		mg/kg	0.388	--	1
Acenaphthylene	ND		mg/kg	0.388	--	1
Acenaphthene	ND		mg/kg	0.388	--	1
Fluorene	ND		mg/kg	0.388	--	1
Phenanthrene	ND		mg/kg	0.388	--	1
Anthracene	ND		mg/kg	0.388	--	1
Fluoranthene	ND		mg/kg	0.388	--	1
Pyrene	ND		mg/kg	0.388	--	1
Benzo(a)anthracene	ND		mg/kg	0.388	--	1
Chrysene	ND		mg/kg	0.388	--	1
Benzo(b)fluoranthene	ND		mg/kg	0.388	--	1
Benzo(k)fluoranthene	ND		mg/kg	0.388	--	1
Benzo(a)pyrene	ND		mg/kg	0.388	--	1
Indeno(1,2,3-cd)Pyrene	ND		mg/kg	0.388	--	1
Dibenzo(a,h)anthracene	ND		mg/kg	0.388	--	1
Benzo(ghi)perylene	ND		mg/kg	0.388	--	1



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704354  
**Report Date:** 02/17/17

**SAMPLE RESULTS**

Lab ID:	L1704354-01	Date Collected:	02/10/17 08:30
Client ID:	VES-103 (1-2)	Date Received:	02/10/17
Sample Location:	MA	Field Prep:	Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
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**Extractable Petroleum Hydrocarbons - Westborough Lab**

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Chloro-Octadecane	83		40-140
o-Terphenyl	73		40-140
2-Fluorobiphenyl	68		40-140
2-Bromonaphthalene	70		40-140

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704354  
**Report Date:** 02/17/17

### SAMPLE RESULTS

Lab ID:	L1704354-02	Date Collected:	02/10/17 13:45
Client ID:	VES-108 (6-8)	Date Received:	02/10/17
Sample Location:	MA	Field Prep:	Not Specified
Matrix:	Soil		
Analytical Method:	100,VPH-04-1.1		
Analytical Date:	02/15/17 15:27		
Analyst:	JM		
Percent Solids:	45%		

### Quality Control Information

Condition of sample received:	Satisfactory
Sample Temperature upon receipt:	Received on Ice
Were samples received in methanol?	Yes (Covering the Soil)
Methanol ratio:	1:1 +/- 25%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>Volatile Petroleum Hydrocarbons - Westborough Lab</b>						
C5-C8 Aliphatics	ND		mg/kg	7.84	--	1
C9-C12 Aliphatics	ND		mg/kg	7.84	--	1
C9-C10 Aromatics	ND		mg/kg	7.84	--	1
C5-C8 Aliphatics, Adjusted	ND		mg/kg	7.84	--	1
C9-C12 Aliphatics, Adjusted	ND		mg/kg	7.84	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2,5-Dibromotoluene-PID	115		70-130
2,5-Dibromotoluene-FID	119		70-130

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704354  
**Report Date:** 02/17/17

### SAMPLE RESULTS

Lab ID:	L1704354-02	Date Collected:	02/10/17 13:45
Client ID:	VES-108 (6-8)	Date Received:	02/10/17
Sample Location:	MA	Field Prep:	Not Specified
Matrix:	Soil	Extraction Method:	EPA 3546
Analytical Method:	98,EPH-04-1.1	Extraction Date:	02/14/17 03:59
Analytical Date:	02/15/17 16:28	Cleanup Method1:	EPH-04-1
Analyst:	EK	Cleanup Date1:	02/15/17
Percent Solids:	45%		

### Quality Control Information

Condition of sample received:	Satisfactory
Sample Temperature upon receipt:	Received on Ice
Sample Extraction method:	Extracted Per the Method

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>Extractable Petroleum Hydrocarbons - Westborough Lab</b>						
C9-C18 Aliphatics	ND		mg/kg	14.3	--	1
C19-C36 Aliphatics	19.9		mg/kg	14.3	--	1
C11-C22 Aromatics	57.0		mg/kg	14.3	--	1
C11-C22 Aromatics, Adjusted	57.0		mg/kg	14.3	--	1
Naphthalene	ND		mg/kg	0.714	--	1
2-Methylnaphthalene	ND		mg/kg	0.714	--	1
Acenaphthylene	ND		mg/kg	0.714	--	1
Acenaphthene	ND		mg/kg	0.714	--	1
Fluorene	ND		mg/kg	0.714	--	1
Phenanthrene	ND		mg/kg	0.714	--	1
Anthracene	ND		mg/kg	0.714	--	1
Fluoranthene	ND		mg/kg	0.714	--	1
Pyrene	ND		mg/kg	0.714	--	1
Benzo(a)anthracene	ND		mg/kg	0.714	--	1
Chrysene	ND		mg/kg	0.714	--	1
Benzo(b)fluoranthene	ND		mg/kg	0.714	--	1
Benzo(k)fluoranthene	ND		mg/kg	0.714	--	1
Benzo(a)pyrene	ND		mg/kg	0.714	--	1
Indeno(1,2,3-cd)Pyrene	ND		mg/kg	0.714	--	1
Dibenzo(a,h)anthracene	ND		mg/kg	0.714	--	1
Benzo(ghi)perylene	ND		mg/kg	0.714	--	1



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704354  
**Report Date:** 02/17/17

**SAMPLE RESULTS**

Lab ID:	L1704354-02	Date Collected:	02/10/17 13:45
Client ID:	VES-108 (6-8)	Date Received:	02/10/17
Sample Location:	MA	Field Prep:	Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
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**Extractable Petroleum Hydrocarbons - Westborough Lab**

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Chloro-Octadecane	55		40-140
o-Terphenyl	70		40-140
2-Fluorobiphenyl	73		40-140
2-Bromonaphthalene	75		40-140

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704354  
**Report Date:** 02/17/17

### SAMPLE RESULTS

Lab ID:	L1704354-03	Date Collected:	02/10/17 13:50
Client ID:	VES-108 (16-18)	Date Received:	02/10/17
Sample Location:	MA	Field Prep:	Not Specified
Matrix:	Soil		
Analytical Method:	100,VPH-04-1.1		
Analytical Date:	02/15/17 16:07		
Analyst:	JM		
Percent Solids:	72%		

### Quality Control Information

Condition of sample received:	Satisfactory
Sample Temperature upon receipt:	Received on Ice
Were samples received in methanol?	Yes (Covering the Soil)
Methanol ratio:	1:1.6

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>Volatile Petroleum Hydrocarbons - Westborough Lab</b>						
C5-C8 Aliphatics	ND		mg/kg	3.24	--	1
C9-C12 Aliphatics	ND		mg/kg	3.24	--	1
C9-C10 Aromatics	ND		mg/kg	3.24	--	1
C5-C8 Aliphatics, Adjusted	ND		mg/kg	3.24	--	1
C9-C12 Aliphatics, Adjusted	ND		mg/kg	3.24	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2,5-Dibromotoluene-PID	111		70-130
2,5-Dibromotoluene-FID	115		70-130

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704354  
**Report Date:** 02/17/17

### SAMPLE RESULTS

Lab ID:	L1704354-03	Date Collected:	02/10/17 13:50
Client ID:	VES-108 (16-18)	Date Received:	02/10/17
Sample Location:	MA	Field Prep:	Not Specified
Matrix:	Soil	Extraction Method:	EPA 3546
Analytical Method:	98,EPH-04-1.1	Extraction Date:	02/14/17 03:59
Analytical Date:	02/15/17 17:32	Cleanup Method1:	EPH-04-1
Analyst:	EK	Cleanup Date1:	02/15/17
Percent Solids:	72%		

### Quality Control Information

Condition of sample received:	Satisfactory
Sample Temperature upon receipt:	Received on Ice
Sample Extraction method:	Extracted Per the Method

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>Extractable Petroleum Hydrocarbons - Westborough Lab</b>						
C9-C18 Aliphatics	ND		mg/kg	8.90	--	1
C19-C36 Aliphatics	ND		mg/kg	8.90	--	1
C11-C22 Aromatics	ND		mg/kg	8.90	--	1
C11-C22 Aromatics, Adjusted	ND		mg/kg	8.90	--	1
Naphthalene	ND		mg/kg	0.445	--	1
2-Methylnaphthalene	ND		mg/kg	0.445	--	1
Acenaphthylene	ND		mg/kg	0.445	--	1
Acenaphthene	ND		mg/kg	0.445	--	1
Fluorene	ND		mg/kg	0.445	--	1
Phenanthrene	ND		mg/kg	0.445	--	1
Anthracene	ND		mg/kg	0.445	--	1
Fluoranthene	ND		mg/kg	0.445	--	1
Pyrene	ND		mg/kg	0.445	--	1
Benzo(a)anthracene	ND		mg/kg	0.445	--	1
Chrysene	ND		mg/kg	0.445	--	1
Benzo(b)fluoranthene	ND		mg/kg	0.445	--	1
Benzo(k)fluoranthene	ND		mg/kg	0.445	--	1
Benzo(a)pyrene	ND		mg/kg	0.445	--	1
Indeno(1,2,3-cd)Pyrene	ND		mg/kg	0.445	--	1
Dibenzo(a,h)anthracene	ND		mg/kg	0.445	--	1
Benzo(ghi)perylene	ND		mg/kg	0.445	--	1



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704354  
**Report Date:** 02/17/17

**SAMPLE RESULTS**

Lab ID:	L1704354-03	Date Collected:	02/10/17 13:50
Client ID:	VES-108 (16-18)	Date Received:	02/10/17
Sample Location:	MA	Field Prep:	Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
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**Extractable Petroleum Hydrocarbons - Westborough Lab**

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Chloro-Octadecane	72		40-140
o-Terphenyl	77		40-140
2-Fluorobiphenyl	73		40-140
2-Bromonaphthalene	75		40-140

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704354  
**Report Date:** 02/17/17

### SAMPLE RESULTS

Lab ID:	L1704354-04	Date Collected:	02/10/17 10:30
Client ID:	VES-123 (0-2)	Date Received:	02/10/17
Sample Location:	MA	Field Prep:	Not Specified
Matrix:	Soil		
Analytical Method:	100,VPH-04-1.1		
Analytical Date:	02/15/17 16:47		
Analyst:	JM		
Percent Solids:	91%		

### Quality Control Information

Condition of sample received:	Satisfactory
Sample Temperature upon receipt:	Received on Ice
Were samples received in methanol?	Yes (Covering the Soil)
Methanol ratio:	4.3:1

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>Volatile Petroleum Hydrocarbons - Westborough Lab</b>						
C5-C8 Aliphatics	ND		mg/kg	12.8	--	1
C9-C12 Aliphatics	ND		mg/kg	12.8	--	1
C9-C10 Aromatics	ND		mg/kg	12.8	--	1
C5-C8 Aliphatics, Adjusted	ND		mg/kg	12.8	--	1
C9-C12 Aliphatics, Adjusted	ND		mg/kg	12.8	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2,5-Dibromotoluene-PID	108		70-130
2,5-Dibromotoluene-FID	111		70-130

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704354  
**Report Date:** 02/17/17

### SAMPLE RESULTS

Lab ID:	L1704354-04	Date Collected:	02/10/17 10:30
Client ID:	VES-123 (0-2)	Date Received:	02/10/17
Sample Location:	MA	Field Prep:	Not Specified
Matrix:	Soil	Extraction Method:	EPA 3546
Analytical Method:	98,EPH-04-1.1	Extraction Date:	02/14/17 03:59
Analytical Date:	02/15/17 17:00	Cleanup Method1:	EPH-04-1
Analyst:	EK	Cleanup Date1:	02/15/17
Percent Solids:	91%		

### Quality Control Information

Condition of sample received:	Satisfactory
Sample Temperature upon receipt:	Received on Ice
Sample Extraction method:	Extracted Per the Method

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>Extractable Petroleum Hydrocarbons - Westborough Lab</b>						
C9-C18 Aliphatics	ND		mg/kg	7.21	--	1
C19-C36 Aliphatics	ND		mg/kg	7.21	--	1
C11-C22 Aromatics	7.44		mg/kg	7.21	--	1
C11-C22 Aromatics, Adjusted	7.44		mg/kg	7.21	--	1
Naphthalene	ND		mg/kg	0.360	--	1
2-Methylnaphthalene	ND		mg/kg	0.360	--	1
Acenaphthylene	ND		mg/kg	0.360	--	1
Acenaphthene	ND		mg/kg	0.360	--	1
Fluorene	ND		mg/kg	0.360	--	1
Phenanthrene	ND		mg/kg	0.360	--	1
Anthracene	ND		mg/kg	0.360	--	1
Fluoranthene	ND		mg/kg	0.360	--	1
Pyrene	ND		mg/kg	0.360	--	1
Benzo(a)anthracene	ND		mg/kg	0.360	--	1
Chrysene	ND		mg/kg	0.360	--	1
Benzo(b)fluoranthene	ND		mg/kg	0.360	--	1
Benzo(k)fluoranthene	ND		mg/kg	0.360	--	1
Benzo(a)pyrene	ND		mg/kg	0.360	--	1
Indeno(1,2,3-cd)Pyrene	ND		mg/kg	0.360	--	1
Dibenzo(a,h)anthracene	ND		mg/kg	0.360	--	1
Benzo(ghi)perylene	ND		mg/kg	0.360	--	1



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704354  
**Report Date:** 02/17/17

**SAMPLE RESULTS**

Lab ID:	L1704354-04	Date Collected:	02/10/17 10:30
Client ID:	VES-123 (0-2)	Date Received:	02/10/17
Sample Location:	MA	Field Prep:	Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
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**Extractable Petroleum Hydrocarbons - Westborough Lab**

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Chloro-Octadecane	54		40-140
o-Terphenyl	97		40-140
2-Fluorobiphenyl	89		40-140
2-Bromonaphthalene	91		40-140

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704354  
**Report Date:** 02/17/17

### SAMPLE RESULTS

Lab ID:	L1704354-05	Date Collected:	02/10/17 12:30
Client ID:	VES-119 (0-2)	Date Received:	02/10/17
Sample Location:	MA	Field Prep:	Not Specified
Matrix:	Soil		
Analytical Method:	100,VPH-04-1.1		
Analytical Date:	02/15/17 17:27		
Analyst:	JM		
Percent Solids:	84%		

### Quality Control Information

Condition of sample received:	Satisfactory
Sample Temperature upon receipt:	Received on Ice
Were samples received in methanol?	Yes (Covering the Soil)
Methanol ratio:	3.4:1

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>Volatile Petroleum Hydrocarbons - Westborough Lab</b>						
C5-C8 Aliphatics	ND		mg/kg	11.3	--	1
C9-C12 Aliphatics	ND		mg/kg	11.3	--	1
C9-C10 Aromatics	ND		mg/kg	11.3	--	1
C5-C8 Aliphatics, Adjusted	ND		mg/kg	11.3	--	1
C9-C12 Aliphatics, Adjusted	ND		mg/kg	11.3	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2,5-Dibromotoluene-PID	108		70-130
2,5-Dibromotoluene-FID	113		70-130

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704354  
**Report Date:** 02/17/17

### SAMPLE RESULTS

Lab ID:	L1704354-05	Date Collected:	02/10/17 12:30
Client ID:	VES-119 (0-2)	Date Received:	02/10/17
Sample Location:	MA	Field Prep:	Not Specified
Matrix:	Soil	Extraction Method:	EPA 3546
Analytical Method:	98,EPH-04-1.1	Extraction Date:	02/14/17 03:59
Analytical Date:	02/15/17 18:34	Cleanup Method1:	EPH-04-1
Analyst:	EK	Cleanup Date1:	02/15/17
Percent Solids:	84%		

### Quality Control Information

Condition of sample received:	Satisfactory
Sample Temperature upon receipt:	Received on Ice
Sample Extraction method:	Extracted Per the Method

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>Extractable Petroleum Hydrocarbons - Westborough Lab</b>						
C9-C18 Aliphatics	ND		mg/kg	7.92	--	1
C19-C36 Aliphatics	ND		mg/kg	7.92	--	1
C11-C22 Aromatics	30.8		mg/kg	7.92	--	1
C11-C22 Aromatics, Adjusted	25.2		mg/kg	7.92	--	1
Naphthalene	ND		mg/kg	0.396	--	1
2-Methylnaphthalene	ND		mg/kg	0.396	--	1
Acenaphthylene	ND		mg/kg	0.396	--	1
Acenaphthene	ND		mg/kg	0.396	--	1
Fluorene	ND		mg/kg	0.396	--	1
Phenanthrene	0.566		mg/kg	0.396	--	1
Anthracene	ND		mg/kg	0.396	--	1
Fluoranthene	0.958		mg/kg	0.396	--	1
Pyrene	0.910		mg/kg	0.396	--	1
Benzo(a)anthracene	0.557		mg/kg	0.396	--	1
Chrysene	0.636		mg/kg	0.396	--	1
Benzo(b)fluoranthene	0.487		mg/kg	0.396	--	1
Benzo(k)fluoranthene	0.525		mg/kg	0.396	--	1
Benzo(a)pyrene	0.548		mg/kg	0.396	--	1
Indeno(1,2,3-cd)Pyrene	0.418		mg/kg	0.396	--	1
Dibenzo(a,h)anthracene	ND		mg/kg	0.396	--	1
Benzo(ghi)perylene	ND		mg/kg	0.396	--	1



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704354  
**Report Date:** 02/17/17

**SAMPLE RESULTS**

Lab ID:	L1704354-05	Date Collected:	02/10/17 12:30
Client ID:	VES-119 (0-2)	Date Received:	02/10/17
Sample Location:	MA	Field Prep:	Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
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**Extractable Petroleum Hydrocarbons - Westborough Lab**

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Chloro-Octadecane	62		40-140
o-Terphenyl	68		40-140
2-Fluorobiphenyl	67		40-140
2-Bromonaphthalene	69		40-140

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704354  
**Report Date:** 02/17/17

### SAMPLE RESULTS

Lab ID:	L1704354-06	Date Collected:	02/10/17 13:30
Client ID:	VES-109 (0-2)	Date Received:	02/10/17
Sample Location:	MA	Field Prep:	Not Specified
Matrix:	Soil		
Analytical Method:	100,VPH-04-1.1		
Analytical Date:	02/15/17 18:07		
Analyst:	JM		
Percent Solids:	90%		

### Quality Control Information

Condition of sample received:	Satisfactory
Sample Temperature upon receipt:	Received on Ice
Were samples received in methanol?	Yes (Covering the Soil)
Methanol ratio:	2.1:1

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>Volatile Petroleum Hydrocarbons - Westborough Lab</b>						
C5-C8 Aliphatics	ND		mg/kg	6.51	--	1
C9-C12 Aliphatics	ND		mg/kg	6.51	--	1
C9-C10 Aromatics	ND		mg/kg	6.51	--	1
C5-C8 Aliphatics, Adjusted	ND		mg/kg	6.51	--	1
C9-C12 Aliphatics, Adjusted	ND		mg/kg	6.51	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2,5-Dibromotoluene-PID	109		70-130
2,5-Dibromotoluene-FID	113		70-130

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704354  
**Report Date:** 02/17/17

### SAMPLE RESULTS

Lab ID:	L1704354-06	Date Collected:	02/10/17 13:30
Client ID:	VES-109 (0-2)	Date Received:	02/10/17
Sample Location:	MA	Field Prep:	Not Specified
Matrix:	Soil	Extraction Method:	EPA 3546
Analytical Method:	98,EPH-04-1.1	Extraction Date:	02/14/17 03:59
Analytical Date:	02/15/17 19:06	Cleanup Method1:	EPH-04-1
Analyst:	EK	Cleanup Date1:	02/15/17
Percent Solids:	90%		

### Quality Control Information

Condition of sample received:	Satisfactory
Sample Temperature upon receipt:	Received on Ice
Sample Extraction method:	Extracted Per the Method

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>Extractable Petroleum Hydrocarbons - Westborough Lab</b>						
C9-C18 Aliphatics	ND		mg/kg	7.33	--	1
C19-C36 Aliphatics	ND		mg/kg	7.33	--	1
C11-C22 Aromatics	9.32		mg/kg	7.33	--	1
C11-C22 Aromatics, Adjusted	9.32		mg/kg	7.33	--	1
Naphthalene	ND		mg/kg	0.366	--	1
2-Methylnaphthalene	ND		mg/kg	0.366	--	1
Acenaphthylene	ND		mg/kg	0.366	--	1
Acenaphthene	ND		mg/kg	0.366	--	1
Fluorene	ND		mg/kg	0.366	--	1
Phenanthrene	ND		mg/kg	0.366	--	1
Anthracene	ND		mg/kg	0.366	--	1
Fluoranthene	ND		mg/kg	0.366	--	1
Pyrene	ND		mg/kg	0.366	--	1
Benzo(a)anthracene	ND		mg/kg	0.366	--	1
Chrysene	ND		mg/kg	0.366	--	1
Benzo(b)fluoranthene	ND		mg/kg	0.366	--	1
Benzo(k)fluoranthene	ND		mg/kg	0.366	--	1
Benzo(a)pyrene	ND		mg/kg	0.366	--	1
Indeno(1,2,3-cd)Pyrene	ND		mg/kg	0.366	--	1
Dibenzo(a,h)anthracene	ND		mg/kg	0.366	--	1
Benzo(ghi)perylene	ND		mg/kg	0.366	--	1



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704354  
**Report Date:** 02/17/17

**SAMPLE RESULTS**

Lab ID:	L1704354-06	Date Collected:	02/10/17 13:30
Client ID:	VES-109 (0-2)	Date Received:	02/10/17
Sample Location:	MA	Field Prep:	Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
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**Extractable Petroleum Hydrocarbons - Westborough Lab**

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Chloro-Octadecane	61		40-140
o-Terphenyl	65		40-140
2-Fluorobiphenyl	59		40-140
2-Bromonaphthalene	60		40-140

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704354  
**Report Date:** 02/17/17

### Method Blank Analysis Batch Quality Control

Analytical Method: 98,EPH-04-1.1  
Analytical Date: 02/15/17 12:16  
Analyst: EK

Extraction Method: EPA 3546  
Extraction Date: 02/14/17 03:59  
Cleanup Method: EPH-04-1  
Cleanup Date: 02/15/17

Parameter	Result	Qualifier	Units	RL	MDL
Extractable Petroleum Hydrocarbons - Westborough Lab for sample(s):	01-06		Batch:	WG977560-1	
C9-C18 Aliphatics	ND		mg/kg	6.32	--
C19-C36 Aliphatics	ND		mg/kg	6.32	--
C11-C22 Aromatics	ND		mg/kg	6.32	--
C11-C22 Aromatics, Adjusted	ND		mg/kg	6.32	--
Naphthalene	ND		mg/kg	0.316	--
2-Methylnaphthalene	ND		mg/kg	0.316	--
Acenaphthylene	ND		mg/kg	0.316	--
Acenaphthene	ND		mg/kg	0.316	--
Fluorene	ND		mg/kg	0.316	--
Phenanthrene	ND		mg/kg	0.316	--
Anthracene	ND		mg/kg	0.316	--
Fluoranthene	ND		mg/kg	0.316	--
Pyrene	ND		mg/kg	0.316	--
Benzo(a)anthracene	ND		mg/kg	0.316	--
Chrysene	ND		mg/kg	0.316	--
Benzo(b)fluoranthene	ND		mg/kg	0.316	--
Benzo(k)fluoranthene	ND		mg/kg	0.316	--
Benzo(a)pyrene	ND		mg/kg	0.316	--
Indeno(1,2,3-cd)Pyrene	ND		mg/kg	0.316	--
Dibenzo(a,h)anthracene	ND		mg/kg	0.316	--
Benzo(ghi)perylene	ND		mg/kg	0.316	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Chloro-Octadecane	74		40-140
o-Terphenyl	75		40-140
2-Fluorobiphenyl	76		40-140
2-Bromonaphthalene	78		40-140



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704354  
**Report Date:** 02/17/17

**Method Blank Analysis**  
**Batch Quality Control**

Analytical Method: 100,VPH-04-1.1  
Analytical Date: 02/15/17 10:30  
Analyst: JM

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Petroleum Hydrocarbons - Westborough Lab for sample(s):	01-06			Batch:	WG978360-3
C5-C8 Aliphatics	ND		mg/kg	2.67	--
C9-C12 Aliphatics	ND		mg/kg	2.67	--
C9-C10 Aromatics	ND		mg/kg	2.67	--
C5-C8 Aliphatics, Adjusted	ND		mg/kg	2.67	--
C9-C12 Aliphatics, Adjusted	ND		mg/kg	2.67	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2,5-Dibromotoluene-PID	103		70-130
2,5-Dibromotoluene-FID	106		70-130

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704354  
**Report Date:** 02/17/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Extractable Petroleum Hydrocarbons - Westborough Lab Associated sample(s): 01-06 Batch: WG977560-2 WG977560-3								
C9-C18 Aliphatics	68		65		40-140	5		25
C19-C36 Aliphatics	78		74		40-140	5		25
C11-C22 Aromatics	91		84		40-140	8		25
Naphthalene	77		70		40-140	10		25
2-Methylnaphthalene	78		70		40-140	11		25
Acenaphthylene	79		72		40-140	9		25
Acenaphthene	82		75		40-140	9		25
Fluorene	84		77		40-140	9		25
Phenanthrene	87		79		40-140	10		25
Anthracene	94		88		40-140	7		25
Fluoranthene	89		81		40-140	9		25
Pyrene	91		82		40-140	10		25
Benzo(a)anthracene	88		80		40-140	10		25
Chrysene	91		82		40-140	10		25
Benzo(b)fluoranthene	89		81		40-140	9		25
Benzo(k)fluoranthene	96		88		40-140	9		25
Benzo(a)pyrene	83		75		40-140	10		25
Indeno(1,2,3-cd)Pyrene	88		78		40-140	12		25
Dibenzo(a,h)anthracene	82		74		40-140	10		25
Benzo(ghi)perylene	82		73		40-140	12		25
Nonane (C9)	57		54		30-140	5		25

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704354  
**Report Date:** 02/17/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Extractable Petroleum Hydrocarbons - Westborough Lab Associated sample(s): 01-06 Batch: WG977560-2 WG977560-3								
Decane (C10)	63		60		40-140	5		25
Dodecane (C12)	66		63		40-140	5		25
Tetradecane (C14)	68		65		40-140	5		25
Hexadecane (C16)	71		68		40-140	4		25
Octadecane (C18)	74		71		40-140	4		25
Nonadecane (C19)	74		71		40-140	4		25
Eicosane (C20)	77		73		40-140	5		25
Docosane (C22)	76		73		40-140	4		25
Tetracosane (C24)	76		73		40-140	4		25
Hexacosane (C26)	77		74		40-140	4		25
Octacosane (C28)	77		74		40-140	4		25
Triacontane (C30)	77		73		40-140	5		25
Hexatriacontane (C36)	77		71		40-140	8		25

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Chloro-Octadecane	62		57		40-140
o-Terphenyl	105		102		40-140
2-Fluorobiphenyl	85		76		40-140
2-Bromonaphthalene	88		79		40-140
% Naphthalene Breakthrough	0		0		
% 2-Methylnaphthalene Breakthrough	0		0		

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704354  
**Report Date:** 02/17/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Petroleum Hydrocarbons - Westborough Lab Associated sample(s): 01-06 Batch: WG978360-1 WG978360-2								
C5-C8 Aliphatics	98		102		70-130	4		25
C9-C12 Aliphatics	99		104		70-130	5		25
C9-C10 Aromatics	95		101		70-130	6		25
Benzene	97		100		70-130	3		25
Toluene	97		100		70-130	3		25
Ethylbenzene	96		100		70-130	4		25
p/m-Xylene	97		101		70-130	4		25
o-Xylene	96		101		70-130	5		25
Methyl tert butyl ether	97		107		70-130	10		25
Naphthalene	95		107		70-130	12		25
1,2,4-Trimethylbenzene	95		101		70-130	6		25
Pentane	94		96		70-130	2		25
2-Methylpentane	98		101		70-130	4		25
2,2,4-Trimethylpentane	101		105		70-130	4		25
n-Nonane	101		104		30-130	3		25
n-Decane	98		103		70-130	5		25
n-Butylcyclohexane	98		105		70-130	7		25

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704354  
**Report Date:** 02/17/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
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Volatile Petroleum Hydrocarbons - Westborough Lab Associated sample(s): 01-06 Batch: WG978360-1 WG978360-2

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2,5-Dibromotoluene-PID	96		101		70-130
2,5-Dibromotoluene-FID	96		102		70-130

**PCBS**



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704354  
**Report Date:** 02/17/17

**SAMPLE RESULTS**

Lab ID: L1704354-01  
Client ID: VES-103 (1-2)  
Sample Location: MA  
Matrix: Soil  
Analytical Method: 97,8082A  
Analytical Date: 02/15/17 19:03  
Analyst: AF  
Percent Solids: 91%

Date Collected: 02/10/17 08:30  
Date Received: 02/10/17  
Field Prep: Not Specified  
Extraction Method: EPA 3540C  
Extraction Date: 02/13/17 23:00  
Cleanup Method: EPA 3665A  
Cleanup Date: 02/15/17  
Cleanup Method: EPA 3660B  
Cleanup Date: 02/15/17

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
<b>MCP Polychlorinated Biphenyls - Westborough Lab</b>							
Aroclor 1016	ND		ug/kg	36.0	--	1	A
Aroclor 1221	ND		ug/kg	36.0	--	1	A
Aroclor 1232	ND		ug/kg	36.0	--	1	A
Aroclor 1242	ND		ug/kg	36.0	--	1	A
Aroclor 1248	ND		ug/kg	36.0	--	1	A
Aroclor 1254	ND		ug/kg	36.0	--	1	A
Aroclor 1260	ND		ug/kg	36.0	--	1	A
Aroclor 1262	ND		ug/kg	36.0	--	1	A
Aroclor 1268	ND		ug/kg	36.0	--	1	B
PCBs, Total	ND		ug/kg	36.0	--	1	B

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	69		30-150	A
Decachlorobiphenyl	51		30-150	A
2,4,5,6-Tetrachloro-m-xylene	65		30-150	B
Decachlorobiphenyl	75		30-150	B

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704354  
**Report Date:** 02/17/17

**SAMPLE RESULTS**

Lab ID: L1704354-02  
Client ID: VES-108 (6-8)  
Sample Location: MA  
Matrix: Soil  
Analytical Method: 97,8082A  
Analytical Date: 02/15/17 19:17  
Analyst: AF  
Percent Solids: 45%

Date Collected: 02/10/17 13:45  
Date Received: 02/10/17  
Field Prep: Not Specified  
Extraction Method: EPA 3540C  
Extraction Date: 02/13/17 23:00  
Cleanup Method: EPA 3665A  
Cleanup Date: 02/15/17  
Cleanup Method: EPA 3660B  
Cleanup Date: 02/15/17

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
<b>MCP Polychlorinated Biphenyls - Westborough Lab</b>							
Aroclor 1016	ND		ug/kg	72.8	--	1	A
Aroclor 1221	ND		ug/kg	72.8	--	1	A
Aroclor 1232	ND		ug/kg	72.8	--	1	A
Aroclor 1242	ND		ug/kg	72.8	--	1	A
Aroclor 1248	ND		ug/kg	72.8	--	1	A
Aroclor 1254	ND		ug/kg	72.8	--	1	A
Aroclor 1260	ND		ug/kg	72.8	--	1	A
Aroclor 1262	ND		ug/kg	72.8	--	1	A
Aroclor 1268	ND		ug/kg	72.8	--	1	A
PCBs, Total	ND		ug/kg	72.8	--	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	70		30-150	A
Decachlorobiphenyl	43		30-150	A
2,4,5,6-Tetrachloro-m-xylene	64		30-150	B
Decachlorobiphenyl	65		30-150	B

Project Name: EAST BOSTON

Lab Number: L1704354

Project Number: 43068

Report Date: 02/17/17

**SAMPLE RESULTS**

Lab ID: L1704354-03  
 Client ID: VES-108 (16-18)  
 Sample Location: MA  
 Matrix: Soil  
 Analytical Method: 97,8082A  
 Analytical Date: 02/15/17 19:31  
 Analyst: AF  
 Percent Solids: 72%

Date Collected: 02/10/17 13:50  
 Date Received: 02/10/17  
 Field Prep: Not Specified  
 Extraction Method: EPA 3540C  
 Extraction Date: 02/13/17 23:00  
 Cleanup Method: EPA 3665A  
 Cleanup Date: 02/15/17  
 Cleanup Method: EPA 3660B  
 Cleanup Date: 02/15/17

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
<b>MCP Polychlorinated Biphenyls - Westborough Lab</b>							
Aroclor 1016	ND		ug/kg	45.0	--	1	A
Aroclor 1221	ND		ug/kg	45.0	--	1	A
Aroclor 1232	ND		ug/kg	45.0	--	1	A
Aroclor 1242	ND		ug/kg	45.0	--	1	A
Aroclor 1248	ND		ug/kg	45.0	--	1	A
Aroclor 1254	ND		ug/kg	45.0	--	1	A
Aroclor 1260	ND		ug/kg	45.0	--	1	A
Aroclor 1262	ND		ug/kg	45.0	--	1	A
Aroclor 1268	ND		ug/kg	45.0	--	1	A
PCBs, Total	ND		ug/kg	45.0	--	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	68		30-150	A
Decachlorobiphenyl	61		30-150	A
2,4,5,6-Tetrachloro-m-xylene	75		30-150	B
Decachlorobiphenyl	71		30-150	B

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704354  
**Report Date:** 02/17/17

**SAMPLE RESULTS**

Lab ID: L1704354-04  
Client ID: VES-123 (0-2)  
Sample Location: MA  
Matrix: Soil  
Analytical Method: 97,8082A  
Analytical Date: 02/15/17 19:44  
Analyst: AF  
Percent Solids: 91%

Date Collected: 02/10/17 10:30  
Date Received: 02/10/17  
Field Prep: Not Specified  
Extraction Method: EPA 3540C  
Extraction Date: 02/13/17 23:00  
Cleanup Method: EPA 3665A  
Cleanup Date: 02/15/17  
Cleanup Method: EPA 3660B  
Cleanup Date: 02/15/17

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
<b>MCP Polychlorinated Biphenyls - Westborough Lab</b>							
Aroclor 1016	ND		ug/kg	35.5	--	1	A
Aroclor 1221	ND		ug/kg	35.5	--	1	A
Aroclor 1232	ND		ug/kg	35.5	--	1	A
Aroclor 1242	ND		ug/kg	35.5	--	1	A
Aroclor 1248	ND		ug/kg	35.5	--	1	A
Aroclor 1254	ND		ug/kg	35.5	--	1	A
Aroclor 1260	ND		ug/kg	35.5	--	1	A
Aroclor 1262	ND		ug/kg	35.5	--	1	A
Aroclor 1268	ND		ug/kg	35.5	--	1	A
PCBs, Total	ND		ug/kg	35.5	--	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	76		30-150	A
Decachlorobiphenyl	66		30-150	A
2,4,5,6-Tetrachloro-m-xylene	87		30-150	B
Decachlorobiphenyl	78		30-150	B

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704354  
**Report Date:** 02/17/17

**SAMPLE RESULTS**

Lab ID: L1704354-05  
Client ID: VES-119 (0-2)  
Sample Location: MA  
Matrix: Soil  
Analytical Method: 97,8082A  
Analytical Date: 02/15/17 19:58  
Analyst: AF  
Percent Solids: 84%

Date Collected: 02/10/17 12:30  
Date Received: 02/10/17  
Field Prep: Not Specified  
Extraction Method: EPA 3540C  
Extraction Date: 02/13/17 23:00  
Cleanup Method: EPA 3665A  
Cleanup Date: 02/15/17  
Cleanup Method: EPA 3660B  
Cleanup Date: 02/15/17

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
<b>MCP Polychlorinated Biphenyls - Westborough Lab</b>							
Aroclor 1016	ND		ug/kg	39.0	--	1	A
Aroclor 1221	ND		ug/kg	39.0	--	1	A
Aroclor 1232	ND		ug/kg	39.0	--	1	A
Aroclor 1242	ND		ug/kg	39.0	--	1	A
Aroclor 1248	ND		ug/kg	39.0	--	1	A
Aroclor 1254	ND		ug/kg	39.0	--	1	A
Aroclor 1260	ND		ug/kg	39.0	--	1	A
Aroclor 1262	ND		ug/kg	39.0	--	1	A
Aroclor 1268	ND		ug/kg	39.0	--	1	A
PCBs, Total	ND		ug/kg	39.0	--	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	75		30-150	A
Decachlorobiphenyl	71		30-150	A
2,4,5,6-Tetrachloro-m-xylene	71		30-150	B
Decachlorobiphenyl	82		30-150	B

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704354  
**Report Date:** 02/17/17

**SAMPLE RESULTS**

Lab ID: L1704354-06  
Client ID: VES-109 (0-2)  
Sample Location: MA  
Matrix: Soil  
Analytical Method: 97,8082A  
Analytical Date: 02/15/17 20:12  
Analyst: AF  
Percent Solids: 90%

Date Collected: 02/10/17 13:30  
Date Received: 02/10/17  
Field Prep: Not Specified  
Extraction Method: EPA 3540C  
Extraction Date: 02/13/17 23:00  
Cleanup Method: EPA 3665A  
Cleanup Date: 02/15/17  
Cleanup Method: EPA 3660B  
Cleanup Date: 02/15/17

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
<b>MCP Polychlorinated Biphenyls - Westborough Lab</b>							
Aroclor 1016	ND		ug/kg	36.8	--	1	A
Aroclor 1221	ND		ug/kg	36.8	--	1	A
Aroclor 1232	ND		ug/kg	36.8	--	1	A
Aroclor 1242	ND		ug/kg	36.8	--	1	A
Aroclor 1248	ND		ug/kg	36.8	--	1	A
Aroclor 1254	ND		ug/kg	36.8	--	1	A
Aroclor 1260	ND		ug/kg	36.8	--	1	B
Aroclor 1262	ND		ug/kg	36.8	--	1	A
Aroclor 1268	ND		ug/kg	36.8	--	1	A
PCBs, Total	ND		ug/kg	36.8	--	1	B

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	75		30-150	A
Decachlorobiphenyl	65		30-150	A
2,4,5,6-Tetrachloro-m-xylene	82		30-150	B
Decachlorobiphenyl	78		30-150	B

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704354  
**Report Date:** 02/17/17

### Method Blank Analysis Batch Quality Control

Analytical Method: 97,8082A  
Analytical Date: 02/15/17 22:17  
Analyst: AF

Extraction Method: EPA 3540C  
Extraction Date: 02/13/17 23:00  
Cleanup Method: EPA 3665A  
Cleanup Date: 02/15/17  
Cleanup Method: EPA 3660B  
Cleanup Date: 02/15/17

Parameter	Result	Qualifier	Units	RL	MDL	Column
MCP Polychlorinated Biphenyls - Westborough Lab for sample(s): 01-06 Batch: WG977423-1						
Aroclor 1016	ND		ug/kg	32.2	--	A
Aroclor 1221	ND		ug/kg	32.2	--	A
Aroclor 1232	ND		ug/kg	32.2	--	A
Aroclor 1242	ND		ug/kg	32.2	--	A
Aroclor 1248	ND		ug/kg	32.2	--	A
Aroclor 1254	ND		ug/kg	32.2	--	A
Aroclor 1260	ND		ug/kg	32.2	--	A
Aroclor 1262	ND		ug/kg	32.2	--	A
Aroclor 1268	ND		ug/kg	32.2	--	A
PCBs, Total	ND		ug/kg	32.2	--	A

Surrogate	%Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	72		30-150	A
Decachlorobiphenyl	36		30-150	A
2,4,5,6-Tetrachloro-m-xylene	80		30-150	B
Decachlorobiphenyl	62		30-150	B

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704354  
**Report Date:** 02/17/17

<b>Parameter</b>	<i>LCS</i> %Recovery	<i>Qual</i>	<i>LCSD</i> %Recovery	<i>Qual</i>	<i>%Recovery</i> <i>Limits</i>	<i>RPD</i>	<i>Qual</i>	<i>RPD</i> <i>Limits</i>	<i>Column</i>
MCP Polychlorinated Biphenyls - Westborough Lab Associated sample(s): 01-06 Batch: WG977423-2 WG977423-3									
Aroclor 1016	110		69		40-140	46	Q	30	A
Aroclor 1260	120		60		40-140	67	Q	30	A

<b>Surrogate</b>	<i>LCS</i> %Recovery	<i>Qual</i>	<i>LCSD</i> %Recovery	<i>Qual</i>	<i>Acceptance</i> <i>Criteria</i>	<i>Column</i>
2,4,5,6-Tetrachloro-m-xylene	84		81		30-150	A
Decachlorobiphenyl	86		58		30-150	A
2,4,5,6-Tetrachloro-m-xylene	89		61		30-150	B
Decachlorobiphenyl	77		63		30-150	B

## METALS



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704354  
**Report Date:** 02/17/17

**SAMPLE RESULTS**

Lab ID: L1704354-01 Date Collected: 02/10/17 08:30  
Client ID: VES-103 (1-2) Date Received: 02/10/17  
Sample Location: MA Field Prep: Not Specified  
Matrix: Soil  
Percent Solids: 91%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
<b>MCP Total Metals - Mansfield Lab</b>											
Arsenic, Total	18		mg/kg	0.44	--	1	02/13/17 22:05	02/15/17 22:19	EPA 3050B	97,6010C	AB
Barium, Total	400		mg/kg	0.44	--	1	02/13/17 22:05	02/15/17 22:19	EPA 3050B	97,6010C	AB
Cadmium, Total	2.0		mg/kg	0.44	--	1	02/13/17 22:05	02/15/17 22:19	EPA 3050B	97,6010C	AB
Chromium, Total	24		mg/kg	0.44	--	1	02/13/17 22:05	02/15/17 22:19	EPA 3050B	97,6010C	AB
Lead, Total	2500		mg/kg	2.2	--	1	02/13/17 22:05	02/15/17 22:19	EPA 3050B	97,6010C	AB
Mercury, Total	1.85		mg/kg	0.071	--	1	02/11/17 12:20	02/15/17 15:55	EPA 7471B	97,7471B	BV
Selenium, Total	ND		mg/kg	2.2	--	1	02/13/17 22:05	02/15/17 22:19	EPA 3050B	97,6010C	AB
Silver, Total	1.7		mg/kg	0.44	--	1	02/13/17 22:05	02/15/17 22:19	EPA 3050B	97,6010C	AB



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704354  
**Report Date:** 02/17/17

**SAMPLE RESULTS**

Lab ID: L1704354-02 Date Collected: 02/10/17 13:45  
Client ID: VES-108 (6-8) Date Received: 02/10/17  
Sample Location: MA Field Prep: Not Specified  
Matrix: Soil  
Percent Solids: 45%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
<b>MCP Total Metals - Mansfield Lab</b>											
Arsenic, Total	11		mg/kg	0.87	--	1	02/13/17 22:05	02/15/17 22:23	EPA 3050B	97,6010C	AB
Barium, Total	37		mg/kg	0.87	--	1	02/13/17 22:05	02/15/17 22:23	EPA 3050B	97,6010C	AB
Cadmium, Total	ND		mg/kg	0.87	--	1	02/13/17 22:05	02/15/17 22:23	EPA 3050B	97,6010C	AB
Chromium, Total	35		mg/kg	0.87	--	1	02/13/17 22:05	02/15/17 22:23	EPA 3050B	97,6010C	AB
Lead, Total	9.3		mg/kg	4.3	--	1	02/13/17 22:05	02/15/17 22:23	EPA 3050B	97,6010C	AB
Mercury, Total	ND		mg/kg	0.145	--	1	02/11/17 12:20	02/15/17 16:01	EPA 7471B	97,7471B	BV
Selenium, Total	ND		mg/kg	4.3	--	1	02/13/17 22:05	02/15/17 22:23	EPA 3050B	97,6010C	AB
Silver, Total	ND		mg/kg	0.87	--	1	02/13/17 22:05	02/15/17 22:23	EPA 3050B	97,6010C	AB



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704354  
**Report Date:** 02/17/17

**SAMPLE RESULTS**

Lab ID: L1704354-03  
Client ID: VES-108 (16-18)  
Sample Location: MA  
Matrix: Soil  
Percent Solids: 72%

Date Collected: 02/10/17 13:50  
Date Received: 02/10/17  
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
<b>MCP Total Metals - Mansfield Lab</b>											
Arsenic, Total	1.6		mg/kg	0.55	--	1	02/13/17 22:05	02/15/17 22:28	EPA 3050B	97,6010C	AB
Barium, Total	5.1		mg/kg	0.55	--	1	02/13/17 22:05	02/15/17 22:28	EPA 3050B	97,6010C	AB
Cadmium, Total	ND		mg/kg	0.55	--	1	02/13/17 22:05	02/15/17 22:28	EPA 3050B	97,6010C	AB
Chromium, Total	8.6		mg/kg	0.55	--	1	02/13/17 22:05	02/15/17 22:28	EPA 3050B	97,6010C	AB
Lead, Total	ND		mg/kg	2.7	--	1	02/13/17 22:05	02/15/17 22:28	EPA 3050B	97,6010C	AB
Mercury, Total	ND		mg/kg	0.087	--	1	02/11/17 12:20	02/15/17 16:02	EPA 7471B	97,7471B	BV
Selenium, Total	ND		mg/kg	2.7	--	1	02/13/17 22:05	02/15/17 22:28	EPA 3050B	97,6010C	AB
Silver, Total	ND		mg/kg	0.55	--	1	02/13/17 22:05	02/15/17 22:28	EPA 3050B	97,6010C	AB



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704354  
**Report Date:** 02/17/17

**SAMPLE RESULTS**

Lab ID: L1704354-04 Date Collected: 02/10/17 10:30  
Client ID: VES-123 (0-2) Date Received: 02/10/17  
Sample Location: MA Field Prep: Not Specified  
Matrix: Soil  
Percent Solids: 91%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
<b>MCP Total Metals - Mansfield Lab</b>											
Arsenic, Total	4.3		mg/kg	0.43	--	1	02/13/17 22:05	02/15/17 22:32	EPA 3050B	97,6010C	AB
Barium, Total	19		mg/kg	0.43	--	1	02/13/17 22:05	02/15/17 22:32	EPA 3050B	97,6010C	AB
Cadmium, Total	ND		mg/kg	0.43	--	1	02/13/17 22:05	02/15/17 22:32	EPA 3050B	97,6010C	AB
Chromium, Total	39		mg/kg	0.43	--	1	02/13/17 22:05	02/15/17 22:32	EPA 3050B	97,6010C	AB
Lead, Total	19		mg/kg	2.1	--	1	02/13/17 22:05	02/15/17 22:32	EPA 3050B	97,6010C	AB
Mercury, Total	0.076		mg/kg	0.072	--	1	02/11/17 12:20	02/15/17 16:04	EPA 7471B	97,7471B	BV
Selenium, Total	ND		mg/kg	2.1	--	1	02/13/17 22:05	02/15/17 22:32	EPA 3050B	97,6010C	AB
Silver, Total	ND		mg/kg	0.43	--	1	02/13/17 22:05	02/15/17 22:32	EPA 3050B	97,6010C	AB



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704354  
**Report Date:** 02/17/17

**SAMPLE RESULTS**

Lab ID: L1704354-05 Date Collected: 02/10/17 12:30  
Client ID: VES-119 (0-2) Date Received: 02/10/17  
Sample Location: MA Field Prep: Not Specified  
Matrix: Soil  
Percent Solids: 84%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
<b>MCP Total Metals - Mansfield Lab</b>											
Arsenic, Total	9.9		mg/kg	0.47	--	1	02/13/17 22:05	02/15/17 22:49	EPA 3050B	97,6010C	AB
Barium, Total	100		mg/kg	0.47	--	1	02/13/17 22:05	02/15/17 22:49	EPA 3050B	97,6010C	AB
Cadmium, Total	0.68		mg/kg	0.47	--	1	02/13/17 22:05	02/15/17 22:49	EPA 3050B	97,6010C	AB
Chromium, Total	19		mg/kg	0.47	--	1	02/13/17 22:05	02/15/17 22:49	EPA 3050B	97,6010C	AB
Lead, Total	350		mg/kg	2.3	--	1	02/13/17 22:05	02/15/17 22:49	EPA 3050B	97,6010C	AB
Mercury, Total	1.20		mg/kg	0.080	--	1	02/11/17 12:20	02/15/17 16:06	EPA 7471B	97,7471B	BV
Selenium, Total	ND		mg/kg	2.3	--	1	02/13/17 22:05	02/15/17 22:49	EPA 3050B	97,6010C	AB
Silver, Total	ND		mg/kg	0.47	--	1	02/13/17 22:05	02/15/17 22:49	EPA 3050B	97,6010C	AB



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704354  
**Report Date:** 02/17/17

**SAMPLE RESULTS**

Lab ID: L1704354-06 Date Collected: 02/10/17 13:30  
Client ID: VES-109 (0-2) Date Received: 02/10/17  
Sample Location: MA Field Prep: Not Specified  
Matrix: Soil  
Percent Solids: 90%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
<b>MCP Total Metals - Mansfield Lab</b>											
Arsenic, Total	6.2		mg/kg	0.42	--	1	02/13/17 22:05	02/15/17 22:54	EPA 3050B	97,6010C	AB
Barium, Total	31		mg/kg	0.42	--	1	02/13/17 22:05	02/15/17 22:54	EPA 3050B	97,6010C	AB
Cadmium, Total	ND		mg/kg	0.42	--	1	02/13/17 22:05	02/15/17 22:54	EPA 3050B	97,6010C	AB
Chromium, Total	9.2		mg/kg	0.42	--	1	02/13/17 22:05	02/15/17 22:54	EPA 3050B	97,6010C	AB
Lead, Total	51		mg/kg	2.1	--	1	02/13/17 22:05	02/15/17 22:54	EPA 3050B	97,6010C	AB
Mercury, Total	0.496		mg/kg	0.069	--	1	02/11/17 12:20	02/15/17 16:08	EPA 7471B	97,7471B	BV
Selenium, Total	ND		mg/kg	2.1	--	1	02/13/17 22:05	02/15/17 22:54	EPA 3050B	97,6010C	AB
Silver, Total	ND		mg/kg	0.42	--	1	02/13/17 22:05	02/15/17 22:54	EPA 3050B	97,6010C	AB



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704354  
**Report Date:** 02/17/17

## Method Blank Analysis Batch Quality Control

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
MCP Total Metals - Mansfield Lab for sample(s): 01-06 Batch: WG977081-1									
Mercury, Total	ND	mg/kg	0.083	--	1	02/11/17 12:20	02/15/17 11:46	97,7471B	BV

### Prep Information

Digestion Method: EPA 7471B

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
MCP Total Metals - Mansfield Lab for sample(s): 01-06 Batch: WG977494-1									
Arsenic, Total	ND	mg/kg	0.40	--	1	02/13/17 22:05	02/15/17 19:26	97,6010C	AB
Barium, Total	ND	mg/kg	0.40	--	1	02/13/17 22:05	02/15/17 19:26	97,6010C	AB
Cadmium, Total	ND	mg/kg	0.40	--	1	02/13/17 22:05	02/15/17 19:26	97,6010C	AB
Chromium, Total	ND	mg/kg	0.40	--	1	02/13/17 22:05	02/15/17 19:26	97,6010C	AB
Lead, Total	ND	mg/kg	2.0	--	1	02/13/17 22:05	02/15/17 19:26	97,6010C	AB
Selenium, Total	ND	mg/kg	2.0	--	1	02/13/17 22:05	02/15/17 19:26	97,6010C	AB
Silver, Total	ND	mg/kg	0.40	--	1	02/13/17 22:05	02/15/17 19:26	97,6010C	AB

### Prep Information

Digestion Method: EPA 3050B

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704354  
**Report Date:** 02/17/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Total Metals - Mansfield Lab Associated sample(s): 01-06 Batch: WG977081-2 WG977081-3 SRM Lot Number: D091-540								
Mercury, Total	95		110		72-128	15		30
MCP Total Metals - Mansfield Lab Associated sample(s): 01-06 Batch: WG977494-2 WG977494-3 SRM Lot Number: D091-540								
Arsenic, Total	110		110		80-121	0		30
Barium, Total	96		100		84-117	4		30
Cadmium, Total	107		107		83-117	0		30
Chromium, Total	112		105		80-119	6		30
Lead, Total	110		110		82-118	0		30
Selenium, Total	107		101		79-121	6		30
Silver, Total	102		99		76-124	3		30

# **INORGANICS & MISCELLANEOUS**



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704354  
**Report Date:** 02/17/17

## SAMPLE RESULTS

Lab ID: L1704354-01  
Client ID: VES-103 (1-2)  
Sample Location: MA  
Matrix: Soil

Date Collected: 02/10/17 08:30  
Date Received: 02/10/17  
Field Prep: Not Specified

### Test Material Information

Source of Material: Unknown  
Description of Material: Non-Metallic - Damp Soil  
Particle Size: Medium  
Preliminary Burning Time (sec): 120

Parameter	Result	Date Analyzed	Analytical Method	Analyst
Ignitability of Solids - Westborough Lab				
Ignitability	NI	02/14/17 01:00	1,1030	SB



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704354  
**Report Date:** 02/17/17

## SAMPLE RESULTS

Lab ID: L1704354-02  
Client ID: VES-108 (6-8)  
Sample Location: MA  
Matrix: Soil

Date Collected: 02/10/17 13:45  
Date Received: 02/10/17  
Field Prep: Not Specified

### Test Material Information

Source of Material: Unknown  
Description of Material: Non-Metallic - Damp Clay  
Particle Size: Fine  
Preliminary Burning Time (sec): 120

Parameter	Result	Date Analyzed	Analytical Method	Analyst
Ignitability of Solids - Westborough Lab				
Ignitability	NI	02/14/17 01:00	1,1030	SB



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704354  
**Report Date:** 02/17/17

## SAMPLE RESULTS

Lab ID: L1704354-03  
Client ID: VES-108 (16-18)  
Sample Location: MA  
Matrix: Soil

Date Collected: 02/10/17 13:50  
Date Received: 02/10/17  
Field Prep: Not Specified

### Test Material Information

Source of Material: Unknown  
Description of Material: Non-Metallic - Wet Soil  
Particle Size: Fine  
Preliminary Burning Time (sec): 120

Parameter	Result	Date Analyzed	Analytical Method	Analyst
Ignitability of Solids - Westborough Lab				
Ignitability	NI	02/14/17 01:00	1,1030	SB



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704354  
**Report Date:** 02/17/17

## SAMPLE RESULTS

Lab ID: L1704354-04  
Client ID: VES-123 (0-2)  
Sample Location: MA  
Matrix: Soil

Date Collected: 02/10/17 10:30  
Date Received: 02/10/17  
Field Prep: Not Specified

### Test Material Information

Source of Material: Unknown  
Description of Material: Non-Metallic - Damp Soil  
Particle Size: Medium  
Preliminary Burning Time (sec): 120

Parameter	Result	Date Analyzed	Analytical Method	Analyst
Ignitability of Solids - Westborough Lab				
Ignitability	NI	02/14/17 01:00	1,1030	SB



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704354  
**Report Date:** 02/17/17

## SAMPLE RESULTS

Lab ID: L1704354-05  
Client ID: VES-119 (0-2)  
Sample Location: MA  
Matrix: Soil

Date Collected: 02/10/17 12:30  
Date Received: 02/10/17  
Field Prep: Not Specified

### Test Material Information

Source of Material: Unknown  
Description of Material: Non-Metallic - Damp Soil  
Particle Size: Medium  
Preliminary Burning Time (sec): 120

Parameter	Result	Date Analyzed	Analytical Method	Analyst
Ignitability of Solids - Westborough Lab				
Ignitability	NI	02/14/17 01:00	1,1030	SB



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704354  
**Report Date:** 02/17/17

## SAMPLE RESULTS

Lab ID: L1704354-06  
Client ID: VES-109 (0-2)  
Sample Location: MA  
Matrix: Soil

Date Collected: 02/10/17 13:30  
Date Received: 02/10/17  
Field Prep: Not Specified

### Test Material Information

Source of Material: Unknown  
Description of Material: Non-Metallic - Damp Soil  
Particle Size: Medium  
Preliminary Burning Time (sec): 120

Parameter	Result	Date Analyzed	Analytical Method	Analyst
Ignitability of Solids - Westborough Lab				
Ignitability	NI	02/14/17 01:00	1,1030	SB



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704354  
**Report Date:** 02/17/17

### SAMPLE RESULTS

Lab ID:	L1704354-01	Date Collected:	02/10/17 08:30
Client ID:	VES-103 (1-2)	Date Received:	02/10/17
Sample Location:	MA	Field Prep:	Not Specified
Matrix:	Soil		

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>General Chemistry - Westborough Lab</b>										
Specific Conductance @ 25 C	14		umhos/cm	10	--	1	-	02/11/17 00:55	1,9050A	VB
Solids, Total	91.2	%		0.100	NA	1	-	02/13/17 12:36	121,2540G	RI
pH (H)	7.4	SU		-	NA	1	-	02/10/17 22:28	1,9045D	AS
Cyanide, Reactive	ND		mg/kg	10	--	1	02/14/17 19:55	02/14/17 21:38	1,7.3	TL
Sulfide, Reactive	ND		mg/kg	10	--	1	02/14/17 19:55	02/14/17 21:30	1,7.3	TL

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704354  
**Report Date:** 02/17/17

### SAMPLE RESULTS

Lab ID:	L1704354-02	Date Collected:	02/10/17 13:45
Client ID:	VES-108 (6-8)	Date Received:	02/10/17
Sample Location:	MA	Field Prep:	Not Specified
Matrix:	Soil		

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>General Chemistry - Westborough Lab</b>										
Specific Conductance @ 25 C	1200		umhos/cm	10	--	1	-	02/11/17 00:55	1,9050A	VB
Solids, Total	45.3	%		0.100	NA	1	-	02/13/17 12:36	121,2540G	RI
pH (H)	7.9	SU		-	NA	1	-	02/10/17 22:28	1,9045D	AS
Cyanide, Reactive	ND		mg/kg	10	--	1	02/14/17 19:55	02/14/17 21:38	1,7.3	TL
Sulfide, Reactive	ND		mg/kg	10	--	1	02/14/17 19:55	02/14/17 21:31	1,7.3	TL

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704354  
**Report Date:** 02/17/17

### SAMPLE RESULTS

Lab ID: L1704354-03  
Client ID: VES-108 (16-18)  
Sample Location: MA  
Matrix: Soil

Date Collected: 02/10/17 13:50  
Date Received: 02/10/17  
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>General Chemistry - Westborough Lab</b>										
Specific Conductance @ 25 C	210		umhos/cm	10	--	1	-	02/11/17 00:55	1,9050A	VB
Solids, Total	71.9	%		0.100	NA	1	-	02/13/17 12:36	121,2540G	RI
pH (H)	8.2	SU		-	NA	1	-	02/10/17 22:28	1,9045D	AS
Cyanide, Reactive	ND		mg/kg	10	--	1	02/14/17 19:55	02/14/17 21:38	1,7.3	TL
Sulfide, Reactive	ND		mg/kg	10	--	1	02/14/17 19:55	02/14/17 21:31	1,7.3	TL



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704354  
**Report Date:** 02/17/17

### SAMPLE RESULTS

Lab ID:	L1704354-04	Date Collected:	02/10/17 10:30
Client ID:	VES-123 (0-2)	Date Received:	02/10/17
Sample Location:	MA	Field Prep:	Not Specified
Matrix:	Soil		

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>General Chemistry - Westborough Lab</b>										
Specific Conductance @ 25 C	43		umhos/cm	10	--	1	-	02/11/17 00:55	1,9050A	VB
Solids, Total	91.3	%		0.100	NA	1	-	02/13/17 12:36	121,2540G	RI
pH (H)	8.0	SU		-	NA	1	-	02/10/17 22:28	1,9045D	AS
Cyanide, Reactive	ND		mg/kg	10	--	1	02/14/17 19:55	02/14/17 21:38	1,7.3	TL
Sulfide, Reactive	ND		mg/kg	10	--	1	02/14/17 19:55	02/14/17 21:31	1,7.3	TL

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704354  
**Report Date:** 02/17/17

### SAMPLE RESULTS

Lab ID:	L1704354-05	Date Collected:	02/10/17 12:30
Client ID:	VES-119 (0-2)	Date Received:	02/10/17
Sample Location:	MA	Field Prep:	Not Specified
Matrix:	Soil		

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>General Chemistry - Westborough Lab</b>										
Specific Conductance @ 25 C	22		umhos/cm	10	--	1	-	02/11/17 00:55	1,9050A	VB
Solids, Total	83.8	%		0.100	NA	1	-	02/13/17 12:36	121,2540G	RI
pH (H)	7.2	SU		-	NA	1	-	02/10/17 22:28	1,9045D	AS
Cyanide, Reactive	ND		mg/kg	10	--	1	02/14/17 19:55	02/14/17 21:39	1,7.3	TL
Sulfide, Reactive	ND		mg/kg	10	--	1	02/14/17 19:55	02/14/17 21:31	1,7.3	TL



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704354  
**Report Date:** 02/17/17

### SAMPLE RESULTS

Lab ID:	L1704354-06	Date Collected:	02/10/17 13:30
Client ID:	VES-109 (0-2)	Date Received:	02/10/17
Sample Location:	MA	Field Prep:	Not Specified
Matrix:	Soil		

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>General Chemistry - Westborough Lab</b>										
Specific Conductance @ 25 C	18		umhos/cm	10	--	1	-	02/11/17 00:55	1,9050A	VB
Solids, Total	90.3	%		0.100	NA	1	-	02/13/17 12:36	121,2540G	RI
pH (H)	7.4	SU		-	NA	1	-	02/10/17 22:28	1,9045D	AS
Cyanide, Reactive	ND		mg/kg	10	--	1	02/14/17 19:55	02/14/17 21:39	1,7.3	TL
Sulfide, Reactive	ND		mg/kg	10	--	1	02/14/17 19:55	02/14/17 21:31	1,7.3	TL



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704354  
**Report Date:** 02/17/17

**Method Blank Analysis**  
**Batch Quality Control**

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab for sample(s): 01-06 Batch: WG977816-1									
Cyanide, Reactive	ND	mg/kg	10	--	1	02/14/17 19:55	02/14/17 21:38	1,7.3	TL
General Chemistry - Westborough Lab for sample(s): 01-06 Batch: WG977817-1									
Sulfide, Reactive	ND	mg/kg	10	--	1	02/14/17 19:55	02/14/17 21:30	1,7.3	TL



# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704354  
**Report Date:** 02/17/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01-06 Batch: WG977028-1								
pH	101	-	-	-	99-101	-	-	-
General Chemistry - Westborough Lab Associated sample(s): 01-06 Batch: WG977048-1								
Specific Conductance	99	-	-	-	99-101	-	-	-
General Chemistry - Westborough Lab Associated sample(s): 01-06 Batch: WG977816-2								
Cyanide, Reactive	62	-	-	-	30-125	-	-	40
General Chemistry - Westborough Lab Associated sample(s): 01-06 Batch: WG977817-2								
Sulfide, Reactive	82	-	-	-	60-125	-	-	40

**Lab Duplicate Analysis**  
Batch Quality Control

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704354  
**Report Date:** 02/17/17

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01-06 QC Batch ID: WG977816-3 QC Sample: L1704354-06 Client ID: VES-109 (0-2)						
Cyanide, Reactive	ND	ND	mg/kg	NC		40
General Chemistry - Westborough Lab Associated sample(s): 01-06 QC Batch ID: WG977817-3 QC Sample: L1704354-06 Client ID: VES-109 (0-2)						
Sulfide, Reactive	ND	ND	mg/kg	NC		40

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704354  
**Report Date:** 02/17/17

### Sample Receipt and Container Information

Were project specific reporting limits specified? YES

**Reagent H2O Preserved Vials Frozen on:** 02/10/2017 20:55

#### Cooler Information Custody Seal

##### Cooler

A Absent

#### Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L1704354-01A	Vial MeOH preserved	A	N/A	3.1	Y	Absent	VPH-10(28),MCP-8260HLW-10(14)
L1704354-01B	Vial water preserved	A	N/A	3.1	Y	Absent	MCP-8260HLW-10(14)
L1704354-01C	Vial water preserved	A	N/A	3.1	Y	Absent	MCP-8260HLW-10(14)
L1704354-01D	Glass 500ml/16oz unpreserved	A	N/A	3.1	Y	Absent	IGNIT-1030(14),REACTS(14),MCP-8270-10(14),TS(7),MCP-8082-10-3540C(365),PH-9045(1),REACTCN(14),COND-9050(28),EPH-DELUX-10(14)
L1704354-01E	Metals Only - Glass 60mL/2oz unp	A	N/A	3.1	Y	Absent	MCP-CR-6010T-10(180),MCP-AS-6010T-10(180),MCP-7471T-10(28),MCP-CD-6010T-10(180),MCP-AG-6010T-10(180),MCP-SE-6010T-10(180),MCP-BA-6010T-10(180),MCP-PB-6010T-10(180)
L1704354-02A	Vial MeOH preserved	A	N/A	3.1	Y	Absent	VPH-10(28),MCP-8260HLW-10(14)
L1704354-02B	Vial water preserved	A	N/A	3.1	Y	Absent	MCP-8260HLW-10(14)
L1704354-02C	Vial water preserved	A	N/A	3.1	Y	Absent	MCP-8260HLW-10(14)
L1704354-02D	Glass 500ml/16oz unpreserved	A	N/A	3.1	Y	Absent	IGNIT-1030(14),REACTS(14),MCP-8270-10(14),TS(7),MCP-8082-10-3540C(365),PH-9045(1),REACTCN(14),COND-9050(28),EPH-DELUX-10(14)
L1704354-02E	Metals Only - Glass 60mL/2oz unp	A	N/A	3.1	Y	Absent	MCP-CR-6010T-10(180),MCP-AS-6010T-10(180),MCP-7471T-10(28),MCP-CD-6010T-10(180),MCP-AG-6010T-10(180),MCP-SE-6010T-10(180),MCP-BA-6010T-10(180),MCP-PB-6010T-10(180)
L1704354-03A	Vial MeOH preserved	A	N/A	3.1	Y	Absent	VPH-10(28),MCP-8260HLW-10(14)
L1704354-03B	Vial water preserved	A	N/A	3.1	Y	Absent	MCP-8260HLW-10(14)

\*Values in parentheses indicate holding time in days

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704354  
**Report Date:** 02/17/17

**Container Information**

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L1704354-03C	Vial water preserved	A	N/A	3.1	Y	Absent	MCP-8260HLW-10(14)
L1704354-03D	Glass 500ml/16oz unpreserved	A	N/A	3.1	Y	Absent	IGNIT-1030(14),REACTS(14),MCP-8270-10(14),TS(7),MCP-8082-10-3540C(365),PH-9045(1),REACTCN(14),COND-9050(28),EPH-DELUX-10(14)
L1704354-03E	Metals Only - Glass 60mL/2oz unp	A	N/A	3.1	Y	Absent	MCP-CR-6010T-10(180),MCP-AS-6010T-10(180),MCP-7471T-10(28),MCP-CD-6010T-10(180),MCP-AG-6010T-10(180),MCP-SE-6010T-10(180),MCP-BA-6010T-10(180),MCP-PB-6010T-10(180)
L1704354-04A	Vial MeOH preserved	A	N/A	3.1	Y	Absent	VPH-10(28),MCP-8260HLW-10(14)
L1704354-04B	Vial water preserved	A	N/A	3.1	Y	Absent	MCP-8260HLW-10(14)
L1704354-04C	Vial water preserved	A	N/A	3.1	Y	Absent	MCP-8260HLW-10(14)
L1704354-04D	Glass 500ml/16oz unpreserved	A	N/A	3.1	Y	Absent	IGNIT-1030(14),REACTS(14),MCP-8270-10(14),TS(7),MCP-8082-10-3540C(365),PH-9045(1),REACTCN(14),COND-9050(28),EPH-DELUX-10(14)
L1704354-04E	Metals Only - Glass 60mL/2oz unp	A	N/A	3.1	Y	Absent	MCP-CR-6010T-10(180),MCP-AS-6010T-10(180),MCP-7471T-10(28),MCP-CD-6010T-10(180),MCP-AG-6010T-10(180),MCP-SE-6010T-10(180),MCP-BA-6010T-10(180),MCP-PB-6010T-10(180)
L1704354-05A	Vial MeOH preserved	A	N/A	3.1	Y	Absent	VPH-10(28),MCP-8260HLW-10(14)
L1704354-05B	Vial water preserved	A	N/A	3.1	Y	Absent	MCP-8260HLW-10(14)
L1704354-05C	Vial water preserved	A	N/A	3.1	Y	Absent	MCP-8260HLW-10(14)
L1704354-05D	Glass 500ml/16oz unpreserved	A	N/A	3.1	Y	Absent	IGNIT-1030(14),REACTS(14),MCP-8270-10(14),TS(7),MCP-8082-10-3540C(365),PH-9045(1),REACTCN(14),COND-9050(28),EPH-DELUX-10(14)
L1704354-05E	Metals Only - Glass 60mL/2oz unp	A	N/A	3.1	Y	Absent	MCP-CR-6010T-10(180),MCP-AS-6010T-10(180),MCP-7471T-10(28),MCP-CD-6010T-10(180),MCP-AG-6010T-10(180),MCP-SE-6010T-10(180),MCP-BA-6010T-10(180),MCP-PB-6010T-10(180)
L1704354-06A	Vial MeOH preserved	A	N/A	3.1	Y	Absent	VPH-10(28),MCP-8260HLW-10(14)
L1704354-06B	Vial water preserved	A	N/A	3.1	Y	Absent	MCP-8260HLW-10(14)

\*Values in parentheses indicate holding time in days

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704354  
**Report Date:** 02/17/17

**Container Information**

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L1704354-06C	Vial water preserved	A	N/A	3.1	Y	Absent	MCP-8260HLW-10(14)
L1704354-06D	Glass 500ml/16oz unpreserved	A	N/A	3.1	Y	Absent	IGNIT-1030(14),REACTS(14),MCP-8270-10(14),TS(7),MCP-8082-10-3540C(365),PH-9045(1),REACTCN(14),COND-9050(28),EPH-DELUX-10(14)
L1704354-06E	Metals Only - Glass 60mL/2oz unp	A	N/A	3.1	Y	Absent	MCP-CR-6010T-10(180),MCP-AS-6010T-10(180),MCP-7471T-10(28),MCP-CD-6010T-10(180),MCP-AG-6010T-10(180),MCP-SE-6010T-10(180),MCP-BA-6010T-10(180),MCP-PB-6010T-10(180)

\*Values in parentheses indicate holding time in days

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704354  
**Report Date:** 02/17/17

## GLOSSARY

### **Acronyms**

EDL	- Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).
EPA	- Environmental Protection Agency.
LCS	- Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCSD	- Laboratory Control Sample Duplicate: Refer to LCS.
LFB	- Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
MDL	- Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
MS	- Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available.
MSD	- Matrix Spike Sample Duplicate: Refer to MS.
NA	- Not Applicable.
NC	- Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
NDPA/DPA	- N-Nitrosodiphenylamine/Diphenylamine.
NI	- Not Ignitable.
NP	- Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.
RL	- Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
RPD	- Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.
SRM	- Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.
STLP	- Semi-dynamic Tank Leaching Procedure per EPA Method 1315.
TIC	- Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

### **Footnotes**

- 1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

### **Terms**

**Total:** With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

**Analytical Method:** Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

### **Data Qualifiers**

- A** - Spectra identified as "Aldol Condensation Product".
- B** - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the

**Report Format:** Data Usability Report



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704354  
**Report Date:** 02/17/17

**Data Qualifiers**

reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

- C** - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.
- D** - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.
- E** - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.
- G** - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.
- H** - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.
- I** - The lower value for the two columns has been reported due to obvious interference.
- M** - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.
- NJ** - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.
- P** - The RPD between the results for the two columns exceeds the method-specified criteria.
- Q** - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)
- R** - Analytical results are from sample re-analysis.
- RE** - Analytical results are from sample re-extraction.
- S** - Analytical results are from modified screening analysis.
- J** - Estimated value. This represents an estimated concentration for Tentatively Identified Compounds (TICs).
- ND** - Not detected at the reporting limit (RL) for the sample.

*Report Format:* Data Usability Report



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704354  
**Report Date:** 02/17/17

## REFERENCES

- 1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - IV, 2007.
- 97 EPA Test Methods (SW-846) with QC Requirements & Performance Standards for the Analysis of EPA SW-846 Methods under the Massachusetts Contingency Plan, WSC-CAM-IIA, IIB, IIIA, IIIB, IIIC, IID, VA, VB, VC, VIA, VIB, VIIIA and VIIIB, July 2010.
- 98 Method for the Determination of Extractable Petroleum Hydrocarbons (EPH), MassDEP, May 2004, Revision 1.1 with QC Requirements & Performance Standards for the Analysis of EPH under the Massachusetts Contingency Plan, WSC-CAM-IVB, July 2010.
- 100 Method for the Determination of Volatile Petroleum Hydrocarbons (VPH), MassDEP, May 2004, Revision 1.1 with QC Requirements & Performance Standards for the Analysis of VPH under the Massachusetts Contingency Plan, WSC-CAM-IVA, July 2010.
- 121 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. Standard Methods Online.

## LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at its own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.



## Certification Information

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**The following analytes are not included in our Primary NELAP Scope of Accreditation:**

**Westborough Facility**

EPA 624: m/p-xylene, o-xylene

EPA 8260C: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), Methyl methacrylate, 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.

EPA 8270D: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.

EPA 300: DW: Bromide

EPA 6860: NPW and SCM: Perchlorate

EPA 9010: NPW and SCM: Amenable Cyanide Distillation

EPA 9012B: NPW: Total Cyanide

EPA 9050A: NPW: Specific Conductance

SM3500: NPW: Ferrous Iron

SM4500: NPW: Amenable Cyanide, Dissolved Oxygen; SCM: Total Phosphorus, TKN, NO<sub>2</sub>, NO<sub>3</sub>.

SM5310C: DW: Dissolved Organic Carbon

**Mansfield Facility**

SM 2540D: TSS

EPA 3005A NPW

EPA 8082A: NPW: PCB: 1, 5, 31, 87, 101, 110, 141, 151, 153, 180, 183, 187.

EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.

**Biological Tissue Matrix**: EPA 3050B

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**The following analytes are included in our Massachusetts DEP Scope of Accreditation**

**Westborough Facility:**

**Drinking Water**

EPA 300.0: Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C**, **SM4500CN-CE**, **EPA 180.1**,

**SM2130B**, **SM4500CI-D**, **SM2320B**, **SM2540C**, **SM4500H-B**

EPA 332: Perchlorate; **EPA 524.2**: THMs and VOCs; **EPA 504.1**: EDB, DBCP.

Microbiology: **SM9215B**; **SM9223-P/A**, **SM9223B-Colilert-QT**, **SM9222D**.

**Non-Potable Water**

**SM4500H,B**, **EPA 120.1**, **SM2510B**, **SM2540C**, **SM2320B**, **SM4500CL-E**, **SM4500F-BC**, **SM4500NH3-BH**, **EPA 350.1**: Ammonia-N, LACHAT 10-107-06-1-B: Ammonia-N, **SM4500NO3-F**, **EPA 353.2**: Nitrate-N, **EPA 351.1**, **SM4500P-E**, **SM4500P-B**, **E**, **SM4500SO4-E**, **SM5220D**, **EPA 410.4**, **SM5210B**, **SM5310C**, **SM4500CL-D**, **EPA 1664**, **EPA 420.1**, **SM4500-CN-CE**, **SM2540D**.

EPA 624: Volatile Halocarbons & Aromatics,

EPA 608: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs

EPA 625: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045**: PCB-Oil.

Microbiology: **SM9223B-Colilert-QT**; **Enterolert-QT**, **SM9221E**.

**Mansfield Facility:**

**Drinking Water**

EPA 200.7: Ba, Be, Cd, Cr, Cu, Ni, Na, Ca. **EPA 200.8**: Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Ni, Se, TL. **EPA 245.1 Hg**.

**Non-Potable Water**

EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.

EPA 200.8: Al, Sb, As, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn.

EPA 245.1 Hg.

**SM2340B**

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For a complete listing of analytes and methods, please contact your Alpha Project Manager.



**Method Blank Summary  
Form 4**

Client	: Vertex Environmental Services, Inc.	Lab Number	: L1704354
Project Name	: EAST BOSTON	Project Number	: 43068
Lab Sample ID	: WG978400-5	Lab File ID	: V11170215N05
Instrument ID	: VOA111		
Matrix	: SOIL	Analysis Date	: 02/15/17 20:20

Client Sample No.	Lab Sample ID	Analysis Date
WG978400-3LCS	WG978400-3	02/15/17 18:39
WG978400-4LCSD	WG978400-4	02/15/17 19:04
VES-103 (1-2)	L1704354-01	02/15/17 20:46
VES-108 (6-8)	L1704354-02	02/15/17 21:11
VES-123 (0-2)	L1704354-04	02/15/17 22:03
VES-119 (0-2)	L1704354-05	02/15/17 22:29
VES-109 (0-2)	L1704354-06	02/15/17 22:54

## Method Blank Summary Form 4

Client : Vertex Environmental Services, Inc.      Lab Number : L1704354  
Project Name : EAST BOSTON      Project Number : 43068  
Lab Sample ID : WG978504-5      Lab File ID : V11170216A06  
Instrument ID : VOA111  
Matrix : SOIL      Analysis Date : 02/16/17 09:57

Client Sample No.	Lab Sample ID	Analysis Date
WG978504-3LCS	WG978504-3	02/16/17 08:41
WG978504-4LCSD	WG978504-4	02/16/17 09:06
VES-108 (16-18)	L1704354-03	02/16/17 10:23

**Continuing Calibration  
Form 7**

Client	: Vertex Environmental Services, Inc.	Lab Number	: L1704354
Project Name	: EAST BOSTON	Project Number	: 43068
Instrument ID	: VOA111	Calibration Date	: 02/15/17 18:39
Lab File ID	: V11170215N01	Init. Calib. Date(s)	: 01/30/17
Sample No	: WG978400-2	Init. Calib. Times	: 21:39 01/31/17 00:38
Channel	:		

Compound	Ave. RRF	RRF	Min RRF	%D	Max %D	Area%	Dev(min)
Fluorobenzene	1	1	-	0	20	64	0
Dichlorodifluoromethane	0.292	0.286	-	2.1	20	63	0
Chloromethane	0.451	0.493	-	-9.3	20	70	0
Vinyl chloride	0.346	0.365	-	-5.5	20	68	0
Bromomethane	0.152	0.146	-	3.9	20	63	0
Chloroethane	0.177	0.198	-	-11.9	20	66	0
Trichlorofluoromethane	0.361	0.403	-	-11.6	20	71	0
Ethyl ether	0.146	0.154	-	-5.5	20	68	0
1,1-Dichloroethene	0.199	0.205	-	-3	20	67	0
Carbon disulfide	0.765	0.793	-	-3.7	20	69	0
Freon-113	0.18	0.2	-	-11.1	20	71	0
Acrolein	0.034	0.031	-	8.8	20	49	0
Methylene chloride	0.264	0.303	-	-14.8	20	75	0
Acetone	0.106	0.124	-	-17	20	69	0
trans-1,2-Dichloroethene	0.234	0.241	-	-3	20	65	0
Methyl acetate	0.222	0.249	-	-12.2	20	77	0
Methyl tert-butyl ether	0.756	0.782	-	-3.4	20	68	0
tert-Butyl alcohol	0.026	0.026	-	0	20	68	0
Diisopropyl ether	1.413	1.622	-	-14.8	20	74	0
1,1-Dichloroethane	0.565	0.621	-	-9.9	20	71	0
Halothane	0.14	0.141	-	-0.7	20	66	0
Acrylonitrile	0.105	0.117	-	-11.4	20	70	0
Ethyl tert-butyl ether	1.043	1.116	-	-7	20	70	0
Vinyl acetate	0.941	1.088	-	-15.6	20	75	0
cis-1,2-Dichloroethene	0.265	0.268	-	-1.1	20	64	0
2,2-Dichloropropane	0.39	0.432	-	-10.8	20	71	0
Bromochloromethane	0.114	0.11	-	3.5	20	61	0
Cyclohexane	0.523	0.612	-	-17	20	76	0
Chloroform	0.478	0.509	-	-6.5	20	68	-.01
Ethyl acetate	0.342	0.396	-	-15.8	20	76	-.01
Carbon tetrachloride	0.317	0.333	-	-5	20	67	0
Tetrahydrofuran	0.128	0.153	-	-19.5	20	76	-.01
Dibromofluoromethane	0.236	0.233	-	1.3	20	63	0
1,1,1-Trichloroethane	0.389	0.425	-	-9.3	20	69	0
2-Butanone	0.158	0.17	-	-7.6	20	71	0
1,1-Dichloropropene	0.348	0.389	-	-11.8	20	71	0
Benzene	1.024	1.086	-	-6.1	20	69	-.01
tert-Amyl methyl ether	0.7	0.722	-	-3.1	20	67	-.01
1,2-Dichloroethane-d4	0.321	0.346	-	-7.8	20	70	0
1,2-Dichloroethane	0.45	0.499	-	-10.9	20	70	-.01
Methyl cyclohexane	0.357	0.399	-	-11.8	20	72	0
Trichloroethene	0.257	0.268	-	-4.3	20	67	0
Dibromomethane	0.151	0.154	-	-2	20	66	0
1,2-Dichloropropane	0.318	0.342	-	-7.5	20	69	0
2-Chloroethyl vinyl ether	0.161	0.169	-	-5	20	67	-.01

\* Value outside of QC limits.



**Continuing Calibration  
Form 7**

Client	: Vertex Environmental Services, Inc.	Lab Number	: L1704354		
Project Name	: EAST BOSTON	Project Number	: 43068		
Instrument ID	: VOA111	Calibration Date	: 02/15/17 18:39		
Lab File ID	: V11170215N01	Init. Calib. Date(s)	: 01/30/17		01/31/17
Sample No	: WG978400-2	Init. Calib. Times	: 21:39		00:38
Channel	:				

Compound	Ave. RRF	RRF	Min RRF	%D	Max %D	Area%	Dev(min)
Bromodichloromethane	0.365	0.379	-	-3.8	20	67	0
1,4-Dioxane	0.00225	0.00206	-	8.4	20	57	0
cis-1,3-Dichloropropene	0.432	0.446	-	-3.2	20	67	0
Chlorobenzene-d5	1	1	-	0	20	67	0
Toluene-d8	1.352	1.329	-	1.7	20	65	0
Toluene	0.899	0.889	-	1.1	20	67	0
4-Methyl-2-pentanone	0.145	0.137	-	5.5	20	68	-.01
Tetrachloroethene	0.327	0.302	-	7.6	20	61	0
trans-1,3-Dichloropropene	0.548	0.546	-	0.4	20	68	0
Ethyl methacrylate	20	17.687	-	11.6	20	65	-.01
1,1,2-Trichloroethane	0.261	0.266	-	-1.9	20	68	0
Chlorodibromomethane	0.335	0.316	-	5.7	20	63	-.01
1,3-Dichloropropane	0.562	0.573	-	-2	20	68	0
1,2-Dibromoethane	0.285	0.27	-	5.3	20	63	0
2-Hexanone	0.306	0.324	-	-5.9	20	73	-.01
Chlorobenzene	0.972	0.928	-	4.5	20	64	0
Ethylbenzene	1.74	1.753	-	-0.7	20	68	0
1,1,1,2-Tetrachloroethane	0.341	0.322	-	5.6	20	63	0
p/m Xylene	0.631	0.617	-	2.2	20	65	0
o Xylene	0.603	0.592	-	1.8	20	66	0
Styrene	1.018	0.989	-	2.8	20	65	0
1,4-Dichlorobenzene-d4	1	1	-	0	20	67	0
Bromoform	0.412	0.364	-	11.7	20	59	0
Isopropylbenzene	3.309	3.329	-	-0.6	20	66	0
4-Bromofluorobenzene	1.064	1.136	-	-6.8	20	71	0
Bromobenzene	0.78	0.725	-	7.1	20	62	0
n-Propylbenzene	4.144	4.429	-	-6.9	20	70	0
1,4-Dichlorobutane	1.642	1.769	-	-7.7	20	72	0
1,1,2,2-Tetrachloroethane	0.783	0.809	-	-3.3	20	68	0
4-Ethyltoluene	3.249	3.362	-	-3.5	20	68	0
2-Chlorotoluene	2.943	3.115	-	-5.8	20	70	0
1,3,5-Trimethylbenzene	2.832	2.903	-	-2.5	20	68	0
1,2,3-Trichloropropane	0.664	0.699	-	-5.3	20	70	0
trans-1,4-Dichloro-2-butene	0.327	0.367	-	-12.2	20	75	0
4-Chlorotoluene	2.607	2.74	-	-5.1	20	70	0
tert-Butylbenzene	2.294	2.3	-	-0.3	20	65	0
1,2,4-Trimethylbenzene	2.895	2.946	-	-1.8	20	66	0
sec-Butylbenzene	3.577	3.764	-	-5.2	20	69	0
p-Isopropyltoluene	2.913	2.987	-	-2.5	20	67	0
1,3-Dichlorobenzene	1.545	1.488	-	3.7	20	64	0
1,4-Dichlorobenzene	1.555	1.491	-	4.1	20	65	0
p-Diethylbenzene	1.703	1.742	-	-2.3	20	67	0
n-Butylbenzene	2.973	3.33	-	-12	20	74	0
1,2-Dichlorobenzene	1.448	1.359	-	6.1	20	63	0
1,2,4,5-Tetramethylbenzene	2.748	2.711	-	1.3	20	65	0

\* Value outside of QC limits.



# Continuing Calibration

## Form 7

Client : Vertex Environmental Services, Inc.      Lab Number : L1704354  
 Project Name : EAST BOSTON      Project Number : 43068  
 Instrument ID : VOA111      Calibration Date : 02/15/17 18:39  
 Lab File ID : V11170215N01      Init. Calib. Date(s) : 01/30/17      01/31/17  
 Sample No : WG978400-2      Init. Calib. Times : 21:39      00:38  
 Channel :

Compound	Ave. RRF	RRF	Min RRF	%D	Max %D	Area%	Dev(min)
1,2-Dibromo-3-chloropropan	0.104	0.087	-	16.3	20	60	0
1,3,5-Trichlorobenzene	1.101	1.012	-	8.1	20	60	0
Hexachlorobutadiene	0.485	0.423	-	12.8	20	57	0
1,2,4-Trichlorobenzene	0.985	0.921	-	6.5	20	62	0
Naphthalene	2.073	1.971	-	4.9	20	63	0
1,2,3-Trichlorobenzene	0.892	0.806	-	9.6	20	59	0

---

\* Value outside of QC limits.



# Continuing Calibration

## Form 7

Client : Vertex Environmental Services, Inc.      Lab Number : L1704354  
 Project Name : EAST BOSTON      Project Number : 43068  
 Instrument ID : VOA111      Calibration Date : 02/16/17 08:41  
 Lab File ID : V11170216A03      Init. Calib. Date(s) : 01/30/17      01/31/17  
 Sample No : WG978504-2      Init. Calib. Times : 21:39      00:38  
 Channel :

Compound	Ave. RRF	RRF	Min RRF	%D	Max %D	Area%	Dev(min)
Fluorobenzene	1	1	-	0	20	64	0
Dichlorodifluoromethane	0.292	0.242	-	17.1	20	54	0
Chloromethane	0.451	0.47	-	-4.2	20	67	0
Vinyl chloride	0.346	0.323	-	6.6	20	61	0
Bromomethane	0.152	0.138	-	9.2	20	60	0
Chloroethane	0.177	0.182	-	-2.8	20	61	0
Trichlorofluoromethane	0.361	0.344	-	4.7	20	61	0
Ethyl ether	0.146	0.148	-	-1.4	20	65	0
1,1-Dichloroethene	0.199	0.189	-	5	20	62	0
Carbon disulfide	0.765	0.713	-	6.8	20	63	0
Freon-113	0.18	0.172	-	4.4	20	61	0
Acrolein	0.034	0.028	-	17.6	20	45	0
Methylene chloride	0.264	0.282	-	-6.8	20	70	0
Acetone	0.106	0.104	-	1.9	20	59	0
trans-1,2-Dichloroethene	0.234	0.225	-	3.8	20	61	0
Methyl acetate	0.222	0.24	-	-8.1	20	75	0
Methyl tert-butyl ether	0.756	0.768	-	-1.6	20	67	0
tert-Butyl alcohol	0.026	0.026	-	0	20	68	0
Diisopropyl ether	1.413	1.578	-	-11.7	20	73	0
1,1-Dichloroethane	0.565	0.588	-	-4.1	20	67	0
Halothane	0.14	0.131	-	6.4	20	61	0
Acrylonitrile	0.105	0.11	-	-4.8	20	66	0
Ethyl tert-butyl ether	1.043	1.095	-	-5	20	69	0
Vinyl acetate	0.941	1.065	-	-13.2	20	74	0
cis-1,2-Dichloroethene	0.265	0.262	-	1.1	20	63	0
2,2-Dichloropropane	0.39	0.403	-	-3.3	20	67	0
Bromochloromethane	0.114	0.109	-	4.4	20	61	0
Cyclohexane	0.523	0.53	-	-1.3	20	66	0
Chloroform	0.478	0.489	-	-2.3	20	66	0
Ethyl acetate	0.342	0.38	-	-11.1	20	73	0
Carbon tetrachloride	0.317	0.304	-	4.1	20	62	0
Tetrahydrofuran	0.128	0.147	-	-14.8	20	74	0
Dibromofluoromethane	0.236	0.23	-	2.5	20	63	0
1,1,1-Trichloroethane	0.389	0.39	-	-0.3	20	64	0
2-Butanone	0.158	0.155	-	1.9	20	65	0
1,1-Dichloropropene	0.348	0.357	-	-2.6	20	65	0
Benzene	1.024	1.037	-	-1.3	20	66	0
tert-Amyl methyl ether	0.7	0.709	-	-1.3	20	66	0
1,2-Dichloroethane-d4	0.321	0.336	-	-4.7	20	69	0
1,2-Dichloroethane	0.45	0.484	-	-7.6	20	69	0
Methyl cyclohexane	0.357	0.348	-	2.5	20	63	0
Trichloroethene	0.257	0.25	-	2.7	20	63	0
Dibromomethane	0.151	0.156	-	-3.3	20	67	0
1,2-Dichloropropane	0.318	0.334	-	-5	20	68	0
2-Chloroethyl vinyl ether	0.161	0.141	-	12.4	20	56	0

\* Value outside of QC limits.



**Continuing Calibration  
Form 7**

Client	: Vertex Environmental Services, Inc.	Lab Number	: L1704354
Project Name	: EAST BOSTON	Project Number	: 43068
Instrument ID	: VOA111	Calibration Date	: 02/16/17 08:41
Lab File ID	: V11170216A03	Init. Calib. Date(s)	: 01/30/17
Sample No	: WG978504-2	Init. Calib. Times	: 21:39 01/31/17 00:38
Channel	:		

Compound	Ave. RRF	RRF	Min RRF	%D	Max %D	Area%	Dev(min)
Bromodichloromethane	0.365	0.369	-	-1.1	20	66	0
1,4-Dioxane	0.00225	0.00203	-	9.8	20	57	0
cis-1,3-Dichloropropene	0.432	0.437	-	-1.2	20	67	0
Chlorobenzene-d5	1	1	-	0	20	67	0
Toluene-d8	1.352	1.34	-	0.9	20	66	0
Toluene	0.899	0.854	-	5	20	64	0
4-Methyl-2-pentanone	0.145	0.133	-	8.3	20	66	0
Tetrachloroethene	0.327	0.286	-	12.5	20	58	0
trans-1,3-Dichloropropene	0.548	0.544	-	0.7	20	68	0
Ethyl methacrylate	20	17.454	-	12.7	20	64	0
1,1,2-Trichloroethane	0.261	0.263	-	-0.8	20	67	0
Chlorodibromomethane	0.335	0.31	-	7.5	20	62	0
1,3-Dichloropropane	0.562	0.567	-	-0.9	20	67	0
1,2-Dibromoethane	0.285	0.272	-	4.6	20	63	0
2-Hexanone	0.306	0.312	-	-2	20	70	0
Chlorobenzene	0.972	0.909	-	6.5	20	63	0
Ethylbenzene	1.74	1.685	-	3.2	20	65	0
1,1,1,2-Tetrachloroethane	0.341	0.316	-	7.3	20	62	0
p/m Xylene	0.631	0.593	-	6	20	62	0
o Xylene	0.603	0.571	-	5.3	20	63	0
Styrene	1.018	0.972	-	4.5	20	64	0
1,4-Dichlorobenzene-d4	1	1	-	0	20	65	0
Bromoform	0.412	0.366	-	11.2	20	58	0
Isopropylbenzene	3.309	3.232	-	2.3	20	62	0
4-Bromofluorobenzene	1.064	1.154	-	-8.5	20	70	0
Bromobenzene	0.78	0.723	-	7.3	20	61	0
n-Propylbenzene	4.144	4.283	-	-3.4	20	66	0
1,4-Dichlorobutane	1.642	1.757	-	-7	20	70	0
1,1,2,2-Tetrachloroethane	0.783	0.8	-	-2.2	20	66	0
4-Ethyltoluene	3.249	3.265	-	-0.5	20	64	0
2-Chlorotoluene	2.943	3.03	-	-3	20	66	0
1,3,5-Trimethylbenzene	2.832	2.836	-	-0.1	20	65	0
1,2,3-Trichloropropane	0.664	0.692	-	-4.2	20	68	0
trans-1,4-Dichloro-2-butene	0.327	0.356	-	-8.9	20	71	0
4-Chlorotoluene	2.607	2.706	-	-3.8	20	67	0
tert-Butylbenzene	2.294	2.225	-	3	20	62	0
1,2,4-Trimethylbenzene	2.895	2.906	-	-0.4	20	64	0
sec-Butylbenzene	3.577	3.581	-	-0.1	20	64	0
p-Isopropyltoluene	2.913	2.864	-	1.7	20	62	0
1,3-Dichlorobenzene	1.545	1.469	-	4.9	20	61	0
1,4-Dichlorobenzene	1.555	1.474	-	5.2	20	62	0
p-Diethylbenzene	1.703	1.686	-	1	20	63	0
n-Butylbenzene	2.973	3.159	-	-6.3	20	69	0
1,2-Dichlorobenzene	1.448	1.365	-	5.7	20	62	0
1,2,4,5-Tetramethylbenzene	2.748	2.688	-	2.2	20	63	0

\* Value outside of QC limits.



# Continuing Calibration

## Form 7

Client : Vertex Environmental Services, Inc.      Lab Number : L1704354  
 Project Name : EAST BOSTON      Project Number : 43068  
 Instrument ID : VOA111      Calibration Date : 02/16/17 08:41  
 Lab File ID : V11170216A03      Init. Calib. Date(s) : 01/30/17      01/31/17  
 Sample No : WG978504-2      Init. Calib. Times : 21:39      00:38  
 Channel :

Compound	Ave. RRF	RRF	Min RRF	%D	Max %D	Area%	Dev(min)
1,2-Dibromo-3-chloropropan	0.104	0.086	-	17.3	20	58	0
1,3,5-Trichlorobenzene	1.101	1.013	-	8	20	59	0
Hexachlorobutadiene	0.485	0.4	-	17.5	20	53	0
1,2,4-Trichlorobenzene	0.985	0.89	-	9.6	20	58	0
Naphthalene	2.073	1.98	-	4.5	20	62	0
1,2,3-Trichlorobenzene	0.892	0.815	-	8.6	20	58	0

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\* Value outside of QC limits.





## ANALYTICAL REPORT

Lab Number:	L1704356
Client:	Vertex Environmental Services, Inc. 400 Libbey Pkwy Weymouth, MA 02184
ATTN:	Bill Gibbons
Phone:	(617) 830-1540
Project Name:	EAST BOSTON
Project Number:	43068
Report Date:	02/28/17

The original project report/data package is held by Alpha Analytical. This report/data package is paginated and should be reproduced only in its entirety. Alpha Analytical holds no responsibility for results and/or data that are not consistent with the original.

Certifications & Approvals: MA (M-MA086), NH NELAP (2064), NJ NELAP (MA935), CT (PH-0574), IL (200077), ME (MA00086), MD (348), NY (11148), NC (25700/666), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #P330-14-00197).

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Eight Walkup Drive, Westborough, MA 01581-1019  
508-898-9220 (Fax) 508-898-9193 800-624-9220 - [www.alphalab.com](http://www.alphalab.com)



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704356  
**Report Date:** 02/28/17

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L1704356-01	VES-O-E	SOIL	MA	02/08/17 09:00	02/10/17
L1704356-02	VES-O-S	SOIL	MA	02/08/17 09:15	02/10/17
L1704356-03	VES-O-W1	SOIL	MA	02/08/17 09:20	02/10/17
L1704356-04	VES-O-W2	SOIL	MA	02/08/17 09:25	02/10/17
L1704356-05	VES-O-N	SOIL	MA	02/08/17 09:30	02/10/17

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704356  
**Report Date:** 02/28/17

### MADEP MCP Response Action Analytical Report Certification

This form provides certifications for all samples performed by MCP methods. Please refer to the Sample Results and Container Information sections of this report for specification of MCP methods used for each analysis. The following questions pertain only to MCP Analytical Methods.

<b>An affirmative response to questions A through F is required for "Presumptive Certainty" status</b>		
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
B	Were the analytical method(s) and all associated QC requirements specified in the selected CAM protocol(s) followed?	YES
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
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
E a.	VPH, EPH, and APH Methods only: Was each method conducted without significant modification(s)? (Refer to the individual method(s) for a list of significant modifications).	N/A
E b.	APH and TO-15 Methods only: Was the complete analyte list reported for each method?	N/A
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

<b>A response to questions G, H and I is required for "Presumptive Certainty" status</b>		
G	Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocol(s)?	YES
H	Were all QC performance standards specified in the CAM protocol(s) achieved?	NO
I	Were results reported for the complete analyte list specified in the selected CAM protocol(s)?	YES

**For any questions answered "No", please refer to the case narrative section on the following page(s).**

Please note that sample matrix information is located in the Sample Results section of this report.



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704356  
**Report Date:** 02/28/17

### Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively. When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. All specific QC information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated usability implications. Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances the specific failure is not narrated but noted in the associated QC table. The information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated usability implications.

Please see the associated ADEx data file for a comparison of laboratory reporting limits that were achieved with the regulatory Numerical Standards requested on the Chain of Custody.

#### HOLD POLICY

For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Client Service Representative and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Client Services at 800-624-9220 with any questions.

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704356  
**Report Date:** 02/28/17

### Case Narrative (continued)

#### Report Submission

This report replaces the report issued February 17, 2017. The report has been amended to include a narrative for PCBs analysis.

#### PCBs

In reference to question H:

The WG977423-2/-3 LCS/LCSD RPDs, associated with L1704356-01 through -05, are above the acceptance criteria for aroclor 1016 (46%) and aroclor 1260 (67%).

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature:

 Michelle M. Morris

Title: Technical Director/Representative

Date: 02/28/17

# ORGANICS



**PCBS**



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704356  
**Report Date:** 02/28/17

**SAMPLE RESULTS**

Lab ID: L1704356-01  
Client ID: VES-O-E  
Sample Location: MA  
Matrix: Soil  
Analytical Method: 97,8082A  
Analytical Date: 02/15/17 20:26  
Analyst: AF  
Percent Solids: 93%

Date Collected: 02/08/17 09:00  
Date Received: 02/10/17  
Field Prep: Not Specified  
Extraction Method: EPA 3540C  
Extraction Date: 02/13/17 23:00  
Cleanup Method: EPA 3665A  
Cleanup Date: 02/15/17  
Cleanup Method: EPA 3660B  
Cleanup Date: 02/15/17

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
<b>MCP Polychlorinated Biphenyls - Westborough Lab</b>							
Aroclor 1016	ND		ug/kg	35.0	--	1	A
Aroclor 1221	ND		ug/kg	35.0	--	1	A
Aroclor 1232	ND		ug/kg	35.0	--	1	A
Aroclor 1242	ND		ug/kg	35.0	--	1	A
Aroclor 1248	ND		ug/kg	35.0	--	1	A
Aroclor 1254	42.9		ug/kg	35.0	--	1	B
Aroclor 1260	ND		ug/kg	35.0	--	1	B
Aroclor 1262	ND		ug/kg	35.0	--	1	A
Aroclor 1268	ND		ug/kg	35.0	--	1	A
PCBs, Total	42.9		ug/kg	35.0	--	1	B

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	63		30-150	A
Decachlorobiphenyl	50		30-150	A
2,4,5,6-Tetrachloro-m-xylene	66		30-150	B
Decachlorobiphenyl	67		30-150	B

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704356  
**Report Date:** 02/28/17

**SAMPLE RESULTS**

Lab ID: L1704356-02  
Client ID: VES-O-S  
Sample Location: MA  
Matrix: Soil  
Analytical Method: 97,8082A  
Analytical Date: 02/15/17 20:40  
Analyst: AF  
Percent Solids: 96%

Date Collected: 02/08/17 09:15  
Date Received: 02/10/17  
Field Prep: Not Specified  
Extraction Method: EPA 3540C  
Extraction Date: 02/13/17 23:00  
Cleanup Method: EPA 3665A  
Cleanup Date: 02/15/17  
Cleanup Method: EPA 3660B  
Cleanup Date: 02/15/17

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
<b>MCP Polychlorinated Biphenyls - Westborough Lab</b>							
Aroclor 1016	ND		ug/kg	33.3	--	1	A
Aroclor 1221	ND		ug/kg	33.3	--	1	A
Aroclor 1232	ND		ug/kg	33.3	--	1	A
Aroclor 1242	ND		ug/kg	33.3	--	1	A
Aroclor 1248	ND		ug/kg	33.3	--	1	A
Aroclor 1254	ND		ug/kg	33.3	--	1	A
Aroclor 1260	ND		ug/kg	33.3	--	1	B
Aroclor 1262	ND		ug/kg	33.3	--	1	A
Aroclor 1268	ND		ug/kg	33.3	--	1	A
PCBs, Total	ND		ug/kg	33.3	--	1	B

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	41		30-150	A
Decachlorobiphenyl	52		30-150	A
2,4,5,6-Tetrachloro-m-xylene	54		30-150	B
Decachlorobiphenyl	68		30-150	B

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704356  
**Report Date:** 02/28/17

**SAMPLE RESULTS**

Lab ID: L1704356-03  
Client ID: VES-O-W1  
Sample Location: MA  
Matrix: Soil  
Analytical Method: 97,8082A  
Analytical Date: 02/15/17 20:54  
Analyst: AF  
Percent Solids: 96%

Date Collected: 02/08/17 09:20  
Date Received: 02/10/17  
Field Prep: Not Specified  
Extraction Method: EPA 3540C  
Extraction Date: 02/13/17 23:00  
Cleanup Method: EPA 3665A  
Cleanup Date: 02/15/17  
Cleanup Method: EPA 3660B  
Cleanup Date: 02/15/17

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
<b>MCP Polychlorinated Biphenyls - Westborough Lab</b>							
Aroclor 1016	ND		ug/kg	33.4	--	1	A
Aroclor 1221	ND		ug/kg	33.4	--	1	A
Aroclor 1232	ND		ug/kg	33.4	--	1	A
Aroclor 1242	ND		ug/kg	33.4	--	1	A
Aroclor 1248	ND		ug/kg	33.4	--	1	A
Aroclor 1254	ND		ug/kg	33.4	--	1	B
Aroclor 1260	ND		ug/kg	33.4	--	1	B
Aroclor 1262	ND		ug/kg	33.4	--	1	A
Aroclor 1268	ND		ug/kg	33.4	--	1	A
PCBs, Total	ND		ug/kg	33.4	--	1	B

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	32		30-150	A
Decachlorobiphenyl	46		30-150	A
2,4,5,6-Tetrachloro-m-xylene	45		30-150	B
Decachlorobiphenyl	64		30-150	B

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704356  
**Report Date:** 02/28/17

**SAMPLE RESULTS**

Lab ID: L1704356-04  
Client ID: VES-O-W2  
Sample Location: MA  
Matrix: Soil  
Analytical Method: 97,8082A  
Analytical Date: 02/15/17 21:07  
Analyst: AF  
Percent Solids: 94%

Date Collected: 02/08/17 09:25  
Date Received: 02/10/17  
Field Prep: Not Specified  
Extraction Method: EPA 3540C  
Extraction Date: 02/13/17 23:00  
Cleanup Method: EPA 3665A  
Cleanup Date: 02/15/17  
Cleanup Method: EPA 3660B  
Cleanup Date: 02/15/17

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
<b>MCP Polychlorinated Biphenyls - Westborough Lab</b>							
Aroclor 1016	ND		ug/kg	34.3	--	1	A
Aroclor 1221	ND		ug/kg	34.3	--	1	A
Aroclor 1232	ND		ug/kg	34.3	--	1	A
Aroclor 1242	ND		ug/kg	34.3	--	1	A
Aroclor 1248	ND		ug/kg	34.3	--	1	A
Aroclor 1254	ND		ug/kg	34.3	--	1	B
Aroclor 1260	ND		ug/kg	34.3	--	1	B
Aroclor 1262	ND		ug/kg	34.3	--	1	A
Aroclor 1268	ND		ug/kg	34.3	--	1	A
PCBs, Total	ND		ug/kg	34.3	--	1	B

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	48		30-150	A
Decachlorobiphenyl	59		30-150	A
2,4,5,6-Tetrachloro-m-xylene	61		30-150	B
Decachlorobiphenyl	80		30-150	B

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704356  
**Report Date:** 02/28/17

**SAMPLE RESULTS**

Lab ID: L1704356-05  
Client ID: VES-O-N  
Sample Location: MA  
Matrix: Soil  
Analytical Method: 97,8082A  
Analytical Date: 02/15/17 21:21  
Analyst: AF  
Percent Solids: 91%

Date Collected: 02/08/17 09:30  
Date Received: 02/10/17  
Field Prep: Not Specified  
Extraction Method: EPA 3540C  
Extraction Date: 02/13/17 23:00  
Cleanup Method: EPA 3665A  
Cleanup Date: 02/15/17  
Cleanup Method: EPA 3660B  
Cleanup Date: 02/15/17

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
<b>MCP Polychlorinated Biphenyls - Westborough Lab</b>							
Aroclor 1016	ND		ug/kg	36.6	--	1	A
Aroclor 1221	ND		ug/kg	36.6	--	1	A
Aroclor 1232	ND		ug/kg	36.6	--	1	A
Aroclor 1242	ND		ug/kg	36.6	--	1	A
Aroclor 1248	ND		ug/kg	36.6	--	1	A
Aroclor 1254	ND		ug/kg	36.6	--	1	A
Aroclor 1260	ND		ug/kg	36.6	--	1	A
Aroclor 1262	ND		ug/kg	36.6	--	1	A
Aroclor 1268	ND		ug/kg	36.6	--	1	A
PCBs, Total	ND		ug/kg	36.6	--	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	42		30-150	A
Decachlorobiphenyl	45		30-150	A
2,4,5,6-Tetrachloro-m-xylene	60		30-150	B
Decachlorobiphenyl	76		30-150	B

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704356  
**Report Date:** 02/28/17

### Method Blank Analysis Batch Quality Control

Analytical Method: 97,8082A  
Analytical Date: 02/15/17 22:17  
Analyst: AF

Extraction Method: EPA 3540C  
Extraction Date: 02/13/17 23:00  
Cleanup Method: EPA 3665A  
Cleanup Date: 02/15/17  
Cleanup Method: EPA 3660B  
Cleanup Date: 02/15/17

Parameter	Result	Qualifier	Units	RL	MDL	Column
MCP Polychlorinated Biphenyls - Westborough Lab for sample(s): 01-05 Batch: WG977423-1						
Aroclor 1016	ND		ug/kg	32.2	--	A
Aroclor 1221	ND		ug/kg	32.2	--	A
Aroclor 1232	ND		ug/kg	32.2	--	A
Aroclor 1242	ND		ug/kg	32.2	--	A
Aroclor 1248	ND		ug/kg	32.2	--	A
Aroclor 1254	ND		ug/kg	32.2	--	A
Aroclor 1260	ND		ug/kg	32.2	--	A
Aroclor 1262	ND		ug/kg	32.2	--	A
Aroclor 1268	ND		ug/kg	32.2	--	A
PCBs, Total	ND		ug/kg	32.2	--	A

Surrogate	%Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	72		30-150	A
Decachlorobiphenyl	36		30-150	A
2,4,5,6-Tetrachloro-m-xylene	80		30-150	B
Decachlorobiphenyl	62		30-150	B

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704356  
**Report Date:** 02/28/17

<b>Parameter</b>	<i>LCS</i> %Recovery	<i>Qual</i>	<i>LCSD</i> %Recovery	<i>Qual</i>	<i>%Recovery</i> <i>Limits</i>	<i>RPD</i>	<i>Qual</i>	<i>RPD</i> <i>Limits</i>	<i>Column</i>
MCP Polychlorinated Biphenyls - Westborough Lab Associated sample(s): 01-05 Batch: WG977423-2 WG977423-3									
Aroclor 1016	110		69		40-140	46	Q	30	A
Aroclor 1260	120		60		40-140	67	Q	30	A

<b>Surrogate</b>	<i>LCS</i> %Recovery	<i>Qual</i>	<i>LCSD</i> %Recovery	<i>Qual</i>	<i>Acceptance</i> <i>Criteria</i>	<i>Column</i>
2,4,5,6-Tetrachloro-m-xylene	84		81		30-150	A
Decachlorobiphenyl	86		58		30-150	A
2,4,5,6-Tetrachloro-m-xylene	89		61		30-150	B
Decachlorobiphenyl	77		63		30-150	B

# **INORGANICS & MISCELLANEOUS**



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704356  
**Report Date:** 02/28/17

### SAMPLE RESULTS

Lab ID:	L1704356-01	Date Collected:	02/08/17 09:00
Client ID:	VES-O-E	Date Received:	02/10/17
Sample Location:	MA	Field Prep:	Not Specified
Matrix:	Soil		

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>General Chemistry - Westborough Lab</b>										
Solids, Total	93.1		%	0.100	NA	1	-	02/13/17 15:37	121,2540G	RI

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704356  
**Report Date:** 02/28/17

### SAMPLE RESULTS

Lab ID:	L1704356-02	Date Collected:	02/08/17 09:15
Client ID:	VES-O-S	Date Received:	02/10/17
Sample Location:	MA	Field Prep:	Not Specified
Matrix:	Soil		

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>General Chemistry - Westborough Lab</b>										
Solids, Total	95.9		%	0.100	NA	1	-	02/13/17 15:37	121,2540G	RI



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704356  
**Report Date:** 02/28/17

### SAMPLE RESULTS

Lab ID:	L1704356-03	Date Collected:	02/08/17 09:20
Client ID:	VES-O-W1	Date Received:	02/10/17
Sample Location:	MA	Field Prep:	Not Specified
Matrix:	Soil		

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>General Chemistry - Westborough Lab</b>										
Solids, Total	96.0		%	0.100	NA	1	-	02/13/17 15:37	121,2540G	RI



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704356  
**Report Date:** 02/28/17

### SAMPLE RESULTS

Lab ID:	L1704356-04	Date Collected:	02/08/17 09:25
Client ID:	VES-O-W2	Date Received:	02/10/17
Sample Location:	MA	Field Prep:	Not Specified
Matrix:	Soil		

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>General Chemistry - Westborough Lab</b>										
Solids, Total	93.6		%	0.100	NA	1	-	02/13/17 15:37	121,2540G	RI



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704356  
**Report Date:** 02/28/17

### SAMPLE RESULTS

Lab ID:	L1704356-05	Date Collected:	02/08/17 09:30
Client ID:	VES-O-N	Date Received:	02/10/17
Sample Location:	MA	Field Prep:	Not Specified
Matrix:	Soil		

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>General Chemistry - Westborough Lab</b>										
Solids, Total	90.8		%	0.100	NA	1	-	02/13/17 15:37	121,2540G	RI



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Duplicate Analysis**  
**Batch Quality Control**

**Lab Number:** L1704356  
**Report Date:** 02/28/17

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01-05 QC Batch ID: WG977361-1 QC Sample: L1704356-01 Client ID: VES-O-E						
Solids, Total	93.1	91.6	%	2		20

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704356  
**Report Date:** 02/28/17

### Sample Receipt and Container Information

Were project specific reporting limits specified? YES

#### Cooler Information Custody Seal

##### Cooler

A Absent

#### Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L1704356-01A	Glass 120ml/4oz unpreserved	A	N/A	3.1	Y	Absent	TS(7),MCP-8082-10-3540C(365)
L1704356-02A	Glass 120ml/4oz unpreserved	A	N/A	3.1	Y	Absent	TS(7),MCP-8082-10-3540C(365)
L1704356-03A	Glass 120ml/4oz unpreserved	A	N/A	3.1	Y	Absent	TS(7),MCP-8082-10-3540C(365)
L1704356-04A	Glass 120ml/4oz unpreserved	A	N/A	3.1	Y	Absent	TS(7),MCP-8082-10-3540C(365)
L1704356-05A	Glass 120ml/4oz unpreserved	A	N/A	3.1	Y	Absent	TS(7),MCP-8082-10-3540C(365)

\*Values in parentheses indicate holding time in days

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704356  
**Report Date:** 02/28/17

## GLOSSARY

### **Acronyms**

EDL	- Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).
EPA	- Environmental Protection Agency.
LCS	- Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCSD	- Laboratory Control Sample Duplicate: Refer to LCS.
LFB	- Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
MDL	- Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
MS	- Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available.
MSD	- Matrix Spike Sample Duplicate: Refer to MS.
NA	- Not Applicable.
NC	- Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
NDPA/DPA	- N-Nitrosodiphenylamine/Diphenylamine.
NI	- Not Ignitable.
NP	- Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.
RL	- Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
RPD	- Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.
SRM	- Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.
STLP	- Semi-dynamic Tank Leaching Procedure per EPA Method 1315.
TIC	- Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

### **Footnotes**

- 1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

### **Terms**

**Total:** With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

**Analytical Method:** Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

### **Data Qualifiers**

- A** - Spectra identified as "Aldol Condensation Product".
- B** - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the

**Report Format:** Data Usability Report



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704356  
**Report Date:** 02/28/17

**Data Qualifiers**

reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

- C** - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.
- D** - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.
- E** - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.
- G** - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.
- H** - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.
- I** - The lower value for the two columns has been reported due to obvious interference.
- M** - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.
- NJ** - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.
- P** - The RPD between the results for the two columns exceeds the method-specified criteria.
- Q** - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)
- R** - Analytical results are from sample re-analysis.
- RE** - Analytical results are from sample re-extraction.
- S** - Analytical results are from modified screening analysis.
- J** - Estimated value. This represents an estimated concentration for Tentatively Identified Compounds (TICs).
- ND** - Not detected at the reporting limit (RL) for the sample.

*Report Format:* Data Usability Report



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704356  
**Report Date:** 02/28/17

## REFERENCES

- 97 EPA Test Methods (SW-846) with QC Requirements & Performance Standards for the Analysis of EPA SW-846 Methods under the Massachusetts Contingency Plan, WSC-CAM-IIA, IIB, IIIA, IIIB, IIIC, IID, VA, VB, VC, VIA, VIB, VIIIA and VIIIB, July 2010.
- 121 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. Standard Methods Online.

## LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at its own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.



## Certification Information

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**The following analytes are not included in our Primary NELAP Scope of Accreditation:**

**Westborough Facility**

EPA 624: m/p-xylene, o-xylene

EPA 8260C: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), Methyl methacrylate, 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.

EPA 8270D: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.

EPA 300: DW: Bromide

EPA 6860: NPW and SCM: Perchlorate

EPA 9010: NPW and SCM: Amenable Cyanide Distillation

EPA 9012B: NPW: Total Cyanide

EPA 9050A: NPW: Specific Conductance

SM3500: NPW: Ferrous Iron

SM4500: NPW: Amenable Cyanide, Dissolved Oxygen; SCM: Total Phosphorus, TKN, NO<sub>2</sub>, NO<sub>3</sub>.

SM5310C: DW: Dissolved Organic Carbon

**Mansfield Facility**

SM 2540D: TSS

EPA 3005A NPW

EPA 8082A: NPW: PCB: 1, 5, 31, 87, 101, 110, 141, 151, 153, 180, 183, 187.

EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.

**Biological Tissue Matrix**: EPA 3050B

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**The following analytes are included in our Massachusetts DEP Scope of Accreditation**

**Westborough Facility:**

**Drinking Water**

EPA 300.0: Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C**, **SM4500CN-CE**, **EPA 180.1**,

**SM2130B**, **SM4500CI-D**, **SM2320B**, **SM2540C**, **SM4500H-B**

EPA 332: Perchlorate; **EPA 524.2**: THMs and VOCs; **EPA 504.1**: EDB, DBCP.

Microbiology: **SM9215B**; **SM9223-P/A**, **SM9223B-Colilert-QT**, **SM9222D**.

**Non-Potable Water**

**SM4500H,B**, **EPA 120.1**, **SM2510B**, **SM2540C**, **SM2320B**, **SM4500CL-E**, **SM4500F-BC**, **SM4500NH3-BH**, **EPA 350.1**: Ammonia-N, LACHAT 10-107-06-1-B: Ammonia-N, **SM4500NO3-F**, **EPA 353.2**: Nitrate-N, **EPA 351.1**, **SM4500P-E**, **SM4500P-B**, **E**, **SM4500SO4-E**, **SM5220D**, **EPA 410.4**, **SM5210B**, **SM5310C**, **SM4500CL-D**, **EPA 1664**, **EPA 420.1**, **SM4500-CN-CE**, **SM2540D**.

EPA 624: Volatile Halocarbons & Aromatics,

EPA 608: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs

EPA 625: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045**: PCB-Oil.

Microbiology: **SM9223B-Colilert-QT**; **Enterolert-QT**, **SM9221E**.

**Mansfield Facility:**

**Drinking Water**

EPA 200.7: Ba, Be, Cd, Cr, Cu, Ni, Na, Ca. **EPA 200.8**: Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Ni, Se, TL. **EPA 245.1 Hg**.

**Non-Potable Water**

EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.

EPA 200.8: Al, Sb, As, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn.

EPA 245.1 Hg.

**SM2340B**

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For a complete listing of analytes and methods, please contact your Alpha Project Manager.



## CHAIN OF CUSTODY

PAGE 1 OF 1

8 Walkup Drive  
Westboro, MA 01581  
Tel: 508-898-9220

320 Forbes Blvd  
Mansfield, MA 02048  
Tel: 508-822-9300

## Client Information

Client: Vertex

Address: One Congress St, 10th Fl  
Boston, MA 02114

Phone: 781-917-5360

Email: hghibbons@vertexeng.com  
chapp@vertexeng.com

Additional Project Information:

## Project Information

Project Name: East Boston

Project Location: MA

Project #: 43068

Project Manager: B Gibbons

ALPHA Quote #:

## Turn-Around Time

 Standard RUSH (only confirmed if pre-approved)

Date Due:

Date Rec'd in Lab:

02/01/17

ALPHA Job #:

L1704356

## Billing Information

 Same as Client Info

PO #:

## Regulatory Requirements &amp; Project Information Requirements

- Yes  No MA MCP Analytical Methods       Yes  No CT RCP Analytical Methods  
 Yes  No Matrix Spike Required on this SDG? (Required for MCP Inorganics)  
 Yes  No GW1 Standards (Info Required for Metals & EPH with Targets)  
 Yes  No NPDES RGP  
 Other State /Fed Program \_\_\_\_\_ Criteria \_\_\_\_\_

SAMPLE INFO		TOTAL #
Filtration		#
<input type="checkbox"/> Field		
<input type="checkbox"/> Lab to do		
Preservation		
<input type="checkbox"/> Lab to do		
Sample Comments		

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection		Sample Matrix	Sampler Initials
		Date	Time		
04356-01	VES-O-E	2/8/17	0900	SJ	BS
02	VES-O-S		0905		KS
03	VES-O-WI		0920		KS
04	VES-C-W2		0925		KS
05	VES-C-N		0930		KS

↓      ↓      ↓      ↓

Container Type  
P= Plastic  
A= Amber glass  
V= Vial  
G= Glass  
B= Bacteria cup  
C= Cube  
O= Other  
E= Encore  
D= BOD Bottle

Preservative  
A= None  
B= HCl  
C= HNO<sub>3</sub>  
D= H<sub>2</sub>SO<sub>4</sub>  
E= NaOH  
F= MeOH  
G= NaHSO<sub>4</sub>  
H= Na<sub>2</sub>O<sub>3</sub>  
I= Ascorbic Acid  
J= NH<sub>4</sub>Cl  
K= Zn Acetate  
O= Other

Container Type

A

Preservative

A

Relinquished By:	Date/Time	Received By:	Date/Time
<i>M. Martin</i>	2/10/17 1500 2/10/17 1805	<i>John Dunn</i>	2/10/17 1510 2/10/17 1805

All samples submitted are subject to  
Alpha's Terms and Conditions.  
See reverse side.

FORM NO. 01-01 (rev. 12-Mar-2012)



## ANALYTICAL REPORT

Lab Number:	L1704637
Client:	Vertex Environmental Services, Inc. 400 Libbey Pkwy Weymouth, MA 02184
ATTN:	Bill Gibbons
Phone:	(617) 830-1540
Project Name:	EAST BOSTON
Project Number:	43068
Report Date:	02/21/17

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Certifications & Approvals: MA (M-MA086), NH NELAP (2064), NJ NELAP (MA935), CT (PH-0574), IL (200077), ME (MA00086), MD (348), NH (2003), NY (11148), NC (25700/666), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #P330-14-00197).

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Eight Walkup Drive, Westborough, MA 01581-1019  
508-898-9220 (Fax) 508-898-9193 800-624-9220 - [www.alphalab.com](http://www.alphalab.com)



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704637  
**Report Date:** 02/21/17

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L1704637-01	VES-104 (2-4)	SOIL	MA	02/14/17 09:00	02/14/17
L1704637-02	VES-106 (5-7)	SOIL	MA	02/14/17 11:30	02/14/17
L1704637-03	VES-110 (0-2)	SOIL	MA	02/14/17 09:45	02/14/17
L1704637-04	VES-110 (2-4)	SOIL	MA	02/14/17 09:50	02/14/17
L1704637-05	VES-110 (12-14)	SOIL	MA	02/14/17 09:55	02/14/17
L1704637-06	VES-111 (0-2)	SOIL	MA	02/14/17 11:35	02/14/17
L1704637-07	VES-111 (2-4)	SOIL	MA	02/14/17 11:40	02/14/17
L1704637-08	VES-125 (0-2)	SOIL	MA	02/14/17 14:35	02/14/17

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704637  
**Report Date:** 02/21/17

### MADEP MCP Response Action Analytical Report Certification

This form provides certifications for all samples performed by MCP methods. Please refer to the Sample Results and Container Information sections of this report for specification of MCP methods used for each analysis. The following questions pertain only to MCP Analytical Methods.

<b>An affirmative response to questions A through F is required for "Presumptive Certainty" status</b>		
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
B	Were the analytical method(s) and all associated QC requirements specified in the selected CAM protocol(s) followed?	YES
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
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
E a.	VPH, EPH, and APH Methods only: Was each method conducted without significant modification(s)? (Refer to the individual method(s) for a list of significant modifications).	YES
E b.	APH and TO-15 Methods only: Was the complete analyte list reported for each method?	N/A
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

<b>A response to questions G, H and I is required for "Presumptive Certainty" status</b>		
G	Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocol(s)?	NO
H	Were all QC performance standards specified in the CAM protocol(s) achieved?	NO
I	Were results reported for the complete analyte list specified in the selected CAM protocol(s)?	NO

**For any questions answered "No", please refer to the case narrative section on the following page(s).**

Please note that sample matrix information is located in the Sample Results section of this report.



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704637  
**Report Date:** 02/21/17

### Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively. When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. All specific QC information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated usability implications. Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances the specific failure is not narrated but noted in the associated QC table. The information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated usability implications.

Please see the associated ADEx data file for a comparison of laboratory reporting limits that were achieved with the regulatory Numerical Standards requested on the Chain of Custody.

#### HOLD POLICY

For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Client Service Representative and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Client Services at 800-624-9220 with any questions.

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704637  
**Report Date:** 02/21/17

### Case Narrative (continued)

#### MCP Related Narratives

##### Sample Receipt

##### In reference to question H:

A Matrix Spike was not submitted for the analysis of Metals.

#### Volatile Organics

L1704637-04 was analyzed as a High Level Methanol in order to quantitate the sample within the calibration range. The result should be considered estimated, and is qualified with an E flag, for any compound that exceeded the calibration on the initial Low Level analysis. The results of both analyses are reported.

##### In reference to question H:

The initial calibration, associated with L1704637-01, -02, -04, -05, -07, and -08, did not meet the method required minimum response factor on the lowest calibration standard for 1,4-dioxane (0.0014), as well as the average response factor for 1,4-dioxane. The initial calibration verification is outside acceptance criteria for dichlorodifluoromethane (66%) and carbon disulfide (66%), but within overall method criteria.

The continuing calibration standards, associated with L1704637-01, -02, -04, -05, -07, and -08, are outside the acceptance criteria for several compounds; however, they are within overall method allowances. Copies of the continuing calibration standards are included as an addendum to this report.

#### VPH

##### In reference to question I:

All samples were analyzed for a subset of MCP analytes per the Chain of Custody.

#### Pesticides

A copy of the Degradation Standards for 4,4'-DDT and Endrin breakdown products is included as an addendum.

##### In reference to question G:

One or more of the target analytes did not achieve the requested CAM reporting limits.

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704637  
**Report Date:** 02/21/17

**Case Narrative (continued)**

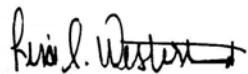
Metals

In reference to question I:

All samples were analyzed for a subset of MCP analytes per the Chain of Custody.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature:

 Lisa Westerlind

Title: Technical Director/Representative

Date: 02/21/17

# ORGANICS



# VOLATILES



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704637  
**Report Date:** 02/21/17

**SAMPLE RESULTS**

Lab ID: L1704637-01  
Client ID: VES-104 (2-4)  
Sample Location: MA  
Matrix: Soil  
Analytical Method: 97,8260C  
Analytical Date: 02/17/17 13:46  
Analyst: JC  
Percent Solids: 83%

Date Collected: 02/14/17 09:00  
Date Received: 02/14/17  
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics by 8260/5035 - Westborough Lab</b>						
Methylene chloride	ND	ug/kg	14	--	--	1
1,1-Dichloroethane	ND	ug/kg	2.1	--	--	1
Chloroform	ND	ug/kg	2.1	--	--	1
Carbon tetrachloride	ND	ug/kg	1.4	--	--	1
1,2-Dichloropropane	ND	ug/kg	4.8	--	--	1
Dibromochloromethane	ND	ug/kg	1.4	--	--	1
1,1,2-Trichloroethane	ND	ug/kg	2.1	--	--	1
Tetrachloroethene	ND	ug/kg	1.4	--	--	1
Chlorobenzene	ND	ug/kg	1.4	--	--	1
Trichlorofluoromethane	ND	ug/kg	5.5	--	--	1
1,2-Dichloroethane	ND	ug/kg	1.4	--	--	1
1,1,1-Trichloroethane	ND	ug/kg	1.4	--	--	1
Bromodichloromethane	ND	ug/kg	1.4	--	--	1
trans-1,3-Dichloropropene	ND	ug/kg	1.4	--	--	1
cis-1,3-Dichloropropene	ND	ug/kg	1.4	--	--	1
1,3-Dichloropropene, Total	ND	ug/kg	1.4	--	--	1
1,1-Dichloropropene	ND	ug/kg	5.5	--	--	1
Bromoform	ND	ug/kg	5.5	--	--	1
1,1,2,2-Tetrachloroethane	ND	ug/kg	1.4	--	--	1
Benzene	ND	ug/kg	1.4	--	--	1
Toluene	ND	ug/kg	2.1	--	--	1
Ethylbenzene	ND	ug/kg	1.4	--	--	1
Chloromethane	ND	ug/kg	5.5	--	--	1
Bromomethane	ND	ug/kg	2.8	--	--	1
Vinyl chloride	ND	ug/kg	2.8	--	--	1
Chloroethane	ND	ug/kg	2.8	--	--	1
1,1-Dichloroethene	ND	ug/kg	1.4	--	--	1
trans-1,2-Dichloroethene	ND	ug/kg	2.1	--	--	1
Trichloroethene	ND	ug/kg	1.4	--	--	1
1,2-Dichlorobenzene	ND	ug/kg	5.5	--	--	1



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704637  
**Report Date:** 02/21/17

**SAMPLE RESULTS**

Lab ID:	L1704637-01	Date Collected:	02/14/17 09:00		
Client ID:	VES-104 (2-4)	Date Received:	02/14/17		
Sample Location:	MA	Field Prep:	Not Specified		
Parameter	Result	Qualifier	Units	RL	MDL
<b>MCP Volatile Organics by 8260/5035 - Westborough Lab</b>					
1,3-Dichlorobenzene	ND	ug/kg	5.5	--	1
1,4-Dichlorobenzene	ND	ug/kg	5.5	--	1
Methyl tert butyl ether	ND	ug/kg	2.8	--	1
p/m-Xylene	ND	ug/kg	2.8	--	1
o-Xylene	ND	ug/kg	2.8	--	1
Xylenes, Total	ND	ug/kg	2.8	--	1
cis-1,2-Dichloroethene	ND	ug/kg	1.4	--	1
1,2-Dichloroethene, Total	ND	ug/kg	1.4	--	1
Dibromomethane	ND	ug/kg	5.5	--	1
1,2,3-Trichloropropane	ND	ug/kg	5.5	--	1
Styrene	ND	ug/kg	2.8	--	1
Dichlorodifluoromethane	ND	ug/kg	14	--	1
Acetone	ND	ug/kg	50	--	1
Carbon disulfide	ND	ug/kg	5.5	--	1
Methyl ethyl ketone	ND	ug/kg	14	--	1
Methyl isobutyl ketone	ND	ug/kg	14	--	1
2-Hexanone	ND	ug/kg	14	--	1
Bromochloromethane	ND	ug/kg	5.5	--	1
Tetrahydrofuran	ND	ug/kg	5.5	--	1
2,2-Dichloropropane	ND	ug/kg	6.9	--	1
1,2-Dibromoethane	ND	ug/kg	5.5	--	1
1,3-Dichloropropane	ND	ug/kg	5.5	--	1
1,1,1,2-Tetrachloroethane	ND	ug/kg	1.4	--	1
Bromobenzene	ND	ug/kg	6.9	--	1
n-Butylbenzene	ND	ug/kg	1.4	--	1
sec-Butylbenzene	ND	ug/kg	1.4	--	1
tert-Butylbenzene	ND	ug/kg	5.5	--	1
o-Chlorotoluene	ND	ug/kg	5.5	--	1
p-Chlorotoluene	ND	ug/kg	5.5	--	1
1,2-Dibromo-3-chloropropane	ND	ug/kg	5.5	--	1
Hexachlorobutadiene	ND	ug/kg	5.5	--	1
Isopropylbenzene	ND	ug/kg	1.4	--	1
p-Isopropyltoluene	ND	ug/kg	1.4	--	1
Naphthalene	ND	ug/kg	5.5	--	1
n-Propylbenzene	ND	ug/kg	1.4	--	1
1,2,3-Trichlorobenzene	ND	ug/kg	5.5	--	1
1,2,4-Trichlorobenzene	ND	ug/kg	5.5	--	1
1,3,5-Trimethylbenzene	ND	ug/kg	5.5	--	1
1,2,4-Trimethylbenzene	ND	ug/kg	5.5	--	1



Project Name: EAST BOSTON

Lab Number: L1704637

Project Number: 43068

Report Date: 02/21/17

**SAMPLE RESULTS**

Lab ID: L1704637-01  
 Client ID: VES-104 (2-4)  
 Sample Location: MA

Date Collected: 02/14/17 09:00  
 Date Received: 02/14/17  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics by 8260/5035 - Westborough Lab						
Diethyl ether	ND	ug/kg	6.9	--	--	1
Diisopropyl Ether	ND	ug/kg	5.5	--	--	1
Ethyl-Tert-Butyl-Ether	ND	ug/kg	5.5	--	--	1
Tertiary-Amyl Methyl Ether	ND	ug/kg	5.5	--	--	1
1,4-Dioxane	ND	ug/kg	55	--	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	112		70-130
Toluene-d8	101		70-130
4-Bromofluorobenzene	115		70-130
Dibromofluoromethane	110		70-130

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704637  
**Report Date:** 02/21/17

**SAMPLE RESULTS**

Lab ID: L1704637-02  
Client ID: VES-106 (5-7)  
Sample Location: MA  
Matrix: Soil  
Analytical Method: 97,8260C  
Analytical Date: 02/17/17 14:12  
Analyst: JC  
Percent Solids: 69%

Date Collected: 02/14/17 11:30  
Date Received: 02/14/17  
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics by 8260/5035 - Westborough Lab</b>						
Methylene chloride	ND	ug/kg	14	--	--	1
1,1-Dichloroethane	ND	ug/kg	2.1	--	--	1
Chloroform	ND	ug/kg	2.1	--	--	1
Carbon tetrachloride	ND	ug/kg	1.4	--	--	1
1,2-Dichloropropane	ND	ug/kg	5.0	--	--	1
Dibromochloromethane	ND	ug/kg	1.4	--	--	1
1,1,2-Trichloroethane	ND	ug/kg	2.1	--	--	1
Tetrachloroethene	ND	ug/kg	1.4	--	--	1
Chlorobenzene	ND	ug/kg	1.4	--	--	1
Trichlorofluoromethane	ND	ug/kg	5.7	--	--	1
1,2-Dichloroethane	ND	ug/kg	1.4	--	--	1
1,1,1-Trichloroethane	1.9	ug/kg	1.4	--	--	1
Bromodichloromethane	ND	ug/kg	1.4	--	--	1
trans-1,3-Dichloropropene	ND	ug/kg	1.4	--	--	1
cis-1,3-Dichloropropene	ND	ug/kg	1.4	--	--	1
1,3-Dichloropropene, Total	ND	ug/kg	1.4	--	--	1
1,1-Dichloropropene	ND	ug/kg	5.7	--	--	1
Bromoform	ND	ug/kg	5.7	--	--	1
1,1,2,2-Tetrachloroethane	ND	ug/kg	1.4	--	--	1
Benzene	ND	ug/kg	1.4	--	--	1
Toluene	ND	ug/kg	2.1	--	--	1
Ethylbenzene	ND	ug/kg	1.4	--	--	1
Chloromethane	ND	ug/kg	5.7	--	--	1
Bromomethane	ND	ug/kg	2.8	--	--	1
Vinyl chloride	ND	ug/kg	2.8	--	--	1
Chloroethane	ND	ug/kg	2.8	--	--	1
1,1-Dichloroethene	ND	ug/kg	1.4	--	--	1
trans-1,2-Dichloroethene	ND	ug/kg	2.1	--	--	1
Trichloroethene	ND	ug/kg	1.4	--	--	1
1,2-Dichlorobenzene	ND	ug/kg	5.7	--	--	1



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704637  
**Report Date:** 02/21/17

**SAMPLE RESULTS**

Lab ID:	L1704637-02	Date Collected:	02/14/17 11:30		
Client ID:	VES-106 (5-7)	Date Received:	02/14/17		
Sample Location:	MA	Field Prep:	Not Specified		
Parameter	Result	Qualifier	Units	RL	MDL
<b>MCP Volatile Organics by 8260/5035 - Westborough Lab</b>					
1,3-Dichlorobenzene	ND	ug/kg	5.7	--	1
1,4-Dichlorobenzene	ND	ug/kg	5.7	--	1
Methyl tert butyl ether	ND	ug/kg	2.8	--	1
p/m-Xylene	ND	ug/kg	2.8	--	1
o-Xylene	ND	ug/kg	2.8	--	1
Xylenes, Total	ND	ug/kg	2.8	--	1
cis-1,2-Dichloroethene	ND	ug/kg	1.4	--	1
1,2-Dichloroethene, Total	ND	ug/kg	1.4	--	1
Dibromomethane	ND	ug/kg	5.7	--	1
1,2,3-Trichloropropane	ND	ug/kg	5.7	--	1
Styrene	ND	ug/kg	2.8	--	1
Dichlorodifluoromethane	ND	ug/kg	14	--	1
Acetone	56	ug/kg	51	--	1
Carbon disulfide	6.1	ug/kg	5.7	--	1
Methyl ethyl ketone	ND	ug/kg	14	--	1
Methyl isobutyl ketone	ND	ug/kg	14	--	1
2-Hexanone	ND	ug/kg	14	--	1
Bromochloromethane	ND	ug/kg	5.7	--	1
Tetrahydrofuran	ND	ug/kg	5.7	--	1
2,2-Dichloropropane	ND	ug/kg	7.1	--	1
1,2-Dibromoethane	ND	ug/kg	5.7	--	1
1,3-Dichloropropane	ND	ug/kg	5.7	--	1
1,1,1,2-Tetrachloroethane	ND	ug/kg	1.4	--	1
Bromobenzene	ND	ug/kg	7.1	--	1
n-Butylbenzene	ND	ug/kg	1.4	--	1
sec-Butylbenzene	ND	ug/kg	1.4	--	1
tert-Butylbenzene	ND	ug/kg	5.7	--	1
o-Chlorotoluene	ND	ug/kg	5.7	--	1
p-Chlorotoluene	ND	ug/kg	5.7	--	1
1,2-Dibromo-3-chloropropane	ND	ug/kg	5.7	--	1
Hexachlorobutadiene	ND	ug/kg	5.7	--	1
Isopropylbenzene	ND	ug/kg	1.4	--	1
p-Isopropyltoluene	2.0	ug/kg	1.4	--	1
Naphthalene	ND	ug/kg	5.7	--	1
n-Propylbenzene	ND	ug/kg	1.4	--	1
1,2,3-Trichlorobenzene	ND	ug/kg	5.7	--	1
1,2,4-Trichlorobenzene	ND	ug/kg	5.7	--	1
1,3,5-Trimethylbenzene	ND	ug/kg	5.7	--	1
1,2,4-Trimethylbenzene	ND	ug/kg	5.7	--	1



Project Name: EAST BOSTON

Lab Number: L1704637

Project Number: 43068

Report Date: 02/21/17

**SAMPLE RESULTS**

Lab ID: L1704637-02  
 Client ID: VES-106 (5-7)  
 Sample Location: MA

Date Collected: 02/14/17 11:30  
 Date Received: 02/14/17  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics by 8260/5035 - Westborough Lab						
Diethyl ether	ND	ug/kg	7.1	--	--	1
Diisopropyl Ether	ND	ug/kg	5.7	--	--	1
Ethyl-Tert-Butyl-Ether	ND	ug/kg	5.7	--	--	1
Tertiary-Amyl Methyl Ether	ND	ug/kg	5.7	--	--	1
1,4-Dioxane	ND	ug/kg	57	--	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	114		70-130
Toluene-d8	85		70-130
4-Bromofluorobenzene	129		70-130
Dibromofluoromethane	115		70-130

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704637  
**Report Date:** 02/21/17

**SAMPLE RESULTS**

Lab ID: L1704637-04  
Client ID: VES-110 (2-4)  
Sample Location: MA  
Matrix: Soil  
Analytical Method: 97,8260C  
Analytical Date: 02/17/17 14:38  
Analyst: JC  
Percent Solids: 80%

Date Collected: 02/14/17 09:50  
Date Received: 02/14/17  
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics by 8260/5035 - Westborough Lab</b>						
Methylene chloride	ND	ug/kg	7.5	--	--	1
1,1-Dichloroethane	ND	ug/kg	1.1	--	--	1
Chloroform	ND	ug/kg	1.1	--	--	1
Carbon tetrachloride	ND	ug/kg	0.75	--	--	1
1,2-Dichloropropane	ND	ug/kg	2.6	--	--	1
Dibromochloromethane	ND	ug/kg	0.75	--	--	1
1,1,2-Trichloroethane	ND	ug/kg	1.1	--	--	1
Tetrachloroethene	ND	ug/kg	0.75	--	--	1
Chlorobenzene	ND	ug/kg	0.75	--	--	1
Trichlorofluoromethane	ND	ug/kg	3.0	--	--	1
1,2-Dichloroethane	ND	ug/kg	0.75	--	--	1
1,1,1-Trichloroethane	ND	ug/kg	0.75	--	--	1
Bromodichloromethane	ND	ug/kg	0.75	--	--	1
trans-1,3-Dichloropropene	ND	ug/kg	0.75	--	--	1
cis-1,3-Dichloropropene	ND	ug/kg	0.75	--	--	1
1,3-Dichloropropene, Total	ND	ug/kg	0.75	--	--	1
1,1-Dichloropropene	ND	ug/kg	3.0	--	--	1
Bromoform	ND	ug/kg	3.0	--	--	1
1,1,2,2-Tetrachloroethane	ND	ug/kg	0.75	--	--	1
Benzene	ND	ug/kg	0.75	--	--	1
Toluene	ND	ug/kg	1.1	--	--	1
Ethylbenzene	ND	ug/kg	0.75	--	--	1
Chloromethane	ND	ug/kg	3.0	--	--	1
Bromomethane	ND	ug/kg	1.5	--	--	1
Vinyl chloride	ND	ug/kg	1.5	--	--	1
Chloroethane	ND	ug/kg	1.5	--	--	1
1,1-Dichloroethene	ND	ug/kg	0.75	--	--	1
trans-1,2-Dichloroethene	ND	ug/kg	1.1	--	--	1
Trichloroethene	ND	ug/kg	0.75	--	--	1
1,2-Dichlorobenzene	ND	ug/kg	3.0	--	--	1



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704637  
**Report Date:** 02/21/17

**SAMPLE RESULTS**

Lab ID:	L1704637-04	Date Collected:	02/14/17 09:50			
Client ID:	VES-110 (2-4)	Date Received:	02/14/17			
Sample Location:	MA	Field Prep:	Not Specified			
Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics by 8260/5035 - Westborough Lab</b>						
1,3-Dichlorobenzene	ND		ug/kg	3.0	--	1
1,4-Dichlorobenzene	ND		ug/kg	3.0	--	1
Methyl tert butyl ether	ND		ug/kg	1.5	--	1
p/m-Xylene	ND		ug/kg	1.5	--	1
o-Xylene	ND		ug/kg	1.5	--	1
Xylenes, Total	ND		ug/kg	1.5	--	1
cis-1,2-Dichloroethene	ND		ug/kg	0.75	--	1
1,2-Dichloroethene, Total	ND		ug/kg	0.75	--	1
Dibromomethane	ND		ug/kg	3.0	--	1
1,2,3-Trichloropropane	ND		ug/kg	3.0	--	1
Styrene	ND		ug/kg	1.5	--	1
Dichlorodifluoromethane	ND		ug/kg	7.5	--	1
Acetone	500	E	ug/kg	27	--	1
Carbon disulfide	ND		ug/kg	3.0	--	1
Methyl ethyl ketone	87		ug/kg	7.5	--	1
Methyl isobutyl ketone	ND		ug/kg	7.5	--	1
2-Hexanone	ND		ug/kg	7.5	--	1
Bromochloromethane	ND		ug/kg	3.0	--	1
Tetrahydrofuran	ND		ug/kg	3.0	--	1
2,2-Dichloropropane	ND		ug/kg	3.7	--	1
1,2-Dibromoethane	ND		ug/kg	3.0	--	1
1,3-Dichloropropane	ND		ug/kg	3.0	--	1
1,1,1,2-Tetrachloroethane	ND		ug/kg	0.75	--	1
Bromobenzene	ND		ug/kg	3.7	--	1
n-Butylbenzene	ND		ug/kg	0.75	--	1
sec-Butylbenzene	ND		ug/kg	0.75	--	1
tert-Butylbenzene	ND		ug/kg	3.0	--	1
o-Chlorotoluene	ND		ug/kg	3.0	--	1
p-Chlorotoluene	ND		ug/kg	3.0	--	1
1,2-Dibromo-3-chloropropane	ND		ug/kg	3.0	--	1
Hexachlorobutadiene	ND		ug/kg	3.0	--	1
Isopropylbenzene	ND		ug/kg	0.75	--	1
p-Isopropyltoluene	ND		ug/kg	0.75	--	1
Naphthalene	ND		ug/kg	3.0	--	1
n-Propylbenzene	ND		ug/kg	0.75	--	1
1,2,3-Trichlorobenzene	ND		ug/kg	3.0	--	1
1,2,4-Trichlorobenzene	ND		ug/kg	3.0	--	1
1,3,5-Trimethylbenzene	ND		ug/kg	3.0	--	1
1,2,4-Trimethylbenzene	ND		ug/kg	3.0	--	1



Project Name: EAST BOSTON

Lab Number: L1704637

Project Number: 43068

Report Date: 02/21/17

**SAMPLE RESULTS**

Lab ID: L1704637-04  
 Client ID: VES-110 (2-4)  
 Sample Location: MA

Date Collected: 02/14/17 09:50  
 Date Received: 02/14/17  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics by 8260/5035 - Westborough Lab						
Diethyl ether	ND	ug/kg	3.7	--	--	1
Diisopropyl Ether	ND	ug/kg	3.0	--	--	1
Ethyl-Tert-Butyl-Ether	ND	ug/kg	3.0	--	--	1
Tertiary-Amyl Methyl Ether	ND	ug/kg	3.0	--	--	1
1,4-Dioxane	ND	ug/kg	30	--	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	110		70-130
Toluene-d8	108		70-130
4-Bromofluorobenzene	103		70-130
Dibromofluoromethane	106		70-130

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704637  
**Report Date:** 02/21/17

**SAMPLE RESULTS**

Lab ID: L1704637-04  
Client ID: VES-110 (2-4)  
Sample Location: MA  
Matrix: Soil  
Analytical Method: 97,8260C  
Analytical Date: 02/19/17 14:31  
Analyst: JC  
Percent Solids: 80%

Date Collected: 02/14/17 09:50  
Date Received: 02/14/17  
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics by 5035 High - Westborough Lab</b>						
Methylene chloride	ND	ug/kg	570	--	--	1
1,1-Dichloroethane	ND	ug/kg	85	--	--	1
Chloroform	ND	ug/kg	85	--	--	1
Carbon tetrachloride	ND	ug/kg	57	--	--	1
1,2-Dichloropropane	ND	ug/kg	200	--	--	1
Dibromochloromethane	ND	ug/kg	57	--	--	1
1,1,2-Trichloroethane	ND	ug/kg	85	--	--	1
Tetrachloroethene	ND	ug/kg	57	--	--	1
Chlorobenzene	ND	ug/kg	57	--	--	1
Trichlorofluoromethane	ND	ug/kg	230	--	--	1
1,2-Dichloroethane	ND	ug/kg	57	--	--	1
1,1,1-Trichloroethane	ND	ug/kg	57	--	--	1
Bromodichloromethane	ND	ug/kg	57	--	--	1
trans-1,3-Dichloropropene	ND	ug/kg	57	--	--	1
cis-1,3-Dichloropropene	ND	ug/kg	57	--	--	1
1,3-Dichloropropene, Total	ND	ug/kg	57	--	--	1
1,1-Dichloropropene	ND	ug/kg	230	--	--	1
Bromoform	ND	ug/kg	230	--	--	1
1,1,2,2-Tetrachloroethane	ND	ug/kg	57	--	--	1
Benzene	ND	ug/kg	57	--	--	1
Toluene	ND	ug/kg	85	--	--	1
Ethylbenzene	ND	ug/kg	57	--	--	1
Chloromethane	ND	ug/kg	230	--	--	1
Bromomethane	ND	ug/kg	110	--	--	1
Vinyl chloride	ND	ug/kg	110	--	--	1
Chloroethane	ND	ug/kg	110	--	--	1
1,1-Dichloroethene	ND	ug/kg	57	--	--	1
trans-1,2-Dichloroethene	ND	ug/kg	85	--	--	1
Trichloroethene	ND	ug/kg	57	--	--	1
1,2-Dichlorobenzene	ND	ug/kg	230	--	--	1



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704637  
**Report Date:** 02/21/17

**SAMPLE RESULTS**

Lab ID:	L1704637-04	Date Collected:	02/14/17 09:50			
Client ID:	VES-110 (2-4)	Date Received:	02/14/17			
Sample Location:	MA	Field Prep:	Not Specified			
Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics by 5035 High - Westborough Lab</b>						
1,3-Dichlorobenzene	ND	ug/kg	230	--	1	
1,4-Dichlorobenzene	ND	ug/kg	230	--	1	
Methyl tert butyl ether	ND	ug/kg	110	--	1	
p/m-Xylene	ND	ug/kg	110	--	1	
o-Xylene	ND	ug/kg	110	--	1	
Xylenes, Total	ND	ug/kg	110	--	1	
cis-1,2-Dichloroethene	ND	ug/kg	57	--	1	
1,2-Dichloroethene, Total	ND	ug/kg	57	--	1	
Dibromomethane	ND	ug/kg	230	--	1	
1,2,3-Trichloropropane	ND	ug/kg	230	--	1	
Styrene	ND	ug/kg	110	--	1	
Dichlorodifluoromethane	ND	ug/kg	570	--	1	
Acetone	ND	ug/kg	2000	--	1	
Carbon disulfide	ND	ug/kg	230	--	1	
Methyl ethyl ketone	ND	ug/kg	570	--	1	
Methyl isobutyl ketone	ND	ug/kg	570	--	1	
2-Hexanone	ND	ug/kg	570	--	1	
Bromochloromethane	ND	ug/kg	230	--	1	
Tetrahydrofuran	ND	ug/kg	230	--	1	
2,2-Dichloropropane	ND	ug/kg	280	--	1	
1,2-Dibromoethane	ND	ug/kg	230	--	1	
1,3-Dichloropropane	ND	ug/kg	230	--	1	
1,1,1,2-Tetrachloroethane	ND	ug/kg	57	--	1	
Bromobenzene	ND	ug/kg	280	--	1	
n-Butylbenzene	ND	ug/kg	57	--	1	
sec-Butylbenzene	ND	ug/kg	57	--	1	
tert-Butylbenzene	ND	ug/kg	230	--	1	
o-Chlorotoluene	ND	ug/kg	230	--	1	
p-Chlorotoluene	ND	ug/kg	230	--	1	
1,2-Dibromo-3-chloropropane	ND	ug/kg	230	--	1	
Hexachlorobutadiene	ND	ug/kg	230	--	1	
Isopropylbenzene	ND	ug/kg	57	--	1	
p-Isopropyltoluene	ND	ug/kg	57	--	1	
Naphthalene	ND	ug/kg	230	--	1	
n-Propylbenzene	ND	ug/kg	57	--	1	
1,2,3-Trichlorobenzene	ND	ug/kg	230	--	1	
1,2,4-Trichlorobenzene	ND	ug/kg	230	--	1	
1,3,5-Trimethylbenzene	ND	ug/kg	230	--	1	
1,2,4-Trimethylbenzene	ND	ug/kg	230	--	1	



Project Name: EAST BOSTON

Lab Number: L1704637

Project Number: 43068

Report Date: 02/21/17

**SAMPLE RESULTS**

Lab ID: L1704637-04  
 Client ID: VES-110 (2-4)  
 Sample Location: MA

Date Collected: 02/14/17 09:50  
 Date Received: 02/14/17  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics by 5035 High - Westborough Lab						
Diethyl ether	ND	ug/kg	280	--	--	1
Diisopropyl Ether	ND	ug/kg	230	--	--	1
Ethyl-Tert-Butyl-Ether	ND	ug/kg	230	--	--	1
Tertiary-Amyl Methyl Ether	ND	ug/kg	230	--	--	1
1,4-Dioxane	ND	ug/kg	5700	--	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	105		70-130
Toluene-d8	108		70-130
4-Bromofluorobenzene	105		70-130
Dibromofluoromethane	97		70-130

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704637  
**Report Date:** 02/21/17

**SAMPLE RESULTS**

Lab ID: L1704637-05  
Client ID: VES-110 (12-14)  
Sample Location: MA  
Matrix: Soil  
Analytical Method: 97,8260C  
Analytical Date: 02/17/17 15:04  
Analyst: JC  
Percent Solids: 74%

Date Collected: 02/14/17 09:55  
Date Received: 02/14/17  
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics by 8260/5035 - Westborough Lab</b>						
Methylene chloride	ND	ug/kg	7.9	--	--	1
1,1-Dichloroethane	ND	ug/kg	1.2	--	--	1
Chloroform	ND	ug/kg	1.2	--	--	1
Carbon tetrachloride	ND	ug/kg	0.79	--	--	1
1,2-Dichloropropane	ND	ug/kg	2.8	--	--	1
Dibromochloromethane	ND	ug/kg	0.79	--	--	1
1,1,2-Trichloroethane	ND	ug/kg	1.2	--	--	1
Tetrachloroethene	ND	ug/kg	0.79	--	--	1
Chlorobenzene	ND	ug/kg	0.79	--	--	1
Trichlorofluoromethane	ND	ug/kg	3.2	--	--	1
1,2-Dichloroethane	ND	ug/kg	0.79	--	--	1
1,1,1-Trichloroethane	ND	ug/kg	0.79	--	--	1
Bromodichloromethane	ND	ug/kg	0.79	--	--	1
trans-1,3-Dichloropropene	ND	ug/kg	0.79	--	--	1
cis-1,3-Dichloropropene	ND	ug/kg	0.79	--	--	1
1,3-Dichloropropene, Total	ND	ug/kg	0.79	--	--	1
1,1-Dichloropropene	ND	ug/kg	3.2	--	--	1
Bromoform	ND	ug/kg	3.2	--	--	1
1,1,2,2-Tetrachloroethane	ND	ug/kg	0.79	--	--	1
Benzene	ND	ug/kg	0.79	--	--	1
Toluene	ND	ug/kg	1.2	--	--	1
Ethylbenzene	ND	ug/kg	0.79	--	--	1
Chloromethane	ND	ug/kg	3.2	--	--	1
Bromomethane	ND	ug/kg	1.6	--	--	1
Vinyl chloride	ND	ug/kg	1.6	--	--	1
Chloroethane	ND	ug/kg	1.6	--	--	1
1,1-Dichloroethene	ND	ug/kg	0.79	--	--	1
trans-1,2-Dichloroethene	ND	ug/kg	1.2	--	--	1
Trichloroethene	ND	ug/kg	0.79	--	--	1
1,2-Dichlorobenzene	ND	ug/kg	3.2	--	--	1



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704637  
**Report Date:** 02/21/17

**SAMPLE RESULTS**

Lab ID:	L1704637-05	Date Collected:	02/14/17 09:55			
Client ID:	VES-110 (12-14)	Date Received:	02/14/17			
Sample Location:	MA	Field Prep:	Not Specified			
Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics by 8260/5035 - Westborough Lab</b>						
1,3-Dichlorobenzene	ND	ug/kg	3.2	--	1	
1,4-Dichlorobenzene	ND	ug/kg	3.2	--	1	
Methyl tert butyl ether	ND	ug/kg	1.6	--	1	
p/m-Xylene	ND	ug/kg	1.6	--	1	
o-Xylene	ND	ug/kg	1.6	--	1	
Xylenes, Total	ND	ug/kg	1.6	--	1	
cis-1,2-Dichloroethene	ND	ug/kg	0.79	--	1	
1,2-Dichloroethene, Total	ND	ug/kg	0.79	--	1	
Dibromomethane	ND	ug/kg	3.2	--	1	
1,2,3-Trichloropropane	ND	ug/kg	3.2	--	1	
Styrene	ND	ug/kg	1.6	--	1	
Dichlorodifluoromethane	ND	ug/kg	7.9	--	1	
Acetone	ND	ug/kg	28	--	1	
Carbon disulfide	7.3	ug/kg	3.2	--	1	
Methyl ethyl ketone	ND	ug/kg	7.9	--	1	
Methyl isobutyl ketone	ND	ug/kg	7.9	--	1	
2-Hexanone	ND	ug/kg	7.9	--	1	
Bromochloromethane	ND	ug/kg	3.2	--	1	
Tetrahydrofuran	ND	ug/kg	3.2	--	1	
2,2-Dichloropropane	ND	ug/kg	4.0	--	1	
1,2-Dibromoethane	ND	ug/kg	3.2	--	1	
1,3-Dichloropropane	ND	ug/kg	3.2	--	1	
1,1,1,2-Tetrachloroethane	ND	ug/kg	0.79	--	1	
Bromobenzene	ND	ug/kg	4.0	--	1	
n-Butylbenzene	ND	ug/kg	0.79	--	1	
sec-Butylbenzene	ND	ug/kg	0.79	--	1	
tert-Butylbenzene	ND	ug/kg	3.2	--	1	
o-Chlorotoluene	ND	ug/kg	3.2	--	1	
p-Chlorotoluene	ND	ug/kg	3.2	--	1	
1,2-Dibromo-3-chloropropane	ND	ug/kg	3.2	--	1	
Hexachlorobutadiene	ND	ug/kg	3.2	--	1	
Isopropylbenzene	ND	ug/kg	0.79	--	1	
p-Isopropyltoluene	ND	ug/kg	0.79	--	1	
Naphthalene	ND	ug/kg	3.2	--	1	
n-Propylbenzene	ND	ug/kg	0.79	--	1	
1,2,3-Trichlorobenzene	ND	ug/kg	3.2	--	1	
1,2,4-Trichlorobenzene	ND	ug/kg	3.2	--	1	
1,3,5-Trimethylbenzene	ND	ug/kg	3.2	--	1	
1,2,4-Trimethylbenzene	ND	ug/kg	3.2	--	1	



Project Name: EAST BOSTON

Lab Number: L1704637

Project Number: 43068

Report Date: 02/21/17

**SAMPLE RESULTS**

Lab ID: L1704637-05  
 Client ID: VES-110 (12-14)  
 Sample Location: MA

Date Collected: 02/14/17 09:55  
 Date Received: 02/14/17  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics by 8260/5035 - Westborough Lab						
Diethyl ether	ND	ug/kg	4.0	--	--	1
Diisopropyl Ether	ND	ug/kg	3.2	--	--	1
Ethyl-Tert-Butyl-Ether	ND	ug/kg	3.2	--	--	1
Tertiary-Amyl Methyl Ether	ND	ug/kg	3.2	--	--	1
1,4-Dioxane	ND	ug/kg	32	--	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	117		70-130
Toluene-d8	119		70-130
4-Bromofluorobenzene	97		70-130
Dibromofluoromethane	115		70-130

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704637  
**Report Date:** 02/21/17

**SAMPLE RESULTS**

Lab ID: L1704637-07  
Client ID: VES-111 (2-4)  
Sample Location: MA  
Matrix: Soil  
Analytical Method: 97,8260C  
Analytical Date: 02/17/17 15:30  
Analyst: JC  
Percent Solids: 74%

Date Collected: 02/14/17 11:40  
Date Received: 02/14/17  
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics by 8260/5035 - Westborough Lab</b>						
Methylene chloride	ND	ug/kg	11	--	--	1
1,1-Dichloroethane	ND	ug/kg	1.7	--	--	1
Chloroform	ND	ug/kg	1.7	--	--	1
Carbon tetrachloride	ND	ug/kg	1.1	--	--	1
1,2-Dichloropropane	ND	ug/kg	3.9	--	--	1
Dibromochloromethane	ND	ug/kg	1.1	--	--	1
1,1,2-Trichloroethane	ND	ug/kg	1.7	--	--	1
Tetrachloroethene	ND	ug/kg	1.1	--	--	1
Chlorobenzene	ND	ug/kg	1.1	--	--	1
Trichlorofluoromethane	ND	ug/kg	4.5	--	--	1
1,2-Dichloroethane	ND	ug/kg	1.1	--	--	1
1,1,1-Trichloroethane	ND	ug/kg	1.1	--	--	1
Bromodichloromethane	ND	ug/kg	1.1	--	--	1
trans-1,3-Dichloropropene	ND	ug/kg	1.1	--	--	1
cis-1,3-Dichloropropene	ND	ug/kg	1.1	--	--	1
1,3-Dichloropropene, Total	ND	ug/kg	1.1	--	--	1
1,1-Dichloropropene	ND	ug/kg	4.5	--	--	1
Bromoform	ND	ug/kg	4.5	--	--	1
1,1,2,2-Tetrachloroethane	ND	ug/kg	1.1	--	--	1
Benzene	ND	ug/kg	1.1	--	--	1
Toluene	ND	ug/kg	1.7	--	--	1
Ethylbenzene	ND	ug/kg	1.1	--	--	1
Chloromethane	ND	ug/kg	4.5	--	--	1
Bromomethane	ND	ug/kg	2.2	--	--	1
Vinyl chloride	ND	ug/kg	2.2	--	--	1
Chloroethane	ND	ug/kg	2.2	--	--	1
1,1-Dichloroethene	ND	ug/kg	1.1	--	--	1
trans-1,2-Dichloroethene	ND	ug/kg	1.7	--	--	1
Trichloroethene	ND	ug/kg	1.1	--	--	1
1,2-Dichlorobenzene	ND	ug/kg	4.5	--	--	1



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704637  
**Report Date:** 02/21/17

**SAMPLE RESULTS**

Lab ID:	L1704637-07	Date Collected:	02/14/17 11:40			
Client ID:	VES-111 (2-4)	Date Received:	02/14/17			
Sample Location:	MA	Field Prep:	Not Specified			
Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics by 8260/5035 - Westborough Lab</b>						
1,3-Dichlorobenzene	ND	ug/kg	4.5	--	1	
1,4-Dichlorobenzene	ND	ug/kg	4.5	--	1	
Methyl tert butyl ether	ND	ug/kg	2.2	--	1	
p/m-Xylene	ND	ug/kg	2.2	--	1	
o-Xylene	ND	ug/kg	2.2	--	1	
Xylenes, Total	ND	ug/kg	2.2	--	1	
cis-1,2-Dichloroethene	ND	ug/kg	1.1	--	1	
1,2-Dichloroethene, Total	ND	ug/kg	1.1	--	1	
Dibromomethane	ND	ug/kg	4.5	--	1	
1,2,3-Trichloropropane	ND	ug/kg	4.5	--	1	
Styrene	ND	ug/kg	2.2	--	1	
Dichlorodifluoromethane	ND	ug/kg	11	--	1	
Acetone	ND	ug/kg	40	--	1	
Carbon disulfide	ND	ug/kg	4.5	--	1	
Methyl ethyl ketone	ND	ug/kg	11	--	1	
Methyl isobutyl ketone	ND	ug/kg	11	--	1	
2-Hexanone	ND	ug/kg	11	--	1	
Bromochloromethane	ND	ug/kg	4.5	--	1	
Tetrahydrofuran	ND	ug/kg	4.5	--	1	
2,2-Dichloropropane	ND	ug/kg	5.6	--	1	
1,2-Dibromoethane	ND	ug/kg	4.5	--	1	
1,3-Dichloropropane	ND	ug/kg	4.5	--	1	
1,1,1,2-Tetrachloroethane	ND	ug/kg	1.1	--	1	
Bromobenzene	ND	ug/kg	5.6	--	1	
n-Butylbenzene	ND	ug/kg	1.1	--	1	
sec-Butylbenzene	ND	ug/kg	1.1	--	1	
tert-Butylbenzene	ND	ug/kg	4.5	--	1	
o-Chlorotoluene	ND	ug/kg	4.5	--	1	
p-Chlorotoluene	ND	ug/kg	4.5	--	1	
1,2-Dibromo-3-chloropropane	ND	ug/kg	4.5	--	1	
Hexachlorobutadiene	ND	ug/kg	4.5	--	1	
Isopropylbenzene	ND	ug/kg	1.1	--	1	
p-Isopropyltoluene	ND	ug/kg	1.1	--	1	
Naphthalene	ND	ug/kg	4.5	--	1	
n-Propylbenzene	ND	ug/kg	1.1	--	1	
1,2,3-Trichlorobenzene	ND	ug/kg	4.5	--	1	
1,2,4-Trichlorobenzene	ND	ug/kg	4.5	--	1	
1,3,5-Trimethylbenzene	ND	ug/kg	4.5	--	1	
1,2,4-Trimethylbenzene	ND	ug/kg	4.5	--	1	



Project Name: EAST BOSTON

Lab Number: L1704637

Project Number: 43068

Report Date: 02/21/17

**SAMPLE RESULTS**

Lab ID: L1704637-07  
 Client ID: VES-111 (2-4)  
 Sample Location: MA

Date Collected: 02/14/17 11:40  
 Date Received: 02/14/17  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics by 8260/5035 - Westborough Lab						
Diethyl ether	ND	ug/kg	5.6	--	--	1
Diisopropyl Ether	ND	ug/kg	4.5	--	--	1
Ethyl-Tert-Butyl-Ether	ND	ug/kg	4.5	--	--	1
Tertiary-Amyl Methyl Ether	ND	ug/kg	4.5	--	--	1
1,4-Dioxane	ND	ug/kg	45	--	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	122		70-130
Toluene-d8	106		70-130
4-Bromofluorobenzene	92		70-130
Dibromofluoromethane	109		70-130

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704637  
**Report Date:** 02/21/17

**SAMPLE RESULTS**

Lab ID: L1704637-08  
Client ID: VES-125 (0-2)  
Sample Location: MA  
Matrix: Soil  
Analytical Method: 97,8260C  
Analytical Date: 02/17/17 15:56  
Analyst: JC  
Percent Solids: 87%

Date Collected: 02/14/17 14:35  
Date Received: 02/14/17  
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics by 8260/5035 - Westborough Lab</b>						
Methylene chloride	ND	ug/kg	8.3	--	--	1
1,1-Dichloroethane	ND	ug/kg	1.2	--	--	1
Chloroform	ND	ug/kg	1.2	--	--	1
Carbon tetrachloride	ND	ug/kg	0.83	--	--	1
1,2-Dichloropropane	ND	ug/kg	2.9	--	--	1
Dibromochloromethane	ND	ug/kg	0.83	--	--	1
1,1,2-Trichloroethane	ND	ug/kg	1.2	--	--	1
Tetrachloroethene	ND	ug/kg	0.83	--	--	1
Chlorobenzene	ND	ug/kg	0.83	--	--	1
Trichlorofluoromethane	ND	ug/kg	3.3	--	--	1
1,2-Dichloroethane	ND	ug/kg	0.83	--	--	1
1,1,1-Trichloroethane	0.88	ug/kg	0.83	--	--	1
Bromodichloromethane	ND	ug/kg	0.83	--	--	1
trans-1,3-Dichloropropene	ND	ug/kg	0.83	--	--	1
cis-1,3-Dichloropropene	ND	ug/kg	0.83	--	--	1
1,3-Dichloropropene, Total	ND	ug/kg	0.83	--	--	1
1,1-Dichloropropene	ND	ug/kg	3.3	--	--	1
Bromoform	ND	ug/kg	3.3	--	--	1
1,1,2,2-Tetrachloroethane	ND	ug/kg	0.83	--	--	1
Benzene	ND	ug/kg	0.83	--	--	1
Toluene	ND	ug/kg	1.2	--	--	1
Ethylbenzene	ND	ug/kg	0.83	--	--	1
Chloromethane	ND	ug/kg	3.3	--	--	1
Bromomethane	ND	ug/kg	1.7	--	--	1
Vinyl chloride	ND	ug/kg	1.7	--	--	1
Chloroethane	ND	ug/kg	1.7	--	--	1
1,1-Dichloroethene	ND	ug/kg	0.83	--	--	1
trans-1,2-Dichloroethene	ND	ug/kg	1.2	--	--	1
Trichloroethene	ND	ug/kg	0.83	--	--	1
1,2-Dichlorobenzene	ND	ug/kg	3.3	--	--	1



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704637  
**Report Date:** 02/21/17

**SAMPLE RESULTS**

Lab ID:	L1704637-08	Date Collected:	02/14/17 14:35		
Client ID:	VES-125 (0-2)	Date Received:	02/14/17		
Sample Location:	MA	Field Prep:	Not Specified		
Parameter	Result	Qualifier	Units	RL	MDL
<b>MCP Volatile Organics by 8260/5035 - Westborough Lab</b>					
1,3-Dichlorobenzene	ND	ug/kg	3.3	--	1
1,4-Dichlorobenzene	ND	ug/kg	3.3	--	1
Methyl tert butyl ether	ND	ug/kg	1.7	--	1
p/m-Xylene	ND	ug/kg	1.7	--	1
o-Xylene	ND	ug/kg	1.7	--	1
Xylenes, Total	ND	ug/kg	1.7	--	1
cis-1,2-Dichloroethene	ND	ug/kg	0.83	--	1
1,2-Dichloroethene, Total	ND	ug/kg	0.83	--	1
Dibromomethane	ND	ug/kg	3.3	--	1
1,2,3-Trichloropropane	ND	ug/kg	3.3	--	1
Styrene	ND	ug/kg	1.7	--	1
Dichlorodifluoromethane	ND	ug/kg	8.3	--	1
Acetone	ND	ug/kg	30	--	1
Carbon disulfide	ND	ug/kg	3.3	--	1
Methyl ethyl ketone	ND	ug/kg	8.3	--	1
Methyl isobutyl ketone	ND	ug/kg	8.3	--	1
2-Hexanone	ND	ug/kg	8.3	--	1
Bromochloromethane	ND	ug/kg	3.3	--	1
Tetrahydrofuran	ND	ug/kg	3.3	--	1
2,2-Dichloropropane	ND	ug/kg	4.2	--	1
1,2-Dibromoethane	ND	ug/kg	3.3	--	1
1,3-Dichloropropane	ND	ug/kg	3.3	--	1
1,1,1,2-Tetrachloroethane	ND	ug/kg	0.83	--	1
Bromobenzene	ND	ug/kg	4.2	--	1
n-Butylbenzene	ND	ug/kg	0.83	--	1
sec-Butylbenzene	ND	ug/kg	0.83	--	1
tert-Butylbenzene	ND	ug/kg	3.3	--	1
o-Chlorotoluene	ND	ug/kg	3.3	--	1
p-Chlorotoluene	ND	ug/kg	3.3	--	1
1,2-Dibromo-3-chloropropane	ND	ug/kg	3.3	--	1
Hexachlorobutadiene	ND	ug/kg	3.3	--	1
Isopropylbenzene	ND	ug/kg	0.83	--	1
p-Isopropyltoluene	ND	ug/kg	0.83	--	1
Naphthalene	ND	ug/kg	3.3	--	1
n-Propylbenzene	ND	ug/kg	0.83	--	1
1,2,3-Trichlorobenzene	ND	ug/kg	3.3	--	1
1,2,4-Trichlorobenzene	ND	ug/kg	3.3	--	1
1,3,5-Trimethylbenzene	ND	ug/kg	3.3	--	1
1,2,4-Trimethylbenzene	ND	ug/kg	3.3	--	1



Project Name: EAST BOSTON

Lab Number: L1704637

Project Number: 43068

Report Date: 02/21/17

**SAMPLE RESULTS**

Lab ID: L1704637-08  
 Client ID: VES-125 (0-2)  
 Sample Location: MA

Date Collected: 02/14/17 14:35  
 Date Received: 02/14/17  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics by 8260/5035 - Westborough Lab						
Diethyl ether	ND	ug/kg	4.2	--	--	1
Diisopropyl Ether	ND	ug/kg	3.3	--	--	1
Ethyl-Tert-Butyl-Ether	ND	ug/kg	3.3	--	--	1
Tertiary-Amyl Methyl Ether	ND	ug/kg	3.3	--	--	1
1,4-Dioxane	ND	ug/kg	33	--	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	125		70-130
Toluene-d8	103		70-130
4-Bromofluorobenzene	88		70-130
Dibromofluoromethane	123		70-130

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704637  
**Report Date:** 02/21/17

### Method Blank Analysis Batch Quality Control

Analytical Method: 97,8260C  
Analytical Date: 02/17/17 10:44  
Analyst: JC

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics by 8260/5035 - Westborough Lab for sample(s): WG978923-5				01-02,04-05,07-08	Batch:
Methylene chloride	ND		ug/kg	10	--
1,1-Dichloroethane	ND		ug/kg	1.5	--
Chloroform	ND		ug/kg	1.5	--
Carbon tetrachloride	ND		ug/kg	1.0	--
1,2-Dichloropropane	ND		ug/kg	3.5	--
Dibromochloromethane	ND		ug/kg	1.0	--
1,1,2-Trichloroethane	ND		ug/kg	1.5	--
Tetrachloroethene	ND		ug/kg	1.0	--
Chlorobenzene	ND		ug/kg	1.0	--
Trichlorofluoromethane	ND		ug/kg	4.0	--
1,2-Dichloroethane	ND		ug/kg	1.0	--
1,1,1-Trichloroethane	ND		ug/kg	1.0	--
Bromodichloromethane	ND		ug/kg	1.0	--
trans-1,3-Dichloropropene	ND		ug/kg	1.0	--
cis-1,3-Dichloropropene	ND		ug/kg	1.0	--
1,3-Dichloropropene, Total	ND		ug/kg	1.0	--
1,1-Dichloropropene	ND		ug/kg	4.0	--
Bromoform	ND		ug/kg	4.0	--
1,1,2,2-Tetrachloroethane	ND		ug/kg	1.0	--
Benzene	ND		ug/kg	1.0	--
Toluene	ND		ug/kg	1.5	--
Ethylbenzene	ND		ug/kg	1.0	--
Chloromethane	ND		ug/kg	4.0	--
Bromomethane	ND		ug/kg	2.0	--
Vinyl chloride	ND		ug/kg	2.0	--
Chloroethane	ND		ug/kg	2.0	--
1,1-Dichloroethene	ND		ug/kg	1.0	--
trans-1,2-Dichloroethene	ND		ug/kg	1.5	--
Trichloroethene	ND		ug/kg	1.0	--



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704637  
**Report Date:** 02/21/17

### Method Blank Analysis Batch Quality Control

Analytical Method: 97,8260C  
Analytical Date: 02/17/17 10:44  
Analyst: JC

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics by 8260/5035 - Westborough Lab for sample(s): WG978923-5				01-02,04-05,07-08	Batch:
1,2-Dichlorobenzene	ND		ug/kg	4.0	--
1,3-Dichlorobenzene	ND		ug/kg	4.0	--
1,4-Dichlorobenzene	ND		ug/kg	4.0	--
Methyl tert butyl ether	ND		ug/kg	2.0	--
p/m-Xylene	ND		ug/kg	2.0	--
o-Xylene	ND		ug/kg	2.0	--
Xylenes, Total	ND		ug/kg	2.0	--
cis-1,2-Dichloroethene	ND		ug/kg	1.0	--
1,2-Dichloroethene, Total	ND		ug/kg	1.0	--
Dibromomethane	ND		ug/kg	4.0	--
1,4-Dichlorobutane	ND		ug/kg	10	--
1,2,3-Trichloropropane	ND		ug/kg	4.0	--
Styrene	ND		ug/kg	2.0	--
Dichlorodifluoromethane	ND		ug/kg	10	--
Acetone	ND		ug/kg	36	--
Carbon disulfide	ND		ug/kg	4.0	--
Methyl ethyl ketone	ND		ug/kg	10	--
Methyl isobutyl ketone	ND		ug/kg	10	--
2-Hexanone	ND		ug/kg	10	--
Ethyl methacrylate	ND		ug/kg	10	--
Acrylonitrile	ND		ug/kg	4.0	--
Bromochloromethane	ND		ug/kg	4.0	--
Tetrahydrofuran	ND		ug/kg	4.0	--
2,2-Dichloropropane	ND		ug/kg	5.0	--
1,2-Dibromoethane	ND		ug/kg	4.0	--
1,3-Dichloropropane	ND		ug/kg	4.0	--
1,1,1,2-Tetrachloroethane	ND		ug/kg	1.0	--
Bromobenzene	ND		ug/kg	5.0	--
n-Butylbenzene	ND		ug/kg	1.0	--



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704637  
**Report Date:** 02/21/17

### Method Blank Analysis Batch Quality Control

Analytical Method: 97,8260C  
Analytical Date: 02/17/17 10:44  
Analyst: JC

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics by 8260/5035 - Westborough Lab for sample(s): WG978923-5				01-02,04-05,07-08	Batch:
sec-Butylbenzene	ND		ug/kg	1.0	--
tert-Butylbenzene	ND		ug/kg	4.0	--
o-Chlorotoluene	ND		ug/kg	4.0	--
p-Chlorotoluene	ND		ug/kg	4.0	--
1,2-Dibromo-3-chloropropane	ND		ug/kg	4.0	--
Hexachlorobutadiene	ND		ug/kg	4.0	--
Isopropylbenzene	ND		ug/kg	1.0	--
p-Isopropyltoluene	ND		ug/kg	1.0	--
Naphthalene	ND		ug/kg	4.0	--
n-Propylbenzene	ND		ug/kg	1.0	--
1,2,3-Trichlorobenzene	ND		ug/kg	4.0	--
1,2,4-Trichlorobenzene	ND		ug/kg	4.0	--
1,3,5-Trimethylbenzene	ND		ug/kg	4.0	--
1,2,4-Trimethylbenzene	ND		ug/kg	4.0	--
trans-1,4-Dichloro-2-butene	ND		ug/kg	5.0	--
Diethyl ether	ND		ug/kg	5.0	--
Diisopropyl Ether	ND		ug/kg	4.0	--
Ethyl-Tert-Butyl-Ether	ND		ug/kg	4.0	--
Tertiary-Amyl Methyl Ether	ND		ug/kg	4.0	--
1,4-Dioxane	ND		ug/kg	40	--
2-Chloroethylvinyl ether	ND		ug/kg	20	--
Halothane	ND		ug/kg	40	--
Ethyl Acetate	ND		ug/kg	20	--
Freon-113	ND		ug/kg	20	--
Vinyl acetate	ND		ug/kg	10	--



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704637  
**Report Date:** 02/21/17

**Method Blank Analysis**  
**Batch Quality Control**

Analytical Method: 97,8260C  
Analytical Date: 02/17/17 10:44  
Analyst: JC

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics by 8260/5035 - Westborough Lab for sample(s): 01-02,04-05,07-08 Batch: WG978923-5					

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	114		70-130
Toluene-d8	121		70-130
4-Bromofluorobenzene	96		70-130
Dibromofluoromethane	109		70-130

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704637  
**Report Date:** 02/21/17

### Method Blank Analysis Batch Quality Control

Analytical Method: 97,8260C  
Analytical Date: 02/19/17 11:04  
Analyst: BN

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics by 5035 High - Westborough Lab for sample(s):	04			Batch:	WG979244-5
Methylene chloride	ND		ug/kg	500	--
1,1-Dichloroethane	ND		ug/kg	75	--
Chloroform	ND		ug/kg	75	--
Carbon tetrachloride	ND		ug/kg	50	--
1,2-Dichloropropane	ND		ug/kg	180	--
Dibromochloromethane	ND		ug/kg	50	--
1,1,2-Trichloroethane	ND		ug/kg	75	--
Tetrachloroethene	ND		ug/kg	50	--
Chlorobenzene	ND		ug/kg	50	--
Trichlorofluoromethane	ND		ug/kg	200	--
1,2-Dichloroethane	ND		ug/kg	50	--
1,1,1-Trichloroethane	ND		ug/kg	50	--
Bromodichloromethane	ND		ug/kg	50	--
trans-1,3-Dichloropropene	ND		ug/kg	50	--
cis-1,3-Dichloropropene	ND		ug/kg	50	--
1,3-Dichloropropene, Total	ND		ug/kg	50	--
1,1-Dichloropropene	ND		ug/kg	200	--
Bromoform	ND		ug/kg	200	--
1,1,2,2-Tetrachloroethane	ND		ug/kg	50	--
Benzene	ND		ug/kg	50	--
Toluene	ND		ug/kg	75	--
Ethylbenzene	ND		ug/kg	50	--
Chloromethane	ND		ug/kg	200	--
Bromomethane	ND		ug/kg	100	--
Vinyl chloride	ND		ug/kg	100	--
Chloroethane	ND		ug/kg	100	--
1,1-Dichloroethene	ND		ug/kg	50	--
trans-1,2-Dichloroethene	ND		ug/kg	75	--
Trichloroethene	ND		ug/kg	50	--



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704637  
**Report Date:** 02/21/17

### Method Blank Analysis Batch Quality Control

Analytical Method: 97,8260C  
Analytical Date: 02/19/17 11:04  
Analyst: BN

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics by 5035 High - Westborough Lab for sample(s):	04			Batch:	WG979244-5
1,2-Dichlorobenzene	ND		ug/kg	200	--
1,3-Dichlorobenzene	ND		ug/kg	200	--
1,4-Dichlorobenzene	ND		ug/kg	200	--
Methyl tert butyl ether	ND		ug/kg	100	--
p/m-Xylene	ND		ug/kg	100	--
o-Xylene	ND		ug/kg	100	--
Xylenes, Total	ND		ug/kg	100	--
cis-1,2-Dichloroethene	ND		ug/kg	50	--
1,2-Dichloroethene, Total	ND		ug/kg	50	--
Dibromomethane	ND		ug/kg	200	--
1,2,3-Trichloropropane	ND		ug/kg	200	--
Styrene	ND		ug/kg	100	--
Dichlorodifluoromethane	ND		ug/kg	500	--
Acetone	ND		ug/kg	1800	--
Carbon disulfide	ND		ug/kg	200	--
Methyl ethyl ketone	ND		ug/kg	500	--
Methyl isobutyl ketone	ND		ug/kg	500	--
2-Hexanone	ND		ug/kg	500	--
Bromochloromethane	ND		ug/kg	200	--
Tetrahydrofuran	ND		ug/kg	200	--
2,2-Dichloropropane	ND		ug/kg	250	--
1,2-Dibromoethane	ND		ug/kg	200	--
1,3-Dichloropropane	ND		ug/kg	200	--
1,1,1,2-Tetrachloroethane	ND		ug/kg	50	--
Bromobenzene	ND		ug/kg	250	--
n-Butylbenzene	ND		ug/kg	50	--
sec-Butylbenzene	ND		ug/kg	50	--
tert-Butylbenzene	ND		ug/kg	200	--
o-Chlorotoluene	ND		ug/kg	200	--



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704637  
**Report Date:** 02/21/17

### Method Blank Analysis Batch Quality Control

Analytical Method: 97,8260C  
Analytical Date: 02/19/17 11:04  
Analyst: BN

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics by 5035 High - Westborough Lab for sample(s):	04			Batch:	WG979244-5
p-Chlorotoluene	ND		ug/kg	200	--
1,2-Dibromo-3-chloropropane	ND		ug/kg	200	--
Hexachlorobutadiene	ND		ug/kg	200	--
Isopropylbenzene	ND		ug/kg	50	--
p-Isopropyltoluene	ND		ug/kg	50	--
Naphthalene	ND		ug/kg	200	--
n-Propylbenzene	ND		ug/kg	50	--
1,2,3-Trichlorobenzene	ND		ug/kg	200	--
1,2,4-Trichlorobenzene	ND		ug/kg	200	--
1,3,5-Trimethylbenzene	ND		ug/kg	200	--
1,2,4-Trimethylbenzene	ND		ug/kg	200	--
Diethyl ether	ND		ug/kg	250	--
Diisopropyl Ether	ND		ug/kg	200	--
Ethyl-Tert-Butyl-Ether	ND		ug/kg	200	--
Tertiary-Amyl Methyl Ether	ND		ug/kg	200	--
1,4-Dioxane	ND		ug/kg	5000	--
2-Chloroethylvinyl ether	ND		ug/kg	1000	--
Halothane	ND		ug/kg	2000	--
Ethyl Acetate	ND		ug/kg	1000	--
Freon-113	ND		ug/kg	1000	--
Vinyl acetate	ND		ug/kg	500	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	120		70-130
Toluene-d8	100		70-130
4-Bromofluorobenzene	102		70-130
Dibromofluoromethane	113		70-130



# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704637  
**Report Date:** 02/21/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics by 8260/5035 - Westborough Lab Associated sample(s): 01-02,04-05,07-08 Batch: WG978923-3 WG978923-4								
Methylene chloride	113		119		70-130	5		20
1,1-Dichloroethane	112		108		70-130	4		20
Chloroform	114		110		70-130	4		20
Carbon tetrachloride	118		106		70-130	11		20
1,2-Dichloropropane	110		108		70-130	2		20
Dibromochloromethane	101		101		70-130	0		20
1,1,2-Trichloroethane	118		117		70-130	1		20
Tetrachloroethene	107		101		70-130	6		20
Chlorobenzene	108		103		70-130	5		20
Trichlorofluoromethane	128		100		70-130	25	Q	20
1,2-Dichloroethane	115		109		70-130	5		20
1,1,1-Trichloroethane	116		106		70-130	9		20
Bromodichloromethane	114		109		70-130	4		20
trans-1,3-Dichloropropene	98		97		70-130	1		20
cis-1,3-Dichloropropene	107		92		70-130	15		20
1,1-Dichloropropene	109		102		70-130	7		20
Bromoform	89		96		70-130	8		20
1,1,2,2-Tetrachloroethane	112		118		70-130	5		20
Benzene	112		107		70-130	5		20
Toluene	111		106		70-130	5		20
Ethylbenzene	111		105		70-130	6		20

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704637  
**Report Date:** 02/21/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics by 8260/5035 - Westborough Lab Associated sample(s): 01-02,04-05,07-08 Batch: WG978923-3 WG978923-4								
Chloromethane	113		89		70-130	24	Q	20
Bromomethane	110		91		70-130	19		20
Vinyl chloride	112		86		70-130	26	Q	20
Chloroethane	121		95		70-130	24	Q	20
1,1-Dichloroethene	100		94		70-130	6		20
trans-1,2-Dichloroethene	102		101		70-130	1		20
Trichloroethene	114		106		70-130	7		20
1,2-Dichlorobenzene	104		94		70-130	10		20
1,3-Dichlorobenzene	104		101		70-130	3		20
1,4-Dichlorobenzene	104		99		70-130	5		20
Methyl tert butyl ether	101		101		70-130	0		20
p/m-Xylene	114		107		70-130	6		20
o-Xylene	100		96		70-130	4		20
cis-1,2-Dichloroethene	106		103		70-130	3		20
Dibromomethane	112		108		70-130	4		20
1,4-Dichlorobutane	111		117		70-130	5		20
1,2,3-Trichloropropane	110		114		70-130	4		20
Styrene	99		97		70-130	2		20
Dichlorodifluoromethane	107		83		70-130	25	Q	20
Acetone	101		107		70-130	6		20
Carbon disulfide	130		152	Q	70-130	16		20

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704637  
**Report Date:** 02/21/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics by 8260/5035 - Westborough Lab Associated sample(s): 01-02,04-05,07-08 Batch: WG978923-3 WG978923-4								
Methyl ethyl ketone	86		88		70-130	2		20
Methyl isobutyl ketone	82		88		70-130	7		20
2-Hexanone	70		72		70-130	3		20
Ethyl methacrylate	75		75		70-130	0		20
Acrylonitrile	86		103		70-130	18		20
Bromochloromethane	111		107		70-130	4		20
Tetrahydrofuran	105		106		70-130	1		20
2,2-Dichloropropane	116		106		70-130	9		20
1,2-Dibromoethane	103		103		70-130	0		20
1,3-Dichloropropane	112		111		70-130	1		20
1,1,1,2-Tetrachloroethane	114		109		70-130	4		20
Bromobenzene	98		105		70-130	7		20
n-Butylbenzene	116		107		70-130	8		20
sec-Butylbenzene	109		104		70-130	5		20
tert-Butylbenzene	104		101		70-130	3		20
o-Chlorotoluene	110		111		70-130	1		20
p-Chlorotoluene	109		111		70-130	2		20
1,2-Dibromo-3-chloropropane	96		101		70-130	5		20
Hexachlorobutadiene	101		102		70-130	1		20
Isopropylbenzene	94		97		70-130	3		20
p-Isopropyltoluene	98		88		70-130	11		20

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704637  
**Report Date:** 02/21/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics by 8260/5035 - Westborough Lab Associated sample(s): 01-02,04-05,07-08 Batch: WG978923-3 WG978923-4								
Naphthalene	80		86		70-130	7		20
n-Propylbenzene	109		110		70-130	1		20
1,2,3-Trichlorobenzene	103		107		70-130	4		20
1,2,4-Trichlorobenzene	94		100		70-130	6		20
1,3,5-Trimethylbenzene	111		111		70-130	0		20
1,2,4-Trimethylbenzene	101		100		70-130	1		20
trans-1,4-Dichloro-2-butene	98		100		70-130	2		20
Diethyl ether	89		80		70-130	11		20
Diisopropyl Ether	100		102		70-130	2		20
Ethyl-Tert-Butyl-Ether	100		100		70-130	0		20
Tertiary-Amyl Methyl Ether	90		92		70-130	2		20
1,4-Dioxane	95		98		70-130	3		20
2-Chloroethylvinyl ether	84		82		70-130	2		20
Halothane	113		107		70-130	5		20
Ethyl Acetate	86		94		70-130	9		20
Freon-113	110		101		70-130	9		20
Vinyl acetate	92		93		70-130	1		20

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704637  
**Report Date:** 02/21/17

<b>Parameter</b>	<i>LCS</i> <i>%Recovery</i>	<i>Qual</i>	<i>LCSD</i> <i>%Recovery</i>	<i>Qual</i>	<i>%Recovery</i> <i>Limits</i>	<i>RPD</i>	<i>Qual</i>	<i>RPD</i> <i>Limits</i>
	MCP Volatile Organics by 8260/5035 - Westborough Lab Associated sample(s): 01-02,04-05,07-08 Batch: WG978923-3 WG978923-4							
<b>Surrogate</b>	<i>LCS</i> <i>%Recovery</i>	<i>Qual</i>	<i>LCSD</i> <i>%Recovery</i>	<i>Qual</i>	<i>Acceptance</i> <i>Criteria</i>			
1,2-Dichloroethane-d4	111		105		70-130			
Toluene-d8	107		107		70-130			
4-Bromofluorobenzene	98		109		70-130			
Dibromofluoromethane	108		106		70-130			

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704637  
**Report Date:** 02/21/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics by 5035 High - Westborough Lab Associated sample(s): 04 Batch: WG979244-3 WG979244-4								
Methylene chloride	122		107		70-130	13		20
1,1-Dichloroethane	110		101		70-130	9		20
Chloroform	113		102		70-130	10		20
Carbon tetrachloride	109		91		70-130	18		20
1,2-Dichloropropane	109		104		70-130	5		20
Dibromochloromethane	104		95		70-130	9		20
1,1,2-Trichloroethane	119		112		70-130	6		20
Tetrachloroethene	100		86		70-130	15		20
Chlorobenzene	105		96		70-130	9		20
Trichlorofluoromethane	109		77		70-130	34	Q	20
1,2-Dichloroethane	118		103		70-130	14		20
1,1,1-Trichloroethane	110		94		70-130	16		20
Bromodichloromethane	113		106		70-130	6		20
trans-1,3-Dichloropropene	99		92		70-130	7		20
cis-1,3-Dichloropropene	95		88		70-130	8		20
1,1-Dichloropropene	104		86		70-130	19		20
Bromoform	89		86		70-130	3		20
1,1,2,2-Tetrachloroethane	113		106		70-130	6		20
Benzene	110		99		70-130	11		20
Toluene	106		96		70-130	10		20
Ethylbenzene	108		94		70-130	14		20

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704637  
**Report Date:** 02/21/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics by 5035 High - Westborough Lab Associated sample(s): 04 Batch: WG979244-3 WG979244-4								
Chloromethane	104		78		70-130	29	Q	20
Bromomethane	102		79		70-130	25	Q	20
Vinyl chloride	100		71		70-130	34	Q	20
Chloroethane	109		81		70-130	29	Q	20
1,1-Dichloroethene	97		78		70-130	22	Q	20
trans-1,2-Dichloroethene	102		90		70-130	13		20
Trichloroethene	106		94		70-130	12		20
1,2-Dichlorobenzene	102		97		70-130	5		20
1,3-Dichlorobenzene	101		96		70-130	5		20
1,4-Dichlorobenzene	101		94		70-130	7		20
Methyl tert butyl ether	107		101		70-130	6		20
p/m-Xylene	109		96		70-130	13		20
o-Xylene	98		87		70-130	12		20
cis-1,2-Dichloroethene	105		98		70-130	7		20
Dibromomethane	116		106		70-130	9		20
1,2,3-Trichloropropane	111		104		70-130	7		20
Styrene	98		90		70-130	9		20
Dichlorodifluoromethane	100		67	Q	70-130	40	Q	20
Acetone	122		103		70-130	17		20
Carbon disulfide	101		87		70-130	15		20
Methyl ethyl ketone	98		89		70-130	10		20

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704637  
**Report Date:** 02/21/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics by 5035 High - Westborough Lab Associated sample(s): 04 Batch: WG979244-3 WG979244-4								
Methyl isobutyl ketone	87		83		70-130	5		20
2-Hexanone	79		73		70-130	8		20
Bromochloromethane	114		105		70-130	8		20
Tetrahydrofuran	111		100		70-130	10		20
2,2-Dichloropropane	111		93		70-130	18		20
1,2-Dibromoethane	107		96		70-130	11		20
1,3-Dichloropropane	111		105		70-130	6		20
1,1,1,2-Tetrachloroethane	112		101		70-130	10		20
Bromobenzene	98		93		70-130	5		20
n-Butylbenzene	106		94		70-130	12		20
sec-Butylbenzene	99		89		70-130	11		20
tert-Butylbenzene	96		86		70-130	11		20
o-Chlorotoluene	104		98		70-130	6		20
p-Chlorotoluene	104		97		70-130	7		20
1,2-Dibromo-3-chloropropane	92		93		70-130	1		20
Hexachlorobutadiene	99		84		70-130	16		20
Isopropylbenzene	88		80		70-130	10		20
p-Isopropyltoluene	89		81		70-130	9		20
Naphthalene	90		77		70-130	16		20
n-Propylbenzene	101		91		70-130	10		20
1,2,3-Trichlorobenzene	114		96		70-130	17		20

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704637  
**Report Date:** 02/21/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics by 5035 High - Westborough Lab Associated sample(s): 04 Batch: WG979244-3 WG979244-4								
1,2,4-Trichlorobenzene	99		88		70-130	12		20
1,3,5-Trimethylbenzene	104		96		70-130	8		20
1,2,4-Trimethylbenzene	96		90		70-130	6		20
Diethyl ether	115		83		70-130	32	Q	20
Diisopropyl Ether	103		97		70-130	6		20
Ethyl-Tert-Butyl-Ether	105		100		70-130	5		20
Tertiary-Amyl Methyl Ether	95		90		70-130	5		20
1,4-Dioxane	104		97		70-130	7		20
2-Chloroethylvinyl ether	72		70		70-130	3		20
Halothane	107		92		70-130	15		20
Ethyl Acetate	99		89		70-130	11		20
Freon-113	101		79		70-130	24	Q	20
Vinyl acetate	99		92		70-130	7		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	111		102		70-130
Toluene-d8	104		103		70-130
4-Bromofluorobenzene	100		101		70-130
Dibromofluoromethane	108		106		70-130

# **SEMIVOLATILES**



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704637  
**Report Date:** 02/21/17

**SAMPLE RESULTS**

Lab ID: L1704637-01  
Client ID: VES-104 (2-4)  
Sample Location: MA  
Matrix: Soil  
Analytical Method: 97,8270D  
Analytical Date: 02/18/17 00:36  
Analyst: SZ  
Percent Solids: 83%

Date Collected: 02/14/17 09:00  
Date Received: 02/14/17  
Field Prep: Not Specified  
Extraction Method: EPA 3546  
Extraction Date: 02/16/17 07:49

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Semivolatile Organics - Westborough Lab</b>						
Acenaphthene	200	ug/kg	160	--	--	1
1,2,4-Trichlorobenzene	ND	ug/kg	200	--	--	1
Hexachlorobenzene	ND	ug/kg	120	--	--	1
Bis(2-chloroethyl)ether	ND	ug/kg	180	--	--	1
2-Chloronaphthalene	ND	ug/kg	200	--	--	1
1,2-Dichlorobenzene	ND	ug/kg	200	--	--	1
1,3-Dichlorobenzene	ND	ug/kg	200	--	--	1
1,4-Dichlorobenzene	ND	ug/kg	200	--	--	1
3,3'-Dichlorobenzidine	ND	ug/kg	200	--	--	1
2,4-Dinitrotoluene	ND	ug/kg	200	--	--	1
2,6-Dinitrotoluene	ND	ug/kg	200	--	--	1
Azobenzene	ND	ug/kg	200	--	--	1
Fluoranthene	5500	ug/kg	120	--	--	1
4-Bromophenyl phenyl ether	ND	ug/kg	200	--	--	1
Bis(2-chloroisopropyl)ether	ND	ug/kg	240	--	--	1
Bis(2-chloroethoxy)methane	ND	ug/kg	220	--	--	1
Hexachlorobutadiene	ND	ug/kg	200	--	--	1
Hexachloroethane	ND	ug/kg	160	--	--	1
Isophorone	ND	ug/kg	180	--	--	1
Naphthalene	240	ug/kg	200	--	--	1
Nitrobenzene	ND	ug/kg	180	--	--	1
Bis(2-ethylhexyl)phthalate	ND	ug/kg	200	--	--	1
Butyl benzyl phthalate	ND	ug/kg	200	--	--	1
Di-n-butylphthalate	ND	ug/kg	200	--	--	1
Di-n-octylphthalate	ND	ug/kg	200	--	--	1
Diethyl phthalate	ND	ug/kg	200	--	--	1
Dimethyl phthalate	ND	ug/kg	200	--	--	1
Benzo(a)anthracene	2600	ug/kg	120	--	--	1
Benzo(a)pyrene	2200	ug/kg	160	--	--	1
Benzo(b)fluoranthene	3000	ug/kg	120	--	--	1



Project Name: EAST BOSTON

Lab Number: L1704637

Project Number: 43068

Report Date: 02/21/17

**SAMPLE RESULTS**

Lab ID:	L1704637-01	Date Collected:	02/14/17 09:00
Client ID:	VES-104 (2-4)	Date Received:	02/14/17
Sample Location:	MA	Field Prep:	Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Semivolatile Organics - Westborough Lab</b>						
Benzo(k)fluoranthene	1000	ug/kg	120	--	--	1
Chrysene	2600	ug/kg	120	--	--	1
Acenaphthylene	ND	ug/kg	160	--	--	1
Anthracene	590	ug/kg	120	--	--	1
Benzo(ghi)perylene	1400	ug/kg	160	--	--	1
Fluorene	310	ug/kg	200	--	--	1
Phenanthrene	3500	ug/kg	120	--	--	1
Dibenzo(a,h)anthracene	340	ug/kg	120	--	--	1
Indeno(1,2,3-cd)pyrene	1500	ug/kg	160	--	--	1
Pyrene	4800	ug/kg	120	--	--	1
Aniline	ND	ug/kg	240	--	--	1
4-Chloroaniline	ND	ug/kg	200	--	--	1
Dibenzofuran	ND	ug/kg	200	--	--	1
2-Methylnaphthalene	ND	ug/kg	240	--	--	1
Acetophenone	ND	ug/kg	200	--	--	1
2,4,6-Trichlorophenol	ND	ug/kg	120	--	--	1
2-Chlorophenol	ND	ug/kg	200	--	--	1
2,4-Dichlorophenol	ND	ug/kg	180	--	--	1
2,4-Dimethylphenol	ND	ug/kg	200	--	--	1
2-Nitrophenol	ND	ug/kg	440	--	--	1
4-Nitrophenol	ND	ug/kg	280	--	--	1
2,4-Dinitrophenol	ND	ug/kg	970	--	--	1
Pentachlorophenol	ND	ug/kg	400	--	--	1
Phenol	ND	ug/kg	200	--	--	1
2-Methylphenol	ND	ug/kg	200	--	--	1
3-Methylphenol/4-Methylphenol	ND	ug/kg	290	--	--	1
2,4,5-Trichlorophenol	ND	ug/kg	200	--	--	1
Pyridine	ND	ug/kg	220	--	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	71		30-130
Phenol-d6	71		30-130
Nitrobenzene-d5	86		30-130
2-Fluorobiphenyl	67		30-130
2,4,6-Tribromophenol	73		30-130
4-Terphenyl-d14	59		30-130

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704637  
**Report Date:** 02/21/17

**SAMPLE RESULTS**

Lab ID: L1704637-02  
Client ID: VES-106 (5-7)  
Sample Location: MA  
Matrix: Soil  
Analytical Method: 97,8270D  
Analytical Date: 02/18/17 01:03  
Analyst: SZ  
Percent Solids: 69%

Date Collected: 02/14/17 11:30  
Date Received: 02/14/17  
Field Prep: Not Specified  
Extraction Method: EPA 3546  
Extraction Date: 02/16/17 07:49

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Semivolatile Organics - Westborough Lab</b>						
Acenaphthene	ND	ug/kg	380	--	--	1
1,2,4-Trichlorobenzene	ND	ug/kg	480	--	--	1
Hexachlorobenzene	ND	ug/kg	290	--	--	1
Bis(2-chloroethyl)ether	ND	ug/kg	430	--	--	1
2-Chloronaphthalene	ND	ug/kg	480	--	--	1
1,2-Dichlorobenzene	ND	ug/kg	480	--	--	1
1,3-Dichlorobenzene	ND	ug/kg	480	--	--	1
1,4-Dichlorobenzene	ND	ug/kg	480	--	--	1
3,3'-Dichlorobenzidine	ND	ug/kg	480	--	--	1
2,4-Dinitrotoluene	ND	ug/kg	480	--	--	1
2,6-Dinitrotoluene	ND	ug/kg	480	--	--	1
Azobenzene	ND	ug/kg	480	--	--	1
Fluoranthene	930	ug/kg	290	--	--	1
4-Bromophenyl phenyl ether	ND	ug/kg	480	--	--	1
Bis(2-chloroisopropyl)ether	ND	ug/kg	580	--	--	1
Bis(2-chloroethoxy)methane	ND	ug/kg	520	--	--	1
Hexachlorobutadiene	ND	ug/kg	480	--	--	1
Hexachloroethane	ND	ug/kg	380	--	--	1
Isophorone	ND	ug/kg	430	--	--	1
Naphthalene	ND	ug/kg	480	--	--	1
Nitrobenzene	ND	ug/kg	430	--	--	1
Bis(2-ethylhexyl)phthalate	ND	ug/kg	480	--	--	1
Butyl benzyl phthalate	ND	ug/kg	480	--	--	1
Di-n-butylphthalate	ND	ug/kg	480	--	--	1
Di-n-octylphthalate	ND	ug/kg	480	--	--	1
Diethyl phthalate	ND	ug/kg	480	--	--	1
Dimethyl phthalate	ND	ug/kg	480	--	--	1
Benzo(a)anthracene	570	ug/kg	290	--	--	1
Benzo(a)pyrene	560	ug/kg	380	--	--	1
Benzo(b)fluoranthene	740	ug/kg	290	--	--	1



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704637  
**Report Date:** 02/21/17

**SAMPLE RESULTS**

Lab ID:	L1704637-02	Date Collected:	02/14/17 11:30			
Client ID:	VES-106 (5-7)	Date Received:	02/14/17			
Sample Location:	MA	Field Prep:	Not Specified			
Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Semivolatile Organics - Westborough Lab</b>						
Benzo(k)fluoranthene	ND	ug/kg	290	--	1	
Chrysene	590	ug/kg	290	--	1	
Acenaphthylene	ND	ug/kg	380	--	1	
Anthracene	ND	ug/kg	290	--	1	
Benzo(ghi)perylene	ND	ug/kg	380	--	1	
Fluorene	ND	ug/kg	480	--	1	
Phenanthrene	520	ug/kg	290	--	1	
Dibenzo(a,h)anthracene	ND	ug/kg	290	--	1	
Indeno(1,2,3-cd)pyrene	ND	ug/kg	380	--	1	
Pyrene	840	ug/kg	290	--	1	
Aniline	ND	ug/kg	580	--	1	
4-Chloroaniline	ND	ug/kg	480	--	1	
Dibenzofuran	ND	ug/kg	480	--	1	
2-Methylnaphthalene	ND	ug/kg	580	--	1	
Acetophenone	ND	ug/kg	480	--	1	
2,4,6-Trichlorophenol	ND	ug/kg	290	--	1	
2-Chlorophenol	ND	ug/kg	480	--	1	
2,4-Dichlorophenol	ND	ug/kg	430	--	1	
2,4-Dimethylphenol	ND	ug/kg	480	--	1	
2-Nitrophenol	ND	ug/kg	1000	--	1	
4-Nitrophenol	ND	ug/kg	680	--	1	
2,4-Dinitrophenol	ND	ug/kg	2300	--	1	
Pentachlorophenol	ND	ug/kg	960	--	1	
Phenol	ND	ug/kg	480	--	1	
2-Methylphenol	ND	ug/kg	480	--	1	
3-Methylphenol/4-Methylphenol	ND	ug/kg	690	--	1	
2,4,5-Trichlorophenol	ND	ug/kg	480	--	1	
Pyridine	ND	ug/kg	520	--	1	

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	59		30-130
Phenol-d6	66		30-130
Nitrobenzene-d5	73		30-130
2-Fluorobiphenyl	46		30-130
2,4,6-Tribromophenol	42		30-130
4-Terphenyl-d14	40		30-130

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704637  
**Report Date:** 02/21/17

**SAMPLE RESULTS**

Lab ID: L1704637-04  
Client ID: VES-110 (2-4)  
Sample Location: MA  
Matrix: Soil  
Analytical Method: 97,8270D  
Analytical Date: 02/18/17 01:29  
Analyst: SZ  
Percent Solids: 80%

Date Collected: 02/14/17 09:50  
Date Received: 02/14/17  
Field Prep: Not Specified  
Extraction Method: EPA 3546  
Extraction Date: 02/16/17 07:49

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Semivolatile Organics - Westborough Lab</b>						
Acenaphthene	ND	ug/kg	160	--	--	1
1,2,4-Trichlorobenzene	ND	ug/kg	210	--	--	1
Hexachlorobenzene	ND	ug/kg	120	--	--	1
Bis(2-chloroethyl)ether	ND	ug/kg	180	--	--	1
2-Chloronaphthalene	ND	ug/kg	210	--	--	1
1,2-Dichlorobenzene	ND	ug/kg	210	--	--	1
1,3-Dichlorobenzene	ND	ug/kg	210	--	--	1
1,4-Dichlorobenzene	ND	ug/kg	210	--	--	1
3,3'-Dichlorobenzidine	ND	ug/kg	210	--	--	1
2,4-Dinitrotoluene	ND	ug/kg	210	--	--	1
2,6-Dinitrotoluene	ND	ug/kg	210	--	--	1
Azobenzene	ND	ug/kg	210	--	--	1
Fluoranthene	280	ug/kg	120	--	--	1
4-Bromophenyl phenyl ether	ND	ug/kg	210	--	--	1
Bis(2-chloroisopropyl)ether	ND	ug/kg	250	--	--	1
Bis(2-chloroethoxy)methane	ND	ug/kg	220	--	--	1
Hexachlorobutadiene	ND	ug/kg	210	--	--	1
Hexachloroethane	ND	ug/kg	160	--	--	1
Isophorone	ND	ug/kg	180	--	--	1
Naphthalene	ND	ug/kg	210	--	--	1
Nitrobenzene	ND	ug/kg	180	--	--	1
Bis(2-ethylhexyl)phthalate	ND	ug/kg	210	--	--	1
Butyl benzyl phthalate	ND	ug/kg	210	--	--	1
Di-n-butylphthalate	ND	ug/kg	210	--	--	1
Di-n-octylphthalate	ND	ug/kg	210	--	--	1
Diethyl phthalate	ND	ug/kg	210	--	--	1
Dimethyl phthalate	ND	ug/kg	210	--	--	1
Benzo(a)anthracene	180	ug/kg	120	--	--	1
Benzo(a)pyrene	160	ug/kg	160	--	--	1
Benzo(b)fluoranthene	200	ug/kg	120	--	--	1



Project Name: EAST BOSTON

Lab Number: L1704637

Project Number: 43068

Report Date: 02/21/17

**SAMPLE RESULTS**

Lab ID:	L1704637-04	Date Collected:	02/14/17 09:50
Client ID:	VES-110 (2-4)	Date Received:	02/14/17
Sample Location:	MA	Field Prep:	Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Semivolatile Organics - Westborough Lab</b>						
Benzo(k)fluoranthene	ND	ug/kg	120	--	--	1
Chrysene	150	ug/kg	120	--	--	1
Acenaphthylene	ND	ug/kg	160	--	--	1
Anthracene	ND	ug/kg	120	--	--	1
Benzo(ghi)perylene	ND	ug/kg	160	--	--	1
Fluorene	ND	ug/kg	210	--	--	1
Phenanthrene	170	ug/kg	120	--	--	1
Dibenzo(a,h)anthracene	ND	ug/kg	120	--	--	1
Indeno(1,2,3-cd)pyrene	ND	ug/kg	160	--	--	1
Pyrene	280	ug/kg	120	--	--	1
Aniline	ND	ug/kg	250	--	--	1
4-Chloroaniline	ND	ug/kg	210	--	--	1
Dibenzofuran	ND	ug/kg	210	--	--	1
2-Methylnaphthalene	ND	ug/kg	250	--	--	1
Acetophenone	ND	ug/kg	210	--	--	1
2,4,6-Trichlorophenol	ND	ug/kg	120	--	--	1
2-Chlorophenol	ND	ug/kg	210	--	--	1
2,4-Dichlorophenol	ND	ug/kg	180	--	--	1
2,4-Dimethylphenol	ND	ug/kg	210	--	--	1
2-Nitrophenol	ND	ug/kg	440	--	--	1
4-Nitrophenol	ND	ug/kg	290	--	--	1
2,4-Dinitrophenol	ND	ug/kg	990	--	--	1
Pentachlorophenol	ND	ug/kg	410	--	--	1
Phenol	ND	ug/kg	210	--	--	1
2-Methylphenol	ND	ug/kg	210	--	--	1
3-Methylphenol/4-Methylphenol	ND	ug/kg	300	--	--	1
2,4,5-Trichlorophenol	ND	ug/kg	210	--	--	1
Pyridine	ND	ug/kg	220	--	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	75		30-130
Phenol-d6	78		30-130
Nitrobenzene-d5	87		30-130
2-Fluorobiphenyl	57		30-130
2,4,6-Tribromophenol	71		30-130
4-Terphenyl-d14	44		30-130

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704637  
**Report Date:** 02/21/17

**SAMPLE RESULTS**

Lab ID: L1704637-05  
Client ID: VES-110 (12-14)  
Sample Location: MA  
Matrix: Soil  
Analytical Method: 97,8270D  
Analytical Date: 02/18/17 01:55  
Analyst: SZ  
Percent Solids: 74%

Date Collected: 02/14/17 09:55  
Date Received: 02/14/17  
Field Prep: Not Specified  
Extraction Method: EPA 3546  
Extraction Date: 02/16/17 07:49

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Semivolatile Organics - Westborough Lab</b>						
Acenaphthene	ND	ug/kg	180	--	--	1
1,2,4-Trichlorobenzene	ND	ug/kg	220	--	--	1
Hexachlorobenzene	ND	ug/kg	130	--	--	1
Bis(2-chloroethyl)ether	ND	ug/kg	200	--	--	1
2-Chloronaphthalene	ND	ug/kg	220	--	--	1
1,2-Dichlorobenzene	ND	ug/kg	220	--	--	1
1,3-Dichlorobenzene	ND	ug/kg	220	--	--	1
1,4-Dichlorobenzene	ND	ug/kg	220	--	--	1
3,3'-Dichlorobenzidine	ND	ug/kg	220	--	--	1
2,4-Dinitrotoluene	ND	ug/kg	220	--	--	1
2,6-Dinitrotoluene	ND	ug/kg	220	--	--	1
Azobenzene	ND	ug/kg	220	--	--	1
Fluoranthene	ND	ug/kg	130	--	--	1
4-Bromophenyl phenyl ether	ND	ug/kg	220	--	--	1
Bis(2-chloroisopropyl)ether	ND	ug/kg	260	--	--	1
Bis(2-chloroethoxy)methane	ND	ug/kg	240	--	--	1
Hexachlorobutadiene	ND	ug/kg	220	--	--	1
Hexachloroethane	ND	ug/kg	180	--	--	1
Isophorone	ND	ug/kg	200	--	--	1
Naphthalene	ND	ug/kg	220	--	--	1
Nitrobenzene	ND	ug/kg	200	--	--	1
Bis(2-ethylhexyl)phthalate	ND	ug/kg	220	--	--	1
Butyl benzyl phthalate	ND	ug/kg	220	--	--	1
Di-n-butylphthalate	ND	ug/kg	220	--	--	1
Di-n-octylphthalate	ND	ug/kg	220	--	--	1
Diethyl phthalate	ND	ug/kg	220	--	--	1
Dimethyl phthalate	ND	ug/kg	220	--	--	1
Benzo(a)anthracene	ND	ug/kg	130	--	--	1
Benzo(a)pyrene	ND	ug/kg	180	--	--	1
Benzo(b)fluoranthene	ND	ug/kg	130	--	--	1



Project Name: EAST BOSTON

Lab Number: L1704637

Project Number: 43068

Report Date: 02/21/17

**SAMPLE RESULTS**

Lab ID:	L1704637-05	Date Collected:	02/14/17 09:55
Client ID:	VES-110 (12-14)	Date Received:	02/14/17
Sample Location:	MA	Field Prep:	Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Semivolatile Organics - Westborough Lab</b>						
Benzo(k)fluoranthene	ND	ug/kg	130	--	--	1
Chrysene	ND	ug/kg	130	--	--	1
Acenaphthylene	ND	ug/kg	180	--	--	1
Anthracene	ND	ug/kg	130	--	--	1
Benzo(ghi)perylene	ND	ug/kg	180	--	--	1
Fluorene	ND	ug/kg	220	--	--	1
Phenanthrene	ND	ug/kg	130	--	--	1
Dibenzo(a,h)anthracene	ND	ug/kg	130	--	--	1
Indeno(1,2,3-cd)pyrene	ND	ug/kg	180	--	--	1
Pyrene	ND	ug/kg	130	--	--	1
Aniline	ND	ug/kg	260	--	--	1
4-Chloroaniline	ND	ug/kg	220	--	--	1
Dibenzofuran	ND	ug/kg	220	--	--	1
2-Methylnaphthalene	ND	ug/kg	260	--	--	1
Acetophenone	ND	ug/kg	220	--	--	1
2,4,6-Trichlorophenol	ND	ug/kg	130	--	--	1
2-Chlorophenol	ND	ug/kg	220	--	--	1
2,4-Dichlorophenol	ND	ug/kg	200	--	--	1
2,4-Dimethylphenol	ND	ug/kg	220	--	--	1
2-Nitrophenol	ND	ug/kg	480	--	--	1
4-Nitrophenol	ND	ug/kg	310	--	--	1
2,4-Dinitrophenol	ND	ug/kg	1100	--	--	1
Pentachlorophenol	ND	ug/kg	440	--	--	1
Phenol	ND	ug/kg	220	--	--	1
2-Methylphenol	ND	ug/kg	220	--	--	1
3-Methylphenol/4-Methylphenol	ND	ug/kg	320	--	--	1
2,4,5-Trichlorophenol	ND	ug/kg	220	--	--	1
Pyridine	ND	ug/kg	240	--	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	57		30-130
Phenol-d6	62		30-130
Nitrobenzene-d5	65		30-130
2-Fluorobiphenyl	46		30-130
2,4,6-Tribromophenol	60		30-130
4-Terphenyl-d14	42		30-130

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704637  
**Report Date:** 02/21/17

**SAMPLE RESULTS**

Lab ID: L1704637-07  
Client ID: VES-111 (2-4)  
Sample Location: MA  
Matrix: Soil  
Analytical Method: 97,8270D  
Analytical Date: 02/18/17 02:21  
Analyst: SZ  
Percent Solids: 74%

Date Collected: 02/14/17 11:40  
Date Received: 02/14/17  
Field Prep: Not Specified  
Extraction Method: EPA 3546  
Extraction Date: 02/16/17 07:49

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Semivolatile Organics - Westborough Lab</b>						
Acenaphthene	ND	ug/kg	180	--	--	1
1,2,4-Trichlorobenzene	ND	ug/kg	220	--	--	1
Hexachlorobenzene	ND	ug/kg	130	--	--	1
Bis(2-chloroethyl)ether	ND	ug/kg	200	--	--	1
2-Chloronaphthalene	ND	ug/kg	220	--	--	1
1,2-Dichlorobenzene	ND	ug/kg	220	--	--	1
1,3-Dichlorobenzene	ND	ug/kg	220	--	--	1
1,4-Dichlorobenzene	ND	ug/kg	220	--	--	1
3,3'-Dichlorobenzidine	ND	ug/kg	220	--	--	1
2,4-Dinitrotoluene	ND	ug/kg	220	--	--	1
2,6-Dinitrotoluene	ND	ug/kg	220	--	--	1
Azobenzene	ND	ug/kg	220	--	--	1
Fluoranthene	310	ug/kg	130	--	--	1
4-Bromophenyl phenyl ether	ND	ug/kg	220	--	--	1
Bis(2-chloroisopropyl)ether	ND	ug/kg	260	--	--	1
Bis(2-chloroethoxy)methane	ND	ug/kg	240	--	--	1
Hexachlorobutadiene	ND	ug/kg	220	--	--	1
Hexachloroethane	ND	ug/kg	180	--	--	1
Isophorone	ND	ug/kg	200	--	--	1
Naphthalene	ND	ug/kg	220	--	--	1
Nitrobenzene	ND	ug/kg	200	--	--	1
Bis(2-ethylhexyl)phthalate	ND	ug/kg	220	--	--	1
Butyl benzyl phthalate	ND	ug/kg	220	--	--	1
Di-n-butylphthalate	ND	ug/kg	220	--	--	1
Di-n-octylphthalate	ND	ug/kg	220	--	--	1
Diethyl phthalate	ND	ug/kg	220	--	--	1
Dimethyl phthalate	ND	ug/kg	220	--	--	1
Benzo(a)anthracene	220	ug/kg	130	--	--	1
Benzo(a)pyrene	220	ug/kg	180	--	--	1
Benzo(b)fluoranthene	290	ug/kg	130	--	--	1



Project Name: EAST BOSTON

Lab Number: L1704637

Project Number: 43068

Report Date: 02/21/17

**SAMPLE RESULTS**

Lab ID:	L1704637-07	Date Collected:	02/14/17 11:40
Client ID:	VES-111 (2-4)	Date Received:	02/14/17
Sample Location:	MA	Field Prep:	Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Semivolatile Organics - Westborough Lab</b>						
Benzo(k)fluoranthene	ND	ug/kg	130	--	--	1
Chrysene	230	ug/kg	130	--	--	1
Acenaphthylene	ND	ug/kg	180	--	--	1
Anthracene	ND	ug/kg	130	--	--	1
Benzo(ghi)perylene	ND	ug/kg	180	--	--	1
Fluorene	ND	ug/kg	220	--	--	1
Phenanthrene	130	ug/kg	130	--	--	1
Dibenzo(a,h)anthracene	ND	ug/kg	130	--	--	1
Indeno(1,2,3-cd)pyrene	ND	ug/kg	180	--	--	1
Pyrene	290	ug/kg	130	--	--	1
Aniline	ND	ug/kg	260	--	--	1
4-Chloroaniline	ND	ug/kg	220	--	--	1
Dibenzofuran	ND	ug/kg	220	--	--	1
2-Methylnaphthalene	ND	ug/kg	260	--	--	1
Acetophenone	ND	ug/kg	220	--	--	1
2,4,6-Trichlorophenol	ND	ug/kg	130	--	--	1
2-Chlorophenol	ND	ug/kg	220	--	--	1
2,4-Dichlorophenol	ND	ug/kg	200	--	--	1
2,4-Dimethylphenol	ND	ug/kg	220	--	--	1
2-Nitrophenol	ND	ug/kg	480	--	--	1
4-Nitrophenol	ND	ug/kg	310	--	--	1
2,4-Dinitrophenol	ND	ug/kg	1000	--	--	1
Pentachlorophenol	ND	ug/kg	440	--	--	1
Phenol	ND	ug/kg	220	--	--	1
2-Methylphenol	ND	ug/kg	220	--	--	1
3-Methylphenol/4-Methylphenol	ND	ug/kg	320	--	--	1
2,4,5-Trichlorophenol	ND	ug/kg	220	--	--	1
Pyridine	ND	ug/kg	240	--	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	66		30-130
Phenol-d6	72		30-130
Nitrobenzene-d5	79		30-130
2-Fluorobiphenyl	56		30-130
2,4,6-Tribromophenol	65		30-130
4-Terphenyl-d14	43		30-130

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704637  
**Report Date:** 02/21/17

**SAMPLE RESULTS**

Lab ID: L1704637-08  
Client ID: VES-125 (0-2)  
Sample Location: MA  
Matrix: Soil  
Analytical Method: 97,8270D  
Analytical Date: 02/18/17 02:47  
Analyst: SZ  
Percent Solids: 87%

Date Collected: 02/14/17 14:35  
Date Received: 02/14/17  
Field Prep: Not Specified  
Extraction Method: EPA 3546  
Extraction Date: 02/16/17 07:49

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Semivolatile Organics - Westborough Lab</b>						
Acenaphthene	ND	ug/kg	150	--	--	1
1,2,4-Trichlorobenzene	ND	ug/kg	180	--	--	1
Hexachlorobenzene	ND	ug/kg	110	--	--	1
Bis(2-chloroethyl)ether	ND	ug/kg	170	--	--	1
2-Chloronaphthalene	ND	ug/kg	180	--	--	1
1,2-Dichlorobenzene	ND	ug/kg	180	--	--	1
1,3-Dichlorobenzene	ND	ug/kg	180	--	--	1
1,4-Dichlorobenzene	ND	ug/kg	180	--	--	1
3,3'-Dichlorobenzidine	ND	ug/kg	180	--	--	1
2,4-Dinitrotoluene	ND	ug/kg	180	--	--	1
2,6-Dinitrotoluene	ND	ug/kg	180	--	--	1
Azobenzene	ND	ug/kg	180	--	--	1
Fluoranthene	1300	ug/kg	110	--	--	1
4-Bromophenyl phenyl ether	ND	ug/kg	180	--	--	1
Bis(2-chloroisopropyl)ether	ND	ug/kg	220	--	--	1
Bis(2-chloroethoxy)methane	ND	ug/kg	200	--	--	1
Hexachlorobutadiene	ND	ug/kg	180	--	--	1
Hexachloroethane	ND	ug/kg	150	--	--	1
Isophorone	ND	ug/kg	170	--	--	1
Naphthalene	ND	ug/kg	180	--	--	1
Nitrobenzene	ND	ug/kg	170	--	--	1
Bis(2-ethylhexyl)phthalate	ND	ug/kg	180	--	--	1
Butyl benzyl phthalate	ND	ug/kg	180	--	--	1
Di-n-butylphthalate	ND	ug/kg	180	--	--	1
Di-n-octylphthalate	ND	ug/kg	180	--	--	1
Diethyl phthalate	ND	ug/kg	180	--	--	1
Dimethyl phthalate	ND	ug/kg	180	--	--	1
Benzo(a)anthracene	780	ug/kg	110	--	--	1
Benzo(a)pyrene	540	ug/kg	150	--	--	1
Benzo(b)fluoranthene	660	ug/kg	110	--	--	1



Project Name: EAST BOSTON

Lab Number: L1704637

Project Number: 43068

Report Date: 02/21/17

**SAMPLE RESULTS**

Lab ID: L1704637-08 Date Collected: 02/14/17 14:35  
 Client ID: VES-125 (0-2) Date Received: 02/14/17  
 Sample Location: MA Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Semivolatile Organics - Westborough Lab</b>						
Benzo(k)fluoranthene	240	ug/kg	110	--	--	1
Chrysene	680	ug/kg	110	--	--	1
Acenaphthylene	ND	ug/kg	150	--	--	1
Anthracene	130	ug/kg	110	--	--	1
Benzo(ghi)perylene	310	ug/kg	150	--	--	1
Fluorene	ND	ug/kg	180	--	--	1
Phenanthrene	380	ug/kg	110	--	--	1
Dibenzo(a,h)anthracene	ND	ug/kg	110	--	--	1
Indeno(1,2,3-cd)pyrene	360	ug/kg	150	--	--	1
Pyrene	1200	ug/kg	110	--	--	1
Aniline	ND	ug/kg	220	--	--	1
4-Chloroaniline	ND	ug/kg	180	--	--	1
Dibenzofuran	ND	ug/kg	180	--	--	1
2-Methylnaphthalene	ND	ug/kg	220	--	--	1
Acetophenone	ND	ug/kg	180	--	--	1
2,4,6-Trichlorophenol	ND	ug/kg	110	--	--	1
2-Chlorophenol	ND	ug/kg	180	--	--	1
2,4-Dichlorophenol	ND	ug/kg	170	--	--	1
2,4-Dimethylphenol	ND	ug/kg	180	--	--	1
2-Nitrophenol	ND	ug/kg	400	--	--	1
4-Nitrophenol	ND	ug/kg	260	--	--	1
2,4-Dinitrophenol	ND	ug/kg	890	--	--	1
Pentachlorophenol	ND	ug/kg	370	--	--	1
Phenol	ND	ug/kg	180	--	--	1
2-Methylphenol	ND	ug/kg	180	--	--	1
3-Methylphenol/4-Methylphenol	ND	ug/kg	270	--	--	1
2,4,5-Trichlorophenol	ND	ug/kg	180	--	--	1
Pyridine	ND	ug/kg	200	--	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	76		30-130
Phenol-d6	79		30-130
Nitrobenzene-d5	85		30-130
2-Fluorobiphenyl	70		30-130
2,4,6-Tribromophenol	72		30-130
4-Terphenyl-d14	67		30-130

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704637  
**Report Date:** 02/21/17

### Method Blank Analysis Batch Quality Control

Analytical Method: 97,8270D  
Analytical Date: 02/17/17 23:18  
Analyst: SZ

Extraction Method: EPA 3546  
Extraction Date: 02/16/17 07:49

Parameter	Result	Qualifier	Units	RL	MDL
MCP Semivolatile Organics - Westborough Lab for sample(s): 01-02,04-05,07-08 Batch: WG978313-1					
Acenaphthene	ND		ug/kg	130	--
1,2,4-Trichlorobenzene	ND		ug/kg	160	--
Hexachlorobenzene	ND		ug/kg	97	--
Bis(2-chloroethyl)ether	ND		ug/kg	140	--
2-Chloronaphthalene	ND		ug/kg	160	--
1,2-Dichlorobenzene	ND		ug/kg	160	--
1,3-Dichlorobenzene	ND		ug/kg	160	--
1,4-Dichlorobenzene	ND		ug/kg	160	--
3,3'-Dichlorobenzidine	ND		ug/kg	160	--
2,4-Dinitrotoluene	ND		ug/kg	160	--
2,6-Dinitrotoluene	ND		ug/kg	160	--
Azobenzene	ND		ug/kg	160	--
Fluoranthene	ND		ug/kg	97	--
4-Bromophenyl phenyl ether	ND		ug/kg	160	--
Bis(2-chloroisopropyl)ether	ND		ug/kg	190	--
Bis(2-chloroethoxy)methane	ND		ug/kg	170	--
Hexachlorobutadiene	ND		ug/kg	160	--
Hexachloroethane	ND		ug/kg	130	--
Isophorone	ND		ug/kg	140	--
Naphthalene	ND		ug/kg	160	--
Nitrobenzene	ND		ug/kg	140	--
Bis(2-ethylhexyl)phthalate	ND		ug/kg	160	--
Butyl benzyl phthalate	ND		ug/kg	160	--
Di-n-butylphthalate	ND		ug/kg	160	--
Di-n-octylphthalate	ND		ug/kg	160	--
Diethyl phthalate	ND		ug/kg	160	--
Dimethyl phthalate	ND		ug/kg	160	--
Benzo(a)anthracene	ND		ug/kg	97	--
Benzo(a)pyrene	ND		ug/kg	130	--



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704637  
**Report Date:** 02/21/17

### Method Blank Analysis Batch Quality Control

Analytical Method: 97,8270D  
Analytical Date: 02/17/17 23:18  
Analyst: SZ

Extraction Method: EPA 3546  
Extraction Date: 02/16/17 07:49

Parameter	Result	Qualifier	Units	RL	MDL
MCP Semivolatile Organics - Westborough Lab for sample(s): 01-02,04-05,07-08 Batch: WG978313-1					
Benzo(b)fluoranthene	ND		ug/kg	97	--
Benzo(k)fluoranthene	ND		ug/kg	97	--
Chrysene	ND		ug/kg	97	--
Acenaphthylene	ND		ug/kg	130	--
Anthracene	ND		ug/kg	97	--
Benzo(ghi)perylene	ND		ug/kg	130	--
Fluorene	ND		ug/kg	160	--
Phenanthrene	ND		ug/kg	97	--
Dibenzo(a,h)anthracene	ND		ug/kg	97	--
Indeno(1,2,3-cd)pyrene	ND		ug/kg	130	--
Pyrene	ND		ug/kg	97	--
Aniline	ND		ug/kg	190	--
4-Chloroaniline	ND		ug/kg	160	--
Dibenzofuran	ND		ug/kg	160	--
2-Methylnaphthalene	ND		ug/kg	190	--
Acetophenone	ND		ug/kg	160	--
2,4,6-Trichlorophenol	ND		ug/kg	97	--
2-Chlorophenol	ND		ug/kg	160	--
2,4-Dichlorophenol	ND		ug/kg	140	--
2,4-Dimethylphenol	ND		ug/kg	160	--
2-Nitrophenol	ND		ug/kg	350	--
4-Nitrophenol	ND		ug/kg	230	--
2,4-Dinitrophenol	ND		ug/kg	780	--
Pentachlorophenol	ND		ug/kg	320	--
Phenol	ND		ug/kg	160	--
2-Methylphenol	ND		ug/kg	160	--
3-Methylphenol/4-Methylphenol	ND		ug/kg	230	--
2,4,5-Trichlorophenol	ND		ug/kg	160	--
Pyridine	ND		ug/kg	170	--



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704637  
**Report Date:** 02/21/17

**Method Blank Analysis**  
**Batch Quality Control**

Analytical Method: 97,8270D  
Analytical Date: 02/17/17 23:18  
Analyst: SZ

Extraction Method: EPA 3546  
Extraction Date: 02/16/17 07:49

Parameter	Result	Qualifier	Units	RL	MDL
MCP Semivolatile Organics - Westborough Lab for sample(s): 01-02,04-05,07-08 Batch: WG978313-1					

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	75		30-130
Phenol-d6	77		30-130
Nitrobenzene-d5	77		30-130
2-Fluorobiphenyl	73		30-130
2,4,6-Tribromophenol	69		30-130
4-Terphenyl-d14	78		30-130

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704637  
**Report Date:** 02/21/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Semivolatile Organics - Westborough Lab Associated sample(s): 01-02,04-05,07-08 Batch: WG978313-2 WG978313-3								
Acenaphthene	73		91		40-140	22		30
1,2,4-Trichlorobenzene	74		89		40-140	18		30
Hexachlorobenzene	75		99		40-140	28		30
Bis(2-chloroethyl)ether	72		87		40-140	19		30
2-Chloronaphthalene	73		93		40-140	24		30
1,2-Dichlorobenzene	69		81		40-140	16		30
1,3-Dichlorobenzene	67		77		40-140	14		30
1,4-Dichlorobenzene	68		79		40-140	15		30
3,3'-Dichlorobenzidine	56		77		40-140	32	Q	30
2,4-Dinitrotoluene	75		105		40-140	33	Q	30
2,6-Dinitrotoluene	76		101		40-140	28		30
Azobenzene	79		102		40-140	25		30
Fluoranthene	76		102		40-140	29		30
4-Bromophenyl phenyl ether	74		97		40-140	27		30
Bis(2-chloroisopropyl)ether	72		87		40-140	19		30
Bis(2-chloroethoxy)methane	76		95		40-140	22		30
Hexachlorobutadiene	68		85		40-140	22		30
Hexachloroethane	68		83		40-140	20		30
Isophorone	79		98		40-140	21		30
Naphthalene	71		88		40-140	21		30
Nitrobenzene	79		99		40-140	22		30

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704637  
**Report Date:** 02/21/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Semivolatile Organics - Westborough Lab Associated sample(s): 01-02,04-05,07-08 Batch: WG978313-2 WG978313-3								
Bis(2-ethylhexyl)phthalate	74		100		40-140	30		30
Butyl benzyl phthalate	75		105		40-140	33	Q	30
Di-n-butylphthalate	80		111		40-140	32	Q	30
Di-n-octylphthalate	74		101		40-140	31	Q	30
Diethyl phthalate	77		103		40-140	29		30
Dimethyl phthalate	77		103		40-140	29		30
Benzo(a)anthracene	77		100		40-140	26		30
Benzo(a)pyrene	79		104		40-140	27		30
Benzo(b)fluoranthene	78		101		40-140	26		30
Benzo(k)fluoranthene	79		103		40-140	26		30
Chrysene	74		94		40-140	24		30
Acenaphthylene	78		101		40-140	26		30
Anthracene	76		98		40-140	25		30
Benzo(ghi)perylene	77		101		40-140	27		30
Fluorene	75		96		40-140	25		30
Phenanthrene	74		94		40-140	24		30
Dibenz(a,h)anthracene	78		102		40-140	27		30
Indeno(1,2,3-cd)pyrene	78		103		40-140	28		30
Pyrene	76		101		40-140	28		30
Aniline	43		52		40-140	19		30
4-Chloroaniline	44		54		40-140	20		30

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704637  
**Report Date:** 02/21/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Semivolatile Organics - Westborough Lab Associated sample(s): 01-02,04-05,07-08 Batch: WG978313-2 WG978313-3								
Dibenzofuran	74		92		40-140	22		30
2-Methylnaphthalene	72		90		40-140	22		30
Acetophenone	82		100		40-140	20		30
2,4,6-Trichlorophenol	84		110		30-130	27		30
2-Chlorophenol	79		96		30-130	19		30
2,4-Dichlorophenol	84		104		30-130	21		30
2,4-Dimethylphenol	83		103		30-130	22		30
2-Nitrophenol	86		110		30-130	24		30
4-Nitrophenol	73		104		30-130	35	Q	30
2,4-Dinitrophenol	56		74		30-130	28		30
Pentachlorophenol	66		94		30-130	35	Q	30
Phenol	78		97		30-130	22		30
2-Methylphenol	79		99		30-130	22		30
3-Methylphenol/4-Methylphenol	81		99		30-130	20		30
2,4,5-Trichlorophenol	81		108		30-130	29		30
Pyridine	55		60		30-130	9		30

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704637  
**Report Date:** 02/21/17

<b>Parameter</b>	<i>LCS</i> <i>%Recovery</i>	<i>Qual</i>	<i>LCSD</i> <i>%Recovery</i>	<i>Qual</i>	<i>%Recovery</i> <i>Limits</i>	<i>RPD</i>	<i>Qual</i>	<i>RPD</i> <i>Limits</i>
MCP Semivolatile Organics - Westborough Lab Associated sample(s): 01-02,04-05,07-08 Batch: WG978313-2 WG978313-3								
<b>Surrogate</b>	<i>LCS</i> <i>%Recovery</i>	<i>Qual</i>	<i>LCSD</i> <i>%Recovery</i>	<i>Qual</i>	<b>Acceptance Criteria</b>			
2-Fluorophenol	74		91		30-130			
Phenol-d6	79		98		30-130			
Nitrobenzene-d5	78		100		30-130			
2-Fluorobiphenyl	73		93		30-130			
2,4,6-Tribromophenol	73		99		30-130			
4-Terphenyl-d14	74		100		30-130			

# PETROLEUM HYDROCARBONS



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704637  
**Report Date:** 02/21/17

### SAMPLE RESULTS

Lab ID:	L1704637-01	Date Collected:	02/14/17 09:00
Client ID:	VES-104 (2-4)	Date Received:	02/14/17
Sample Location:	MA	Field Prep:	Not Specified
Matrix:	Soil		
Analytical Method:	100,VPH-04-1.1		
Analytical Date:	02/17/17 20:16		
Analyst:	JM		
Percent Solids:	83%		

### Quality Control Information

Condition of sample received:	Satisfactory
Sample Temperature upon receipt:	Received on Ice
Were samples received in methanol?	Yes (Covering the Soil)
Methanol ratio:	4.7:1

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>Volatile Petroleum Hydrocarbons - Westborough Lab</b>						
C5-C8 Aliphatics	ND		mg/kg	15.7	--	1
C9-C12 Aliphatics	27.2		mg/kg	15.7	--	1
C9-C10 Aromatics	17.7		mg/kg	15.7	--	1
C5-C8 Aliphatics, Adjusted	ND		mg/kg	15.7	--	1
C9-C12 Aliphatics, Adjusted	ND		mg/kg	15.7	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2,5-Dibromotoluene-PID	109		70-130
2,5-Dibromotoluene-FID	115		70-130

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704637  
**Report Date:** 02/21/17

### SAMPLE RESULTS

Lab ID:	L1704637-01	Date Collected:	02/14/17 09:00
Client ID:	VES-104 (2-4)	Date Received:	02/14/17
Sample Location:	MA	Field Prep:	Not Specified
Matrix:	Soil	Extraction Method:	EPA 3546
Analytical Method:	98,EPH-04-1.1	Extraction Date:	02/15/17 01:31
Analytical Date:	02/16/17 05:15	Cleanup Method1:	EPH-04-1
Analyst:	NS	Cleanup Date1:	02/15/17
Percent Solids:	83%		

### Quality Control Information

Condition of sample received:	Satisfactory
Sample Temperature upon receipt:	Received on Ice
Sample Extraction method:	Extracted Per the Method

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>Extractable Petroleum Hydrocarbons - Westborough Lab</b>						
C9-C18 Aliphatics	53.3		mg/kg	7.96	--	1
C19-C36 Aliphatics	377		mg/kg	7.96	--	1
C11-C22 Aromatics	140		mg/kg	7.96	--	1
C11-C22 Aromatics, Adjusted	132		mg/kg	7.96	--	1
Naphthalene	ND		mg/kg	0.398	--	1
2-Methylnaphthalene	ND		mg/kg	0.398	--	1
Acenaphthylene	ND		mg/kg	0.398	--	1
Acenaphthene	ND		mg/kg	0.398	--	1
Fluorene	ND		mg/kg	0.398	--	1
Phenanthrene	0.779		mg/kg	0.398	--	1
Anthracene	ND		mg/kg	0.398	--	1
Fluoranthene	1.37		mg/kg	0.398	--	1
Pyrene	1.15		mg/kg	0.398	--	1
Benzo(a)anthracene	0.692		mg/kg	0.398	--	1
Chrysene	0.989		mg/kg	0.398	--	1
Benzo(b)fluoranthene	0.743		mg/kg	0.398	--	1
Benzo(k)fluoranthene	0.806		mg/kg	0.398	--	1
Benzo(a)pyrene	0.789		mg/kg	0.398	--	1
Indeno(1,2,3-cd)Pyrene	0.563		mg/kg	0.398	--	1
Dibenzo(a,h)anthracene	ND		mg/kg	0.398	--	1
Benzo(ghi)perylene	0.573		mg/kg	0.398	--	1



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704637  
**Report Date:** 02/21/17

**SAMPLE RESULTS**

Lab ID:	L1704637-01	Date Collected:	02/14/17 09:00
Client ID:	VES-104 (2-4)	Date Received:	02/14/17
Sample Location:	MA	Field Prep:	Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
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**Extractable Petroleum Hydrocarbons - Westborough Lab**

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Chloro-Octadecane	64		40-140
o-Terphenyl	64		40-140
2-Fluorobiphenyl	53		40-140
2-Bromonaphthalene	54		40-140

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704637  
**Report Date:** 02/21/17

### SAMPLE RESULTS

Lab ID:	L1704637-02	Date Collected:	02/14/17 11:30
Client ID:	VES-106 (5-7)	Date Received:	02/14/17
Sample Location:	MA	Field Prep:	Not Specified
Matrix:	Soil		
Analytical Method:	100,VPH-04-1.1		
Analytical Date:	02/18/17 00:55		
Analyst:	JM		
Percent Solids:	69%		

### Quality Control Information

Condition of sample received:	Satisfactory
Sample Temperature upon receipt:	Received on Ice
Were samples received in methanol?	Yes (Covering the Soil)
Methanol ratio:	2.8:1

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>Volatile Petroleum Hydrocarbons - Westborough Lab</b>						
C5-C8 Aliphatics	ND		mg/kg	12.1	--	1
C9-C12 Aliphatics	64.7		mg/kg	12.1	--	1
C9-C10 Aromatics	44.2		mg/kg	12.1	--	1
C5-C8 Aliphatics, Adjusted	ND		mg/kg	12.1	--	1
C9-C12 Aliphatics, Adjusted	20.5		mg/kg	12.1	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2,5-Dibromotoluene-PID	100		70-130
2,5-Dibromotoluene-FID	102		70-130

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704637  
**Report Date:** 02/21/17

### SAMPLE RESULTS

Lab ID:	L1704637-02	Date Collected:	02/14/17 11:30
Client ID:	VES-106 (5-7)	Date Received:	02/14/17
Sample Location:	MA	Field Prep:	Not Specified
Matrix:	Soil	Extraction Method:	EPA 3546
Analytical Method:	98,EPH-04-1.1	Extraction Date:	02/15/17 01:31
Analytical Date:	02/16/17 03:08	Cleanup Method1:	EPH-04-1
Analyst:	NS	Cleanup Date1:	02/15/17
Percent Solids:	69%		

### Quality Control Information

Condition of sample received:	Satisfactory
Sample Temperature upon receipt:	Received on Ice
Sample Extraction method:	Extracted Per the Method

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>Extractable Petroleum Hydrocarbons - Westborough Lab</b>						
C9-C18 Aliphatics	44.5		mg/kg	9.31	--	1
C19-C36 Aliphatics	382		mg/kg	9.31	--	1
C11-C22 Aromatics	110		mg/kg	9.31	--	1
C11-C22 Aromatics, Adjusted	109		mg/kg	9.31	--	1
Naphthalene	ND		mg/kg	0.466	--	1
2-Methylnaphthalene	ND		mg/kg	0.466	--	1
Acenaphthylene	ND		mg/kg	0.466	--	1
Acenaphthene	ND		mg/kg	0.466	--	1
Fluorene	ND		mg/kg	0.466	--	1
Phenanthrene	ND		mg/kg	0.466	--	1
Anthracene	ND		mg/kg	0.466	--	1
Fluoranthene	0.660		mg/kg	0.466	--	1
Pyrene	0.554		mg/kg	0.466	--	1
Benzo(a)anthracene	ND		mg/kg	0.466	--	1
Chrysene	ND		mg/kg	0.466	--	1
Benzo(b)fluoranthene	ND		mg/kg	0.466	--	1
Benzo(k)fluoranthene	ND		mg/kg	0.466	--	1
Benzo(a)pyrene	ND		mg/kg	0.466	--	1
Indeno(1,2,3-cd)Pyrene	ND		mg/kg	0.466	--	1
Dibenzo(a,h)anthracene	ND		mg/kg	0.466	--	1
Benzo(ghi)perylene	ND		mg/kg	0.466	--	1



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704637  
**Report Date:** 02/21/17

**SAMPLE RESULTS**

Lab ID:	L1704637-02	Date Collected:	02/14/17 11:30
Client ID:	VES-106 (5-7)	Date Received:	02/14/17
Sample Location:	MA	Field Prep:	Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
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**Extractable Petroleum Hydrocarbons - Westborough Lab**

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Chloro-Octadecane	84		40-140
o-Terphenyl	70		40-140
2-Fluorobiphenyl	57		40-140
2-Bromonaphthalene	59		40-140

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704637  
**Report Date:** 02/21/17

### SAMPLE RESULTS

Lab ID:	L1704637-04	Date Collected:	02/14/17 09:50
Client ID:	VES-110 (2-4)	Date Received:	02/14/17
Sample Location:	MA	Field Prep:	Not Specified
Matrix:	Soil		
Analytical Method:	100,VPH-04-1.1		
Analytical Date:	02/17/17 20:56		
Analyst:	JM		
Percent Solids:	80%		

### Quality Control Information

Condition of sample received:	Satisfactory
Sample Temperature upon receipt:	Received on Ice
Were samples received in methanol?	Yes (Covering the Soil)
Methanol ratio:	1:1.5

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>Volatile Petroleum Hydrocarbons - Westborough Lab</b>						
C5-C8 Aliphatics	ND		mg/kg	2.83	--	1
C9-C12 Aliphatics	ND		mg/kg	2.83	--	1
C9-C10 Aromatics	ND		mg/kg	2.83	--	1
C5-C8 Aliphatics, Adjusted	ND		mg/kg	2.83	--	1
C9-C12 Aliphatics, Adjusted	ND		mg/kg	2.83	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2,5-Dibromotoluene-PID	85		70-130
2,5-Dibromotoluene-FID	89		70-130

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704637  
**Report Date:** 02/21/17

### SAMPLE RESULTS

Lab ID:	L1704637-04	Date Collected:	02/14/17 09:50
Client ID:	VES-110 (2-4)	Date Received:	02/14/17
Sample Location:	MA	Field Prep:	Not Specified
Matrix:	Soil	Extraction Method:	EPA 3546
Analytical Method:	98,EPH-04-1.1	Extraction Date:	02/15/17 01:31
Analytical Date:	02/16/17 02:36	Cleanup Method1:	EPH-04-1
Analyst:	NS	Cleanup Date1:	02/15/17
Percent Solids:	80%		

### Quality Control Information

Condition of sample received:	Satisfactory
Sample Temperature upon receipt:	Received on Ice
Sample Extraction method:	Extracted Per the Method

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>Extractable Petroleum Hydrocarbons - Westborough Lab</b>						
C9-C18 Aliphatics	ND		mg/kg	8.14	--	1
C19-C36 Aliphatics	8.65		mg/kg	8.14	--	1
C11-C22 Aromatics	ND		mg/kg	8.14	--	1
C11-C22 Aromatics, Adjusted	ND		mg/kg	8.14	--	1
Naphthalene	ND		mg/kg	0.407	--	1
2-Methylnaphthalene	ND		mg/kg	0.407	--	1
Acenaphthylene	ND		mg/kg	0.407	--	1
Acenaphthene	ND		mg/kg	0.407	--	1
Fluorene	ND		mg/kg	0.407	--	1
Phenanthrene	ND		mg/kg	0.407	--	1
Anthracene	ND		mg/kg	0.407	--	1
Fluoranthene	ND		mg/kg	0.407	--	1
Pyrene	ND		mg/kg	0.407	--	1
Benzo(a)anthracene	ND		mg/kg	0.407	--	1
Chrysene	ND		mg/kg	0.407	--	1
Benzo(b)fluoranthene	ND		mg/kg	0.407	--	1
Benzo(k)fluoranthene	ND		mg/kg	0.407	--	1
Benzo(a)pyrene	ND		mg/kg	0.407	--	1
Indeno(1,2,3-cd)Pyrene	ND		mg/kg	0.407	--	1
Dibenzo(a,h)anthracene	ND		mg/kg	0.407	--	1
Benzo(ghi)perylene	ND		mg/kg	0.407	--	1



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704637  
**Report Date:** 02/21/17

**SAMPLE RESULTS**

Lab ID:	L1704637-04	Date Collected:	02/14/17 09:50
Client ID:	VES-110 (2-4)	Date Received:	02/14/17
Sample Location:	MA	Field Prep:	Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
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**Extractable Petroleum Hydrocarbons - Westborough Lab**

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Chloro-Octadecane	81		40-140
o-Terphenyl	73		40-140
2-Fluorobiphenyl	65		40-140
2-Bromonaphthalene	67		40-140



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704637  
**Report Date:** 02/21/17

### SAMPLE RESULTS

Lab ID:	L1704637-05	Date Collected:	02/14/17 09:55
Client ID:	VES-110 (12-14)	Date Received:	02/14/17
Sample Location:	MA	Field Prep:	Not Specified
Matrix:	Soil		
Analytical Method:	100,VPH-04-1.1		
Analytical Date:	02/17/17 21:36		
Analyst:	JM		
Percent Solids:	74%		

### Quality Control Information

Condition of sample received:	Satisfactory
Sample Temperature upon receipt:	Received on Ice
Were samples received in methanol?	Yes (Covering the Soil)
Methanol ratio:	1:1.4

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>Volatile Petroleum Hydrocarbons - Westborough Lab</b>						
C5-C8 Aliphatics	ND		mg/kg	3.53	--	1
C9-C12 Aliphatics	ND		mg/kg	3.53	--	1
C9-C10 Aromatics	ND		mg/kg	3.53	--	1
C5-C8 Aliphatics, Adjusted	ND		mg/kg	3.53	--	1
C9-C12 Aliphatics, Adjusted	ND		mg/kg	3.53	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2,5-Dibromotoluene-PID	103		70-130
2,5-Dibromotoluene-FID	107		70-130

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704637  
**Report Date:** 02/21/17

### SAMPLE RESULTS

Lab ID:	L1704637-05	Date Collected:	02/14/17 09:55
Client ID:	VES-110 (12-14)	Date Received:	02/14/17
Sample Location:	MA	Field Prep:	Not Specified
Matrix:	Soil	Extraction Method:	EPA 3546
Analytical Method:	98,EPH-04-1.1	Extraction Date:	02/15/17 01:31
Analytical Date:	02/16/17 02:05	Cleanup Method1:	EPH-04-1
Analyst:	NS	Cleanup Date1:	02/15/17
Percent Solids:	74%		

### Quality Control Information

Condition of sample received:	Satisfactory
Sample Temperature upon receipt:	Received on Ice
Sample Extraction method:	Extracted Per the Method

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>Extractable Petroleum Hydrocarbons - Westborough Lab</b>						
C9-C18 Aliphatics	ND		mg/kg	8.73	--	1
C19-C36 Aliphatics	ND		mg/kg	8.73	--	1
C11-C22 Aromatics	ND		mg/kg	8.73	--	1
C11-C22 Aromatics, Adjusted	ND		mg/kg	8.73	--	1
Naphthalene	ND		mg/kg	0.437	--	1
2-Methylnaphthalene	ND		mg/kg	0.437	--	1
Acenaphthylene	ND		mg/kg	0.437	--	1
Acenaphthene	ND		mg/kg	0.437	--	1
Fluorene	ND		mg/kg	0.437	--	1
Phenanthrene	ND		mg/kg	0.437	--	1
Anthracene	ND		mg/kg	0.437	--	1
Fluoranthene	ND		mg/kg	0.437	--	1
Pyrene	ND		mg/kg	0.437	--	1
Benzo(a)anthracene	ND		mg/kg	0.437	--	1
Chrysene	ND		mg/kg	0.437	--	1
Benzo(b)fluoranthene	ND		mg/kg	0.437	--	1
Benzo(k)fluoranthene	ND		mg/kg	0.437	--	1
Benzo(a)pyrene	ND		mg/kg	0.437	--	1
Indeno(1,2,3-cd)Pyrene	ND		mg/kg	0.437	--	1
Dibenzo(a,h)anthracene	ND		mg/kg	0.437	--	1
Benzo(ghi)perylene	ND		mg/kg	0.437	--	1



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704637  
**Report Date:** 02/21/17

**SAMPLE RESULTS**

Lab ID:	L1704637-05	Date Collected:	02/14/17 09:55
Client ID:	VES-110 (12-14)	Date Received:	02/14/17
Sample Location:	MA	Field Prep:	Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
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**Extractable Petroleum Hydrocarbons - Westborough Lab**

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Chloro-Octadecane	79		40-140
o-Terphenyl	66		40-140
2-Fluorobiphenyl	60		40-140
2-Bromonaphthalene	62		40-140

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704637  
**Report Date:** 02/21/17

### SAMPLE RESULTS

Lab ID:	L1704637-07	Date Collected:	02/14/17 11:40
Client ID:	VES-111 (2-4)	Date Received:	02/14/17
Sample Location:	MA	Field Prep:	Not Specified
Matrix:	Soil		
Analytical Method:	100,VPH-04-1.1		
Analytical Date:	02/17/17 22:16		
Analyst:	JM		
Percent Solids:	74%		

### Quality Control Information

Condition of sample received:	Satisfactory
Sample Temperature upon receipt:	Received on Ice
Were samples received in methanol?	Yes (Covering the Soil)
Methanol ratio:	1:1 +/- 25%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>Volatile Petroleum Hydrocarbons - Westborough Lab</b>						
C5-C8 Aliphatics	ND		mg/kg	4.07	--	1
C9-C12 Aliphatics	ND		mg/kg	4.07	--	1
C9-C10 Aromatics	ND		mg/kg	4.07	--	1
C5-C8 Aliphatics, Adjusted	ND		mg/kg	4.07	--	1
C9-C12 Aliphatics, Adjusted	ND		mg/kg	4.07	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2,5-Dibromotoluene-PID	98		70-130
2,5-Dibromotoluene-FID	101		70-130

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704637  
**Report Date:** 02/21/17

### SAMPLE RESULTS

Lab ID:	L1704637-07	Date Collected:	02/14/17 11:40
Client ID:	VES-111 (2-4)	Date Received:	02/14/17
Sample Location:	MA	Field Prep:	Not Specified
Matrix:	Soil	Extraction Method:	EPA 3546
Analytical Method:	98,EPH-04-1.1	Extraction Date:	02/15/17 01:31
Analytical Date:	02/16/17 03:40	Cleanup Method1:	EPH-04-1
Analyst:	NS	Cleanup Date1:	02/15/17
Percent Solids:	74%		

### Quality Control Information

Condition of sample received:	Satisfactory
Sample Temperature upon receipt:	Received on Ice
Sample Extraction method:	Extracted Per the Method

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>Extractable Petroleum Hydrocarbons - Westborough Lab</b>						
C9-C18 Aliphatics	ND		mg/kg	8.91	--	1
C19-C36 Aliphatics	10.9		mg/kg	8.91	--	1
C11-C22 Aromatics	9.78		mg/kg	8.91	--	1
C11-C22 Aromatics, Adjusted	9.78		mg/kg	8.91	--	1
Naphthalene	ND		mg/kg	0.446	--	1
2-Methylnaphthalene	ND		mg/kg	0.446	--	1
Acenaphthylene	ND		mg/kg	0.446	--	1
Acenaphthene	ND		mg/kg	0.446	--	1
Fluorene	ND		mg/kg	0.446	--	1
Phenanthrene	ND		mg/kg	0.446	--	1
Anthracene	ND		mg/kg	0.446	--	1
Fluoranthene	ND		mg/kg	0.446	--	1
Pyrene	ND		mg/kg	0.446	--	1
Benzo(a)anthracene	ND		mg/kg	0.446	--	1
Chrysene	ND		mg/kg	0.446	--	1
Benzo(b)fluoranthene	ND		mg/kg	0.446	--	1
Benzo(k)fluoranthene	ND		mg/kg	0.446	--	1
Benzo(a)pyrene	ND		mg/kg	0.446	--	1
Indeno(1,2,3-cd)Pyrene	ND		mg/kg	0.446	--	1
Dibenzo(a,h)anthracene	ND		mg/kg	0.446	--	1
Benzo(ghi)perylene	ND		mg/kg	0.446	--	1



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704637  
**Report Date:** 02/21/17

**SAMPLE RESULTS**

Lab ID:	L1704637-07	Date Collected:	02/14/17 11:40
Client ID:	VES-111 (2-4)	Date Received:	02/14/17
Sample Location:	MA	Field Prep:	Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
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**Extractable Petroleum Hydrocarbons - Westborough Lab**

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Chloro-Octadecane	74		40-140
o-Terphenyl	55		40-140
2-Fluorobiphenyl	50		40-140
2-Bromonaphthalene	52		40-140



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704637  
**Report Date:** 02/21/17

### SAMPLE RESULTS

Lab ID:	L1704637-08	Date Collected:	02/14/17 14:35
Client ID:	VES-125 (0-2)	Date Received:	02/14/17
Sample Location:	MA	Field Prep:	Not Specified
Matrix:	Soil		
Analytical Method:	100,VPH-04-1.1		
Analytical Date:	02/17/17 22:55		
Analyst:	JM		
Percent Solids:	87%		

### Quality Control Information

Condition of sample received:	Satisfactory
Sample Temperature upon receipt:	Received on Ice
Were samples received in methanol?	Yes (Covering the Soil)
Methanol ratio:	1:1.5

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>Volatile Petroleum Hydrocarbons - Westborough Lab</b>						
C5-C8 Aliphatics	ND		mg/kg	2.40	--	1
C9-C12 Aliphatics	ND		mg/kg	2.40	--	1
C9-C10 Aromatics	ND		mg/kg	2.40	--	1
C5-C8 Aliphatics, Adjusted	ND		mg/kg	2.40	--	1
C9-C12 Aliphatics, Adjusted	ND		mg/kg	2.40	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2,5-Dibromotoluene-PID	98		70-130
2,5-Dibromotoluene-FID	102		70-130

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704637  
**Report Date:** 02/21/17

### SAMPLE RESULTS

Lab ID:	L1704637-08	Date Collected:	02/14/17 14:35
Client ID:	VES-125 (0-2)	Date Received:	02/14/17
Sample Location:	MA	Field Prep:	Not Specified
Matrix:	Soil	Extraction Method:	EPA 3546
Analytical Method:	98,EPH-04-1.1	Extraction Date:	02/15/17 01:31
Analytical Date:	02/16/17 05:46	Cleanup Method1:	EPH-04-1
Analyst:	NS	Cleanup Date1:	02/15/17
Percent Solids:	87%		

### Quality Control Information

Condition of sample received:	Satisfactory
Sample Temperature upon receipt:	Received on Ice
Sample Extraction method:	Extracted Per the Method

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>Extractable Petroleum Hydrocarbons - Westborough Lab</b>						
C9-C18 Aliphatics	ND		mg/kg	7.55	--	1
C19-C36 Aliphatics	148		mg/kg	7.55	--	1
C11-C22 Aromatics	43.5		mg/kg	7.55	--	1
C11-C22 Aromatics, Adjusted	42.7		mg/kg	7.55	--	1
Naphthalene	ND		mg/kg	0.377	--	1
2-Methylnaphthalene	ND		mg/kg	0.377	--	1
Acenaphthylene	ND		mg/kg	0.377	--	1
Acenaphthene	ND		mg/kg	0.377	--	1
Fluorene	ND		mg/kg	0.377	--	1
Phenanthrene	ND		mg/kg	0.377	--	1
Anthracene	ND		mg/kg	0.377	--	1
Fluoranthene	0.461		mg/kg	0.377	--	1
Pyrene	0.388		mg/kg	0.377	--	1
Benzo(a)anthracene	ND		mg/kg	0.377	--	1
Chrysene	ND		mg/kg	0.377	--	1
Benzo(b)fluoranthene	ND		mg/kg	0.377	--	1
Benzo(k)fluoranthene	ND		mg/kg	0.377	--	1
Benzo(a)pyrene	ND		mg/kg	0.377	--	1
Indeno(1,2,3-cd)Pyrene	ND		mg/kg	0.377	--	1
Dibenzo(a,h)anthracene	ND		mg/kg	0.377	--	1
Benzo(ghi)perylene	ND		mg/kg	0.377	--	1



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704637  
**Report Date:** 02/21/17

**SAMPLE RESULTS**

Lab ID:	L1704637-08	Date Collected:	02/14/17 14:35
Client ID:	VES-125 (0-2)	Date Received:	02/14/17
Sample Location:	MA	Field Prep:	Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
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**Extractable Petroleum Hydrocarbons - Westborough Lab**

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Chloro-Octadecane	81		40-140
o-Terphenyl	60		40-140
2-Fluorobiphenyl	50		40-140
2-Bromonaphthalene	52		40-140

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704637  
**Report Date:** 02/21/17

### Method Blank Analysis Batch Quality Control

Analytical Method: 98,EPH-04-1.1  
Analytical Date: 02/15/17 22:56  
Analyst: NS

Extraction Method: EPA 3546  
Extraction Date: 02/15/17 00:56  
Cleanup Method: EPH-04-1  
Cleanup Date: 02/15/17

Parameter	Result	Qualifier	Units	RL	MDL
Extractable Petroleum Hydrocarbons - Westborough Lab for sample(s): WG977881-1				01-02,04-05,07-08	Batch:
C9-C18 Aliphatics	ND		mg/kg	6.27	--
C19-C36 Aliphatics	ND		mg/kg	6.27	--
C11-C22 Aromatics	ND		mg/kg	6.27	--
C11-C22 Aromatics, Adjusted	ND		mg/kg	6.27	--
Naphthalene	ND		mg/kg	0.314	--
2-Methylnaphthalene	ND		mg/kg	0.314	--
Acenaphthylene	ND		mg/kg	0.314	--
Acenaphthene	ND		mg/kg	0.314	--
Fluorene	ND		mg/kg	0.314	--
Phenanthrene	ND		mg/kg	0.314	--
Anthracene	ND		mg/kg	0.314	--
Fluoranthene	ND		mg/kg	0.314	--
Pyrene	ND		mg/kg	0.314	--
Benzo(a)anthracene	ND		mg/kg	0.314	--
Chrysene	ND		mg/kg	0.314	--
Benzo(b)fluoranthene	ND		mg/kg	0.314	--
Benzo(k)fluoranthene	ND		mg/kg	0.314	--
Benzo(a)pyrene	ND		mg/kg	0.314	--
Indeno(1,2,3-cd)Pyrene	ND		mg/kg	0.314	--
Dibenzo(a,h)anthracene	ND		mg/kg	0.314	--
Benzo(ghi)perylene	ND		mg/kg	0.314	--

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704637  
**Report Date:** 02/21/17

### Method Blank Analysis Batch Quality Control

Analytical Method: 98,EPH-04-1.1  
Analytical Date: 02/15/17 22:56  
Analyst: NS

Extraction Method: EPA 3546  
Extraction Date: 02/15/17 00:56  
Cleanup Method: EPH-04-1  
Cleanup Date: 02/15/17

Parameter	Result	Qualifier	Units	RL	MDL
Extractable Petroleum Hydrocarbons - Westborough Lab for sample(s): WG977881-1				01-02,04-05,07-08	Batch:

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Chloro-Octadecane	86		40-140
o-Terphenyl	83		40-140
2-Fluorobiphenyl	76		40-140
2-Bromonaphthalene	79		40-140

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704637  
**Report Date:** 02/21/17

**Method Blank Analysis**  
**Batch Quality Control**

Analytical Method: 100,VPH-04-1.1  
Analytical Date: 02/17/17 11:18  
Analyst: JM

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Petroleum Hydrocarbons - Westborough Lab for sample(s):	01-02,04-05,07-08		Batch:		
WG979575-3					
C5-C8 Aliphatics	ND		mg/kg	2.67	--
C9-C12 Aliphatics	ND		mg/kg	2.67	--
C9-C10 Aromatics	ND		mg/kg	2.67	--
C5-C8 Aliphatics, Adjusted	ND		mg/kg	2.67	--
C9-C12 Aliphatics, Adjusted	ND		mg/kg	2.67	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2,5-Dibromotoluene-PID	102		70-130
2,5-Dibromotoluene-FID	107		70-130

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704637  
**Report Date:** 02/21/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Extractable Petroleum Hydrocarbons - Westborough Lab Associated sample(s): 01-02,04-05,07-08 Batch: WG977881-2 WG977881-3								
C9-C18 Aliphatics	97		80		40-140	19		25
C19-C36 Aliphatics	90		89		40-140	1		25
C11-C22 Aromatics	84		79		40-140	6		25
Naphthalene	71		70		40-140	1		25
2-Methylnaphthalene	72		70		40-140	3		25
Acenaphthylene	76		73		40-140	4		25
Acenaphthene	76		73		40-140	4		25
Fluorene	79		75		40-140	5		25
Phenanthrene	81		77		40-140	5		25
Anthracene	83		78		40-140	6		25
Fluoranthene	83		79		40-140	5		25
Pyrene	83		78		40-140	6		25
Benzo(a)anthracene	82		77		40-140	6		25
Chrysene	84		79		40-140	6		25
Benzo(b)fluoranthene	82		78		40-140	5		25
Benzo(k)fluoranthene	86		80		40-140	7		25
Benzo(a)pyrene	78		73		40-140	7		25
Indeno(1,2,3-cd)Pyrene	81		76		40-140	6		25
Dibenzo(a,h)anthracene	78		73		40-140	7		25
Benzo(ghi)perylene	76		71		40-140	7		25
Nonane (C9)	65		66		30-140	2		25

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704637  
**Report Date:** 02/21/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Extractable Petroleum Hydrocarbons - Westborough Lab Associated sample(s): 01-02,04-05,07-08 Batch: WG977881-2 WG977881-3								
Decane (C10)	73		73		40-140	0		25
Dodecane (C12)	76		76		40-140	0		25
Tetradecane (C14)	78		78		40-140	0		25
Hexadecane (C16)	80		82		40-140	2		25
Octadecane (C18)	84		86		40-140	2		25
Nonadecane (C19)	84		86		40-140	2		25
Eicosane (C20)	85		88		40-140	3		25
Docosane (C22)	85		88		40-140	3		25
Tetracosane (C24)	85		88		40-140	3		25
Hexacosane (C26)	85		88		40-140	3		25
Octacosane (C28)	86		88		40-140	2		25
Triacontane (C30)	85		87		40-140	2		25
Hexatriacontane (C36)	83		85		40-140	2		25

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Chloro-Octadecane	83		87		40-140
o-Terphenyl	94		86		40-140
2-Fluorobiphenyl	79		77		40-140
2-Bromonaphthalene	83		80		40-140
% Naphthalene Breakthrough	0		0		
% 2-Methylnaphthalene Breakthrough	0		0		

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704637  
**Report Date:** 02/21/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Petroleum Hydrocarbons - Westborough Lab Associated sample(s): 01-02,04-05,07-08 Batch: WG979575-1 WG979575-2								
C5-C8 Aliphatics	101		103		70-130	2		25
C9-C12 Aliphatics	98		104		70-130	6		25
C9-C10 Aromatics	96		100		70-130	4		25
Benzene	92		98		70-130	7		25
Toluene	94		98		70-130	5		25
Ethylbenzene	95		98		70-130	4		25
p/m-Xylene	97		100		70-130	3		25
o-Xylene	98		100		70-130	3		25
Methyl tert butyl ether	92		102		70-130	10		25
Naphthalene	103		107		70-130	4		25
1,2,4-Trimethylbenzene	96		100		70-130	4		25
Pentane	95		96		70-130	1		25
2-Methylpentane	100		102		70-130	2		25
2,2,4-Trimethylpentane	104		106		70-130	2		25
n-Nonane	101		105		30-130	4		25
n-Decane	96		101		70-130	5		25
n-Butylcyclohexane	98		105		70-130	7		25

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704637  
**Report Date:** 02/21/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
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Volatile Petroleum Hydrocarbons - Westborough Lab Associated sample(s): 01-02,04-05,07-08 Batch: WG979575-1 WG979575-2

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2,5-Dibromotoluene-PID	101		102		70-130
2,5-Dibromotoluene-FID	102		103		70-130

**PCBS**



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704637  
**Report Date:** 02/21/17

**SAMPLE RESULTS**

Lab ID: L1704637-01  
Client ID: VES-104 (2-4)  
Sample Location: MA  
Matrix: Soil  
Analytical Method: 97,8082A  
Analytical Date: 02/17/17 06:32  
Analyst: JW  
Percent Solids: 83%

Date Collected: 02/14/17 09:00  
Date Received: 02/14/17  
Field Prep: Not Specified  
Extraction Method: EPA 3540C  
Extraction Date: 02/16/17 00:30  
Cleanup Method: EPA 3665A  
Cleanup Date: 02/16/17  
Cleanup Method: EPA 3660B  
Cleanup Date: 02/16/17

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
<b>MCP Polychlorinated Biphenyls - Westborough Lab</b>							
Aroclor 1016	ND		ug/kg	39.4	--	1	A
Aroclor 1221	ND		ug/kg	39.4	--	1	A
Aroclor 1232	ND		ug/kg	39.4	--	1	A
Aroclor 1242	ND		ug/kg	39.4	--	1	A
Aroclor 1248	ND		ug/kg	39.4	--	1	A
Aroclor 1254	ND		ug/kg	39.4	--	1	A
Aroclor 1260	ND		ug/kg	39.4	--	1	A
Aroclor 1262	ND		ug/kg	39.4	--	1	A
Aroclor 1268	ND		ug/kg	39.4	--	1	A
PCBs, Total	ND		ug/kg	39.4	--	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	59		30-150	A
Decachlorobiphenyl	71		30-150	A
2,4,5,6-Tetrachloro-m-xylene	64		30-150	B
Decachlorobiphenyl	76		30-150	B

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704637  
**Report Date:** 02/21/17

**SAMPLE RESULTS**

Lab ID: L1704637-02  
Client ID: VES-106 (5-7)  
Sample Location: MA  
Matrix: Soil  
Analytical Method: 97,8082A  
Analytical Date: 02/17/17 06:46  
Analyst: JW  
Percent Solids: 69%

Date Collected: 02/14/17 11:30  
Date Received: 02/14/17  
Field Prep: Not Specified  
Extraction Method: EPA 3540C  
Extraction Date: 02/16/17 00:30  
Cleanup Method: EPA 3665A  
Cleanup Date: 02/16/17  
Cleanup Method: EPA 3660B  
Cleanup Date: 02/16/17

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
<b>MCP Polychlorinated Biphenyls - Westborough Lab</b>							
Aroclor 1016	ND		ug/kg	47.6	--	1	A
Aroclor 1221	ND		ug/kg	47.6	--	1	A
Aroclor 1232	ND		ug/kg	47.6	--	1	A
Aroclor 1242	ND		ug/kg	47.6	--	1	A
Aroclor 1248	ND		ug/kg	47.6	--	1	A
Aroclor 1254	ND		ug/kg	47.6	--	1	A
Aroclor 1260	ND		ug/kg	47.6	--	1	A
Aroclor 1262	ND		ug/kg	47.6	--	1	A
Aroclor 1268	ND		ug/kg	47.6	--	1	A
PCBs, Total	ND		ug/kg	47.6	--	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	61		30-150	A
Decachlorobiphenyl	78		30-150	A
2,4,5,6-Tetrachloro-m-xylene	71		30-150	B
Decachlorobiphenyl	92		30-150	B

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704637  
**Report Date:** 02/21/17

**SAMPLE RESULTS**

Lab ID: L1704637-04  
Client ID: VES-110 (2-4)  
Sample Location: MA  
Matrix: Soil  
Analytical Method: 97,8082A  
Analytical Date: 02/17/17 07:00  
Analyst: JW  
Percent Solids: 80%

Date Collected: 02/14/17 09:50  
Date Received: 02/14/17  
Field Prep: Not Specified  
Extraction Method: EPA 3540C  
Extraction Date: 02/16/17 00:30  
Cleanup Method: EPA 3665A  
Cleanup Date: 02/16/17  
Cleanup Method: EPA 3660B  
Cleanup Date: 02/16/17

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
<b>MCP Polychlorinated Biphenyls - Westborough Lab</b>							
Aroclor 1016	ND		ug/kg	39.1	--	1	A
Aroclor 1221	ND		ug/kg	39.1	--	1	A
Aroclor 1232	ND		ug/kg	39.1	--	1	A
Aroclor 1242	ND		ug/kg	39.1	--	1	A
Aroclor 1248	ND		ug/kg	39.1	--	1	A
Aroclor 1254	ND		ug/kg	39.1	--	1	A
Aroclor 1260	ND		ug/kg	39.1	--	1	B
Aroclor 1262	ND		ug/kg	39.1	--	1	A
Aroclor 1268	ND		ug/kg	39.1	--	1	B
PCBs, Total	ND		ug/kg	39.1	--	1	B

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	68		30-150	A
Decachlorobiphenyl	59		30-150	A
2,4,5,6-Tetrachloro-m-xylene	71		30-150	B
Decachlorobiphenyl	75		30-150	B

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704637  
**Report Date:** 02/21/17

**SAMPLE RESULTS**

Lab ID: L1704637-05  
Client ID: VES-110 (12-14)  
Sample Location: MA  
Matrix: Soil  
Analytical Method: 97,8082A  
Analytical Date: 02/17/17 07:13  
Analyst: JW  
Percent Solids: 74%

Date Collected: 02/14/17 09:55  
Date Received: 02/14/17  
Field Prep: Not Specified  
Extraction Method: EPA 3540C  
Extraction Date: 02/16/17 00:30  
Cleanup Method: EPA 3665A  
Cleanup Date: 02/16/17  
Cleanup Method: EPA 3660B  
Cleanup Date: 02/16/17

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
<b>MCP Polychlorinated Biphenyls - Westborough Lab</b>							
Aroclor 1016	ND		ug/kg	44.8	--	1	A
Aroclor 1221	ND		ug/kg	44.8	--	1	A
Aroclor 1232	ND		ug/kg	44.8	--	1	A
Aroclor 1242	ND		ug/kg	44.8	--	1	A
Aroclor 1248	ND		ug/kg	44.8	--	1	A
Aroclor 1254	ND		ug/kg	44.8	--	1	A
Aroclor 1260	ND		ug/kg	44.8	--	1	A
Aroclor 1262	ND		ug/kg	44.8	--	1	A
Aroclor 1268	ND		ug/kg	44.8	--	1	A
PCBs, Total	ND		ug/kg	44.8	--	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	64		30-150	A
Decachlorobiphenyl	46		30-150	A
2,4,5,6-Tetrachloro-m-xylene	72		30-150	B
Decachlorobiphenyl	64		30-150	B

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704637  
**Report Date:** 02/21/17

**SAMPLE RESULTS**

Lab ID: L1704637-07  
Client ID: VES-111 (2-4)  
Sample Location: MA  
Matrix: Soil  
Analytical Method: 97,8082A  
Analytical Date: 02/17/17 07:27  
Analyst: JW  
Percent Solids: 74%

Date Collected: 02/14/17 11:40  
Date Received: 02/14/17  
Field Prep: Not Specified  
Extraction Method: EPA 3540C  
Extraction Date: 02/16/17 00:30  
Cleanup Method: EPA 3665A  
Cleanup Date: 02/16/17  
Cleanup Method: EPA 3660B  
Cleanup Date: 02/16/17

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
<b>MCP Polychlorinated Biphenyls - Westborough Lab</b>							
Aroclor 1016	ND		ug/kg	43.4	--	1	A
Aroclor 1221	ND		ug/kg	43.4	--	1	A
Aroclor 1232	ND		ug/kg	43.4	--	1	A
Aroclor 1242	ND		ug/kg	43.4	--	1	A
Aroclor 1248	ND		ug/kg	43.4	--	1	A
Aroclor 1254	ND		ug/kg	43.4	--	1	A
Aroclor 1260	ND		ug/kg	43.4	--	1	A
Aroclor 1262	ND		ug/kg	43.4	--	1	A
Aroclor 1268	ND		ug/kg	43.4	--	1	A
PCBs, Total	ND		ug/kg	43.4	--	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	59		30-150	A
Decachlorobiphenyl	45		30-150	A
2,4,5,6-Tetrachloro-m-xylene	63		30-150	B
Decachlorobiphenyl	58		30-150	B

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704637  
**Report Date:** 02/21/17

**SAMPLE RESULTS**

Lab ID: L1704637-08  
Client ID: VES-125 (0-2)  
Sample Location: MA  
Matrix: Soil  
Analytical Method: 97,8082A  
Analytical Date: 02/17/17 07:41  
Analyst: JW  
Percent Solids: 87%

Date Collected: 02/14/17 14:35  
Date Received: 02/14/17  
Field Prep: Not Specified  
Extraction Method: EPA 3540C  
Extraction Date: 02/16/17 00:30  
Cleanup Method: EPA 3665A  
Cleanup Date: 02/16/17  
Cleanup Method: EPA 3660B  
Cleanup Date: 02/16/17

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
<b>MCP Polychlorinated Biphenyls - Westborough Lab</b>							
Aroclor 1016	ND		ug/kg	37.3	--	1	A
Aroclor 1221	ND		ug/kg	37.3	--	1	A
Aroclor 1232	ND		ug/kg	37.3	--	1	A
Aroclor 1242	ND		ug/kg	37.3	--	1	A
Aroclor 1248	ND		ug/kg	37.3	--	1	A
Aroclor 1254	ND		ug/kg	37.3	--	1	A
Aroclor 1260	ND		ug/kg	37.3	--	1	A
Aroclor 1262	ND		ug/kg	37.3	--	1	A
Aroclor 1268	ND		ug/kg	37.3	--	1	A
PCBs, Total	ND		ug/kg	37.3	--	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	65		30-150	A
Decachlorobiphenyl	52		30-150	A
2,4,5,6-Tetrachloro-m-xylene	69		30-150	B
Decachlorobiphenyl	65		30-150	B

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704637  
**Report Date:** 02/21/17

### Method Blank Analysis Batch Quality Control

Analytical Method: 97,8082A  
Analytical Date: 02/17/17 03:19  
Analyst: HT

Extraction Method: EPA 3540C  
Extraction Date: 02/16/17 00:30  
Cleanup Method: EPA 3665A  
Cleanup Date: 02/16/17  
Cleanup Method: EPA 3660B  
Cleanup Date: 02/16/17

Parameter	Result	Qualifier	Units	RL	MDL	Column
MCP Polychlorinated Biphenyls - Westborough Lab for sample(s): 01-02,04-05,07-08 Batch: WG978226-1						
Aroclor 1016	ND		ug/kg	32.1	--	A
Aroclor 1221	ND		ug/kg	32.1	--	A
Aroclor 1232	ND		ug/kg	32.1	--	A
Aroclor 1242	ND		ug/kg	32.1	--	A
Aroclor 1248	ND		ug/kg	32.1	--	A
Aroclor 1254	ND		ug/kg	32.1	--	A
Aroclor 1260	ND		ug/kg	32.1	--	A
Aroclor 1262	ND		ug/kg	32.1	--	A
Aroclor 1268	ND		ug/kg	32.1	--	A
PCBs, Total	ND		ug/kg	32.1	--	A

Surrogate	%Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	80		30-150	A
Decachlorobiphenyl	89		30-150	A
2,4,5,6-Tetrachloro-m-xylene	87		30-150	B
Decachlorobiphenyl	81		30-150	B

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704637  
**Report Date:** 02/21/17

<b>Parameter</b>	<i>LCS</i> %Recovery	<i>Qual</i>	<i>LCSD</i> %Recovery	<i>Qual</i>	<i>%Recovery</i> <i>Limits</i>	<i>RPD</i>	<i>Qual</i>	<i>RPD</i> <i>Limits</i>	<i>Column</i>
MCP Polychlorinated Biphenyls - Westborough Lab Associated sample(s): 01-02,04-05,07-08 Batch: WG978226-2 WG978226-3									
Aroclor 1016	92		86		40-140	7		30	A
Aroclor 1260	110		100		40-140	10		30	A

<b>Surrogate</b>	<i>LCS</i> %Recovery	<i>Qual</i>	<i>LCSD</i> %Recovery	<i>Qual</i>	<i>Acceptance</i> <i>Criteria</i>	<i>Column</i>
2,4,5,6-Tetrachloro-m-xylene						
Decachlorobiphenyl	83		75		30-150	A
2,4,5,6-Tetrachloro-m-xylene	91		81		30-150	A
Decachlorobiphenyl	87		83		30-150	B
2,4,5,6-Tetrachloro-m-xylene	82		76		30-150	B

# **PESTICIDES**



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704637  
**Report Date:** 02/21/17

**SAMPLE RESULTS**

Lab ID: L1704637-03  
Client ID: VES-110 (0-2)  
Sample Location: MA  
Matrix: Soil  
Analytical Method: 97,8081B  
Analytical Date: 02/16/17 23:29  
Analyst: RL  
Percent Solids: 62%

Date Collected: 02/14/17 09:45  
Date Received: 02/14/17  
Field Prep: Not Specified  
Extraction Method: EPA 3546  
Extraction Date: 02/15/17 07:50  
Cleanup Method: EPA 3620B  
Cleanup Date: 02/15/17

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
<b>MCP Organochlorine Pesticides - Westborough Lab</b>							
Delta-BHC	ND		ug/kg	12.8	--	1	A
Lindane	ND		ug/kg	4.27	--	1	A
Alpha-BHC	ND		ug/kg	5.33	--	1	A
Beta-BHC	ND		ug/kg	12.8	--	1	A
Heptachlor	ND		ug/kg	6.40	--	1	A
Aldrin	ND		ug/kg	12.8	--	1	A
Heptachlor epoxide	ND		ug/kg	24.0	--	1	A
Endrin	ND		ug/kg	5.33	--	1	A
Endrin ketone	ND		ug/kg	12.8	--	1	A
Dieldrin	ND		ug/kg	8.00	--	1	A
4,4'-DDE	ND		ug/kg	12.8	--	1	A
4,4'-DDD	ND		ug/kg	12.8	--	1	A
4,4'-DDT	ND		ug/kg	24.0	--	1	A
Endosulfan I	ND		ug/kg	12.8	--	1	A
Endosulfan II	ND		ug/kg	12.8	--	1	A
Endosulfan sulfate	ND		ug/kg	5.33	--	1	A
Methoxychlor	ND		ug/kg	24.0	--	1	A
Chlordane	ND		ug/kg	104	--	1	A
Hexachlorobenzene	ND		ug/kg	12.8	--	1	A
Toxaphene	ND		ug/kg	240	--	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	84		30-150	B
Decachlorobiphenyl	69		30-150	B
2,4,5,6-Tetrachloro-m-xylene	89		30-150	A
Decachlorobiphenyl	66		30-150	A

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704637  
**Report Date:** 02/21/17

**SAMPLE RESULTS**

Lab ID: L1704637-06  
Client ID: VES-111 (0-2)  
Sample Location: MA  
Matrix: Soil  
Analytical Method: 97,8081B  
Analytical Date: 02/16/17 23:41  
Analyst: RL  
Percent Solids: 79%

Date Collected: 02/14/17 11:35  
Date Received: 02/14/17  
Field Prep: Not Specified  
Extraction Method: EPA 3546  
Extraction Date: 02/15/17 07:50  
Cleanup Method: EPA 3620B  
Cleanup Date: 02/15/17

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
<b>MCP Organochlorine Pesticides - Westborough Lab</b>							
Delta-BHC	ND		ug/kg	9.95	--	1	A
Lindane	ND		ug/kg	3.32	--	1	A
Alpha-BHC	ND		ug/kg	4.15	--	1	A
Beta-BHC	ND		ug/kg	9.95	--	1	A
Heptachlor	ND		ug/kg	4.98	--	1	A
Aldrin	ND		ug/kg	9.95	--	1	A
Heptachlor epoxide	ND		ug/kg	18.7	--	1	A
Endrin	ND		ug/kg	4.15	--	1	A
Endrin ketone	ND		ug/kg	9.95	--	1	A
Dieldrin	ND		ug/kg	6.22	--	1	A
4,4'-DDE	20.3		ug/kg	9.95	--	1	A
4,4'-DDD	ND		ug/kg	9.95	--	1	A
4,4'-DDT	33.7		ug/kg	18.7	--	1	B
Endosulfan I	ND		ug/kg	9.95	--	1	A
Endosulfan II	ND		ug/kg	9.95	--	1	A
Endosulfan sulfate	ND		ug/kg	4.15	--	1	A
Methoxychlor	ND		ug/kg	18.7	--	1	A
Chlordane	ND		ug/kg	80.9	--	1	A
Hexachlorobenzene	ND		ug/kg	9.95	--	1	A
Toxaphene	ND		ug/kg	187	--	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	81		30-150	B
Decachlorobiphenyl	70		30-150	B
2,4,5,6-Tetrachloro-m-xylene	85		30-150	A
Decachlorobiphenyl	66		30-150	A

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704637  
**Report Date:** 02/21/17

### Method Blank Analysis Batch Quality Control

Analytical Method: 97,8081B  
Analytical Date: 02/16/17 14:54  
Analyst: RL

Extraction Method: EPA 3546  
Extraction Date: 02/15/17 07:50  
Cleanup Method: EPA 3620B  
Cleanup Date: 02/15/17

Parameter	Result	Qualifier	Units	RL	MDL	Column
MCP Organochlorine Pesticides - Westborough Lab for sample(s): 03,06 Batch: WG977965-1						
Delta-BHC	ND		ug/kg	7.71	--	A
Lindane	ND		ug/kg	2.57	--	A
Alpha-BHC	ND		ug/kg	3.21	--	A
Beta-BHC	ND		ug/kg	7.71	--	A
Heptachlor	ND		ug/kg	3.85	--	A
Aldrin	ND		ug/kg	7.71	--	A
Heptachlor epoxide	ND		ug/kg	14.4	--	A
Endrin	ND		ug/kg	3.21	--	A
Endrin ketone	ND		ug/kg	7.71	--	A
Dieldrin	ND		ug/kg	4.82	--	A
4,4'-DDE	ND		ug/kg	7.71	--	A
4,4'-DDD	ND		ug/kg	7.71	--	A
4,4'-DDT	ND		ug/kg	14.4	--	A
Endosulfan I	ND		ug/kg	7.71	--	A
Endosulfan II	ND		ug/kg	7.71	--	A
Endosulfan sulfate	ND		ug/kg	3.21	--	A
Methoxychlor	ND		ug/kg	14.4	--	A
Chlordane	ND		ug/kg	62.6	--	A
Hexachlorobenzene	ND		ug/kg	7.71	--	A
Toxaphene	ND		ug/kg	144	--	A

Surrogate	%Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	93		30-150	B
Decachlorobiphenyl	93		30-150	B
2,4,5,6-Tetrachloro-m-xylene	100		30-150	A
Decachlorobiphenyl	85		30-150	A



# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704637  
**Report Date:** 02/21/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
MCP Organochlorine Pesticides - Westborough Lab Associated sample(s): 03,06 Batch: WG977965-2 WG977965-3									
Delta-BHC	101		76		40-140	28		30	A
Lindane	104		79		40-140	27		30	A
Alpha-BHC	116		90		40-140	25		30	A
Beta-BHC	114		89		40-140	25		30	A
Heptachlor	111		83		40-140	29		30	A
Aldrin	125		93		40-140	29		30	A
Heptachlor epoxide	119		88		40-140	30		30	A
Endrin	123		89		40-140	32	Q	30	A
Endrin ketone	94		71		40-140	28		30	A
Dieldrin	127		95		40-140	29		30	A
4,4'-DDE	126		89		40-140	34	Q	30	A
4,4'-DDD	123		86		40-140	35	Q	30	A
4,4'-DDT	116		82		40-140	34	Q	30	A
Endosulfan I	122		87		40-140	33	Q	30	A
Endosulfan II	121		86		40-140	34	Q	30	A
Endosulfan sulfate	64		50		40-140	25		30	A
Methoxychlor	115		85		40-140	30		30	A
Hexachlorobenzene	100		79		40-140	23		30	A

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704637  
**Report Date:** 02/21/17

<b>Parameter</b>	<i>LCS</i> <i>%Recovery</i>	<i>Qual</i>	<i>LCSD</i> <i>%Recovery</i>	<i>Qual</i>	<i>%Recovery</i> <i>Limits</i>	<i>RPD</i>	<i>Qual</i>	<i>RPD</i> <i>Limits</i>
MCP Organochlorine Pesticides - Westborough Lab Associated sample(s): 03,06 Batch: WG977965-2 WG977965-3								
<b>Surrogate</b>	<i>LCS</i> <i>%Recovery</i>	<i>Qual</i>	<i>LCSD</i> <i>%Recovery</i>	<i>Qual</i>	<i>Acceptance</i> <i>Criteria</i>		<i>Column</i>	
2,4,5,6-Tetrachloro-m-xylene	100		79		30-150		B	
Decachlorobiphenyl	95		70		30-150		B	
2,4,5,6-Tetrachloro-m-xylene	104		81		30-150		A	
Decachlorobiphenyl	88		69		30-150		A	

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704637  
**Report Date:** 02/21/17

<b>Parameter</b>	<i>LCS</i> %Recovery	<i>Qual</i>	<i>LCSD</i> %Recovery	<i>Qual</i>	<i>%Recovery</i> <i>Limits</i>	<i>RPD</i>	<i>Qual</i>	<i>RPD</i> <i>Limits</i>	<i>Column</i>
MCP Organochlorine Pesticides - Westborough Lab Associated sample(s): 03,06 Batch: WG977965-4 WG977965-5									
Toxaphene	95		97		40-140	2		30	A

<b>Surrogate</b>	<i>LCS</i> %Recovery	<i>Qual</i>	<i>LCSD</i> %Recovery	<i>Qual</i>	<i>Acceptance</i> <i>Criteria</i>	<i>Column</i>
2,4,5,6-Tetrachloro-m-xylene	81		81		30-150	B
Decachlorobiphenyl	74		78		30-150	B
2,4,5,6-Tetrachloro-m-xylene	85		84		30-150	A
Decachlorobiphenyl	64		64		30-150	A

## METALS



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704637  
**Report Date:** 02/21/17

**SAMPLE RESULTS**

Lab ID: L1704637-01 Date Collected: 02/14/17 09:00  
Client ID: VES-104 (2-4) Date Received: 02/14/17  
Sample Location: MA Field Prep: Not Specified  
Matrix: Soil  
Percent Solids: 83%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
<b>MCP Total Metals - Mansfield Lab</b>											
Arsenic, Total	12		mg/kg	0.47	--	1	02/16/17 22:00	02/17/17 00:50	EPA 3050B	97,6010C	MC
Barium, Total	260		mg/kg	0.47	--	1	02/16/17 22:00	02/17/17 00:50	EPA 3050B	97,6010C	MC
Cadmium, Total	ND		mg/kg	0.47	--	1	02/16/17 22:00	02/17/17 00:50	EPA 3050B	97,6010C	MC
Chromium, Total	12		mg/kg	0.47	--	1	02/16/17 22:00	02/17/17 00:50	EPA 3050B	97,6010C	MC
Lead, Total	270		mg/kg	2.3	--	1	02/16/17 22:00	02/17/17 00:50	EPA 3050B	97,6010C	MC
Mercury, Total	0.926		mg/kg	0.076	--	1	02/15/17 08:20	02/16/17 11:31	EPA 7471B	97,7471B	BV
Selenium, Total	ND		mg/kg	2.3	--	1	02/16/17 22:00	02/17/17 00:50	EPA 3050B	97,6010C	MC
Silver, Total	ND		mg/kg	0.47	--	1	02/16/17 22:00	02/17/17 00:50	EPA 3050B	97,6010C	MC



Project Name: EAST BOSTON

Project Number: 43068

Lab Number: L1704637

Report Date: 02/21/17

**SAMPLE RESULTS**

Lab ID:	L1704637-02	Date Collected:	02/14/17 11:30
Client ID:	VES-106 (5-7)	Date Received:	02/14/17
Sample Location:	MA	Field Prep:	Not Specified
Matrix:	Soil		
Percent Solids:	69%		

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
<b>MCP Total Metals - Mansfield Lab</b>											
Arsenic, Total	9.4		mg/kg	0.58	--	1	02/16/17 22:00	02/17/17 00:55	EPA 3050B	97,6010C	MC
Barium, Total	140		mg/kg	0.58	--	1	02/16/17 22:00	02/17/17 00:55	EPA 3050B	97,6010C	MC
Cadmium, Total	ND		mg/kg	0.58	--	1	02/16/17 22:00	02/17/17 00:55	EPA 3050B	97,6010C	MC
Chromium, Total	15		mg/kg	0.58	--	1	02/16/17 22:00	02/17/17 00:55	EPA 3050B	97,6010C	MC
Lead, Total	3700		mg/kg	2.9	--	1	02/16/17 22:00	02/17/17 00:55	EPA 3050B	97,6010C	MC
Mercury, Total	0.253		mg/kg	0.098	--	1	02/15/17 08:20	02/16/17 11:37	EPA 7471B	97,7471B	BV
Selenium, Total	ND		mg/kg	2.9	--	1	02/16/17 22:00	02/17/17 00:55	EPA 3050B	97,6010C	MC
Silver, Total	ND		mg/kg	0.58	--	1	02/16/17 22:00	02/17/17 00:55	EPA 3050B	97,6010C	MC



Project Name: EAST BOSTON

Project Number: 43068

Lab Number: L1704637

Report Date: 02/21/17

**SAMPLE RESULTS**

Lab ID:	L1704637-04	Date Collected:	02/14/17 09:50
Client ID:	VES-110 (2-4)	Date Received:	02/14/17
Sample Location:	MA	Field Prep:	Not Specified
Matrix:	Soil		
Percent Solids:	80%		

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
<b>MCP Total Metals - Mansfield Lab</b>											
Arsenic, Total	3.8		mg/kg	0.49	--	1	02/16/17 22:00	02/17/17 00:58	EPA 3050B	97,6010C	MC
Barium, Total	30		mg/kg	0.49	--	1	02/16/17 22:00	02/17/17 00:58	EPA 3050B	97,6010C	MC
Cadmium, Total	ND		mg/kg	0.49	--	1	02/16/17 22:00	02/17/17 00:58	EPA 3050B	97,6010C	MC
Chromium, Total	14		mg/kg	0.49	--	1	02/16/17 22:00	02/17/17 00:58	EPA 3050B	97,6010C	MC
Lead, Total	38		mg/kg	2.5	--	1	02/16/17 22:00	02/17/17 00:58	EPA 3050B	97,6010C	MC
Mercury, Total	0.181		mg/kg	0.078	--	1	02/15/17 08:20	02/16/17 11:38	EPA 7471B	97,7471B	BV
Selenium, Total	ND		mg/kg	2.5	--	1	02/16/17 22:00	02/17/17 00:58	EPA 3050B	97,6010C	MC
Silver, Total	ND		mg/kg	0.49	--	1	02/16/17 22:00	02/17/17 00:58	EPA 3050B	97,6010C	MC



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704637  
**Report Date:** 02/21/17

**SAMPLE RESULTS**

Lab ID: L1704637-05  
Client ID: VES-110 (12-14)  
Sample Location: MA  
Matrix: Soil  
Percent Solids: 74%

Date Collected: 02/14/17 09:55  
Date Received: 02/14/17  
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
<b>MCP Total Metals - Mansfield Lab</b>											
Arsenic, Total	3.8		mg/kg	0.52	--	1	02/16/17 22:00	02/17/17 01:02	EPA 3050B	97,6010C	MC
Barium, Total	24		mg/kg	0.52	--	1	02/16/17 22:00	02/17/17 01:02	EPA 3050B	97,6010C	MC
Cadmium, Total	ND		mg/kg	0.52	--	1	02/16/17 22:00	02/17/17 01:02	EPA 3050B	97,6010C	MC
Chromium, Total	18		mg/kg	0.52	--	1	02/16/17 22:00	02/17/17 01:02	EPA 3050B	97,6010C	MC
Lead, Total	11		mg/kg	2.6	--	1	02/16/17 22:00	02/17/17 01:02	EPA 3050B	97,6010C	MC
Mercury, Total	ND		mg/kg	0.088	--	1	02/15/17 08:20	02/16/17 11:40	EPA 7471B	97,7471B	BV
Selenium, Total	ND		mg/kg	2.6	--	1	02/16/17 22:00	02/17/17 01:02	EPA 3050B	97,6010C	MC
Silver, Total	ND		mg/kg	0.52	--	1	02/16/17 22:00	02/17/17 01:02	EPA 3050B	97,6010C	MC

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704637  
**Report Date:** 02/21/17

**SAMPLE RESULTS**

Lab ID: L1704637-07 Date Collected: 02/14/17 11:40  
Client ID: VES-111 (2-4) Date Received: 02/14/17  
Sample Location: MA Field Prep: Not Specified  
Matrix: Soil  
Percent Solids: 74%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
<b>MCP Total Metals - Mansfield Lab</b>											
Arsenic, Total	13		mg/kg	0.52	--	1	02/16/17 22:00	02/17/17 01:06	EPA 3050B	97,6010C	MC
Barium, Total	76		mg/kg	0.52	--	1	02/16/17 22:00	02/17/17 01:06	EPA 3050B	97,6010C	MC
Cadmium, Total	ND		mg/kg	0.52	--	1	02/16/17 22:00	02/17/17 01:06	EPA 3050B	97,6010C	MC
Chromium, Total	33		mg/kg	0.52	--	1	02/16/17 22:00	02/17/17 01:06	EPA 3050B	97,6010C	MC
Lead, Total	140		mg/kg	2.6	--	1	02/16/17 22:00	02/17/17 01:06	EPA 3050B	97,6010C	MC
Mercury, Total	0.586		mg/kg	0.086	--	1	02/15/17 08:20	02/16/17 11:42	EPA 7471B	97,7471B	BV
Selenium, Total	ND		mg/kg	2.6	--	1	02/16/17 22:00	02/17/17 01:06	EPA 3050B	97,6010C	MC
Silver, Total	0.56		mg/kg	0.52	--	1	02/16/17 22:00	02/17/17 01:06	EPA 3050B	97,6010C	MC



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704637  
**Report Date:** 02/21/17

**SAMPLE RESULTS**

Lab ID: L1704637-08 Date Collected: 02/14/17 14:35  
Client ID: VES-125 (0-2) Date Received: 02/14/17  
Sample Location: MA Field Prep: Not Specified  
Matrix: Soil  
Percent Solids: 87%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
<b>MCP Total Metals - Mansfield Lab</b>											
Arsenic, Total	3.3		mg/kg	0.46	--	1	02/16/17 22:00	02/17/17 01:27	EPA 3050B	97,6010C	MC
Barium, Total	110		mg/kg	0.46	--	1	02/16/17 22:00	02/17/17 01:27	EPA 3050B	97,6010C	MC
Cadmium, Total	ND		mg/kg	0.46	--	1	02/16/17 22:00	02/17/17 01:27	EPA 3050B	97,6010C	MC
Chromium, Total	13		mg/kg	0.46	--	1	02/16/17 22:00	02/17/17 01:27	EPA 3050B	97,6010C	MC
Lead, Total	160		mg/kg	2.3	--	1	02/16/17 22:00	02/17/17 01:27	EPA 3050B	97,6010C	MC
Mercury, Total	0.169		mg/kg	0.072	--	1	02/15/17 08:20	02/16/17 11:44	EPA 7471B	97,7471B	BV
Selenium, Total	ND		mg/kg	2.3	--	1	02/16/17 22:00	02/17/17 01:27	EPA 3050B	97,6010C	MC
Silver, Total	ND		mg/kg	0.46	--	1	02/16/17 22:00	02/17/17 01:27	EPA 3050B	97,6010C	MC



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704637  
**Report Date:** 02/21/17

## Method Blank Analysis Batch Quality Control

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
MCP Total Metals - Mansfield Lab for sample(s): 01-02,04-05,07-08 Batch: WG977956-1									
Mercury, Total	ND	mg/kg	0.083	--	1	02/15/17 08:20	02/16/17 09:50	97,7471B	BV

### Prep Information

Digestion Method: EPA 7471B

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
MCP Total Metals - Mansfield Lab for sample(s): 01-02,04-05,07-08 Batch: WG978557-1									
Arsenic, Total	ND	mg/kg	0.40	--	1	02/16/17 22:00	02/17/17 00:38	97,6010C	MC
Barium, Total	ND	mg/kg	0.40	--	1	02/16/17 22:00	02/17/17 00:38	97,6010C	MC
Cadmium, Total	ND	mg/kg	0.40	--	1	02/16/17 22:00	02/17/17 00:38	97,6010C	MC
Chromium, Total	ND	mg/kg	0.40	--	1	02/16/17 22:00	02/17/17 00:38	97,6010C	MC
Lead, Total	ND	mg/kg	2.0	--	1	02/16/17 22:00	02/17/17 00:38	97,6010C	MC
Selenium, Total	ND	mg/kg	2.0	--	1	02/16/17 22:00	02/17/17 00:38	97,6010C	MC
Silver, Total	ND	mg/kg	0.40	--	1	02/16/17 22:00	02/17/17 00:38	97,6010C	MC

### Prep Information

Digestion Method: EPA 3050B

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704637  
**Report Date:** 02/21/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Total Metals - Mansfield Lab Associated sample(s): 01-02,04-05,07-08 Batch: WG977956-2 WG977956-3 SRM Lot Number: D091-540								
Mercury, Total	104		114		72-128	9		30
MCP Total Metals - Mansfield Lab Associated sample(s): 01-02,04-05,07-08 Batch: WG978557-2 WG978557-3 SRM Lot Number: D091-540								
Arsenic, Total	103		83		80-121	22		30
Barium, Total	100		86		84-117	15		30
Cadmium, Total	106		104		83-117	2		30
Chromium, Total	98		84		80-119	15		30
Lead, Total	96		82		82-118	16		30
Selenium, Total	101		84		79-121	18		30
Silver, Total	93		86		76-124	8		30

# **INORGANICS & MISCELLANEOUS**



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704637  
**Report Date:** 02/21/17

## SAMPLE RESULTS

Lab ID: L1704637-01  
Client ID: VES-104 (2-4)  
Sample Location: MA  
Matrix: Soil

Date Collected: 02/14/17 09:00  
Date Received: 02/14/17  
Field Prep: Not Specified

### Test Material Information

Source of Material: Unknown  
Description of Material: Non-Metallic - Damp Soil  
Particle Size: Medium  
Preliminary Burning Time (sec): 120

Parameter	Result	Date Analyzed	Analytical Method	Analyst
Ignitability of Solids - Westborough Lab				
Ignitability	NI	02/15/17 11:40	1,1030	AB



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704637  
**Report Date:** 02/21/17

## SAMPLE RESULTS

Lab ID: L1704637-02  
Client ID: VES-106 (5-7)  
Sample Location: MA  
Matrix: Soil

Date Collected: 02/14/17 11:30  
Date Received: 02/14/17  
Field Prep: Not Specified

### Test Material Information

Source of Material: Unknown  
Description of Material: Non-Metallic - Wet Soil  
Particle Size: Coarse  
Preliminary Burning Time (sec): 120

Parameter	Result	Date Analyzed	Analytical Method	Analyst
Ignitability of Solids - Westborough Lab				
Ignitability	NI	02/15/17 11:40	1,1030	AB



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704637  
**Report Date:** 02/21/17

## SAMPLE RESULTS

Lab ID: L1704637-04  
Client ID: VES-110 (2-4)  
Sample Location: MA  
Matrix: Soil

Date Collected: 02/14/17 09:50  
Date Received: 02/14/17  
Field Prep: Not Specified

### Test Material Information

Source of Material: Unknown  
Description of Material: Non-Metallic - Damp Soil  
Particle Size: Medium  
Preliminary Burning Time (sec): 120

Parameter	Result	Date Analyzed	Analytical Method	Analyst
Ignitability of Solids - Westborough Lab				
Ignitability	NI	02/15/17 11:40	1,1030	AB



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704637  
**Report Date:** 02/21/17

## SAMPLE RESULTS

Lab ID: L1704637-05  
Client ID: VES-110 (12-14)  
Sample Location: MA  
Matrix: Soil

Date Collected: 02/14/17 09:55  
Date Received: 02/14/17  
Field Prep: Not Specified

### Test Material Information

Source of Material: Unknown  
Description of Material: Non-Metallic - Damp Clay  
Particle Size: Fine  
Preliminary Burning Time (sec): 120

Parameter	Result	Date Analyzed	Analytical Method	Analyst
Ignitability of Solids - Westborough Lab				
Ignitability	NI	02/15/17 11:40	1,1030	AB



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704637  
**Report Date:** 02/21/17

## SAMPLE RESULTS

Lab ID: L1704637-07  
Client ID: VES-111 (2-4)  
Sample Location: MA  
Matrix: Soil

Date Collected: 02/14/17 11:40  
Date Received: 02/14/17  
Field Prep: Not Specified

### Test Material Information

Source of Material: Unknown  
Description of Material: Non-Metallic - Damp Soil  
Particle Size: Medium  
Preliminary Burning Time (sec): 120

Parameter	Result	Date Analyzed	Analytical Method	Analyst
Ignitability of Solids - Westborough Lab				
Ignitability	NI	02/15/17 11:40	1,1030	AB



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704637  
**Report Date:** 02/21/17

## SAMPLE RESULTS

Lab ID: L1704637-08  
Client ID: VES-125 (0-2)  
Sample Location: MA  
Matrix: Soil

Date Collected: 02/14/17 14:35  
Date Received: 02/14/17  
Field Prep: Not Specified

### Test Material Information

Source of Material: Unknown  
Description of Material: Non-Metallic - Damp Sand  
Particle Size: Medium  
Preliminary Burning Time (sec): 120

Parameter	Result	Date Analyzed	Analytical Method	Analyst
Ignitability of Solids - Westborough Lab				
Ignitability	NI	02/16/17 11:12	1,1030	AB



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704637  
**Report Date:** 02/21/17

### SAMPLE RESULTS

Lab ID:	L1704637-01	Date Collected:	02/14/17 09:00
Client ID:	VES-104 (2-4)	Date Received:	02/14/17
Sample Location:	MA	Field Prep:	Not Specified
Matrix:	Soil		

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>General Chemistry - Westborough Lab</b>										
Specific Conductance @ 25 C	74		umhos/cm	10	--	1	-	02/14/17 21:45	1,9050A	AS
Solids, Total	82.5	%		0.100	NA	1	-	02/16/17 14:28	121,2540G	RI
pH (H)	7.6	SU		-	NA	1	-	02/14/17 21:05	1,9045D	AS
Cyanide, Reactive	ND		mg/kg	10	--	1	02/16/17 22:20	02/16/17 23:24	1,7.3	TL
Sulfide, Reactive	ND		mg/kg	10	--	1	02/16/17 22:20	02/16/17 23:16	1,7.3	TL



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704637  
**Report Date:** 02/21/17

### SAMPLE RESULTS

Lab ID: L1704637-02  
Client ID: VES-106 (5-7)  
Sample Location: MA  
Matrix: Soil

Date Collected: 02/14/17 11:30  
Date Received: 02/14/17  
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>General Chemistry - Westborough Lab</b>										
Specific Conductance @ 25 C	150		umhos/cm	10	--	1	-	02/14/17 21:45	1,9050A	AS
Solids, Total	68.6	%		0.100	NA	1	-	02/16/17 14:28	121,2540G	RI
pH (H)	9.4	SU		-	NA	1	-	02/14/17 21:05	1,9045D	AS
Cyanide, Reactive	ND		mg/kg	10	--	1	02/16/17 22:20	02/16/17 23:24	1,7.3	TL
Sulfide, Reactive	ND		mg/kg	10	--	1	02/16/17 22:20	02/16/17 23:16	1,7.3	TL



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704637  
**Report Date:** 02/21/17

### SAMPLE RESULTS

Lab ID: L1704637-03  
Client ID: VES-110 (0-2)  
Sample Location: MA  
Matrix: Soil

Date Collected: 02/14/17 09:45  
Date Received: 02/14/17  
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>General Chemistry - Westborough Lab</b>										
Solids, Total	61.6		%	0.100	NA	1	-	02/16/17 14:28	121,2540G	RI



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704637  
**Report Date:** 02/21/17

### SAMPLE RESULTS

Lab ID: L1704637-04  
Client ID: VES-110 (2-4)  
Sample Location: MA  
Matrix: Soil

Date Collected: 02/14/17 09:50  
Date Received: 02/14/17  
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>General Chemistry - Westborough Lab</b>										
Specific Conductance @ 25 C	41		umhos/cm	10	--	1	-	02/14/17 21:45	1,9050A	AS
Solids, Total	80.4	%		0.100	NA	1	-	02/16/17 14:28	121,2540G	RI
pH (H)	7.0	SU		-	NA	1	-	02/14/17 21:05	1,9045D	AS
Cyanide, Reactive	ND		mg/kg	10	--	1	02/16/17 22:20	02/16/17 23:24	1,7.3	TL
Sulfide, Reactive	ND		mg/kg	10	--	1	02/16/17 22:20	02/16/17 23:16	1,7.3	TL



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704637  
**Report Date:** 02/21/17

### SAMPLE RESULTS

Lab ID: L1704637-05  
Client ID: VES-110 (12-14)  
Sample Location: MA  
Matrix: Soil

Date Collected: 02/14/17 09:55  
Date Received: 02/14/17  
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>General Chemistry - Westborough Lab</b>										
Specific Conductance @ 25 C	780		umhos/cm	10	--	1	-	02/14/17 21:45	1,9050A	AS
Solids, Total	74.1	%		0.100	NA	1	-	02/16/17 14:28	121,2540G	RI
pH (H)	8.1	SU		-	NA	1	-	02/14/17 21:05	1,9045D	AS
Cyanide, Reactive	ND		mg/kg	10	--	1	02/16/17 22:20	02/16/17 23:24	1,7.3	TL
Sulfide, Reactive	ND		mg/kg	10	--	1	02/16/17 22:20	02/16/17 23:16	1,7.3	TL



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704637  
**Report Date:** 02/21/17

### SAMPLE RESULTS

Lab ID: L1704637-06  
Client ID: VES-111 (0-2)  
Sample Location: MA  
Matrix: Soil

Date Collected: 02/14/17 11:35  
Date Received: 02/14/17  
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>General Chemistry - Westborough Lab</b>										
Solids, Total	78.6		%	0.100	NA	1	-	02/16/17 14:28	121,2540G	RI



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704637  
**Report Date:** 02/21/17

### SAMPLE RESULTS

Lab ID: L1704637-07  
Client ID: VES-111 (2-4)  
Sample Location: MA  
Matrix: Soil

Date Collected: 02/14/17 11:40  
Date Received: 02/14/17  
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>General Chemistry - Westborough Lab</b>										
Specific Conductance @ 25 C	25		umhos/cm	10	--	1	-	02/14/17 21:45	1,9050A	AS
Solids, Total	74.1	%		0.100	NA	1	-	02/16/17 14:28	121,2540G	RI
pH (H)	5.8	SU		-	NA	1	-	02/14/17 21:05	1,9045D	AS
Cyanide, Reactive	ND		mg/kg	10	--	1	02/16/17 22:20	02/16/17 23:24	1,7.3	TL
Sulfide, Reactive	ND		mg/kg	10	--	1	02/16/17 22:20	02/16/17 23:16	1,7.3	TL



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704637  
**Report Date:** 02/21/17

### SAMPLE RESULTS

Lab ID:	L1704637-08	Date Collected:	02/14/17 14:35
Client ID:	VES-125 (0-2)	Date Received:	02/14/17
Sample Location:	MA	Field Prep:	Not Specified
Matrix:	Soil		

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>General Chemistry - Westborough Lab</b>										
Specific Conductance @ 25 C	75		umhos/cm	10	--	1	-	02/14/17 21:45	1,9050A	AS
Solids, Total	87.2	%		0.100	NA	1	-	02/16/17 14:28	121,2540G	RI
pH (H)	8.0	SU		-	NA	1	-	02/14/17 21:05	1,9045D	AS
Cyanide, Reactive	ND		mg/kg	10	--	1	02/16/17 22:20	02/16/17 23:24	1,7.3	TL
Sulfide, Reactive	ND		mg/kg	10	--	1	02/16/17 22:20	02/16/17 23:17	1,7.3	TL



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704637  
**Report Date:** 02/21/17

**Method Blank Analysis**  
**Batch Quality Control**

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab for sample(s): 01-02,04-05,07-08 Batch: WG978518-1									
Cyanide, Reactive	ND	mg/kg	10	--	1	02/16/17 22:20	02/16/17 23:23	1,7.3	TL
General Chemistry - Westborough Lab for sample(s): 01-02,04-05,07-08 Batch: WG978519-1									
Sulfide, Reactive	ND	mg/kg	10	--	1	02/16/17 22:20	02/16/17 23:14	1,7.3	TL



# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704637  
**Report Date:** 02/21/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01-02,04-05,07-08 Batch: WG977854-1								
pH	101	-	-	-	99-101	-	-	-
General Chemistry - Westborough Lab Associated sample(s): 01-02,04-05,07-08 Batch: WG977857-1								
Specific Conductance	99	-	-	-	99-101	-	-	-
General Chemistry - Westborough Lab Associated sample(s): 01-02,04-05,07-08 Batch: WG978518-2								
Cyanide, Reactive	40	-	-	-	30-125	-	-	40
General Chemistry - Westborough Lab Associated sample(s): 01-02,04-05,07-08 Batch: WG978519-2								
Sulfide, Reactive	94	-	-	-	60-125	-	-	40

**Lab Duplicate Analysis**  
Batch Quality Control

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704637  
**Report Date:** 02/21/17

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01-02,04-05,07-08 QC Batch ID: WG978518-3 QC Sample: L1704637-08 Client ID: VES-125 (0-2)						
Cyanide, Reactive	ND	ND	mg/kg	NC		40
General Chemistry - Westborough Lab Associated sample(s): 01-02,04-05,07-08 QC Batch ID: WG978519-3 QC Sample: L1704637-08 Client ID: VES-125 (0-2)						
Sulfide, Reactive	ND	ND	mg/kg	NC		40

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704637  
**Report Date:** 02/21/17

### Sample Receipt and Container Information

Were project specific reporting limits specified? YES

**Reagent H2O Preserved Vials Frozen on:** 02/14/2017 20:35

#### Cooler Information Custody Seal

##### Cooler

A Absent

#### Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L1704637-01A	Vial MeOH preserved	A	N/A	3.5	Y	Absent	VPH-10(28),MCP-8260HLW-10(14)
L1704637-01B	Vial water preserved	A	N/A	3.5	Y	Absent	MCP-8260HLW-10(14)
L1704637-01C	Vial water preserved	A	N/A	3.5	Y	Absent	MCP-8260HLW-10(14)
L1704637-01D	Glass 500ml/16oz unpreserved	A	N/A	3.5	Y	Absent	IGNIT-1030(14),REACTS(14),MCP-8270-10(14),TS(7),MCP-8082-10-3540C(365),PH-9045(1),REACTCN(14),COND-9050(28),EPH-DELUX-10(14)
L1704637-01F	Metals Only - Glass 60mL/2oz unp	A	N/A	3.5	Y	Absent	MCP-CR-6010T-10(180),MCP-AS-6010T-10(180),MCP-7471T-10(28),MCP-CD-6010T-10(180),MCP-AG-6010T-10(180),MCP-SE-6010T-10(180),MCP-BA-6010T-10(180),MCP-PB-6010T-10(180)
L1704637-02A	Vial MeOH preserved	A	N/A	3.5	Y	Absent	VPH-10(28),MCP-8260HLW-10(14)
L1704637-02B	Vial water preserved	A	N/A	3.5	Y	Absent	MCP-8260HLW-10(14)
L1704637-02C	Vial water preserved	A	N/A	3.5	Y	Absent	MCP-8260HLW-10(14)
L1704637-02D	Glass 500ml/16oz unpreserved	A	N/A	3.5	Y	Absent	IGNIT-1030(14),REACTS(14),MCP-8270-10(14),TS(7),MCP-8082-10-3540C(365),PH-9045(1),REACTCN(14),COND-9050(28),EPH-DELUX-10(14)
L1704637-02D1	Glass 500ml unpreserved split	A	N/A	3.5	Y	Absent	IGNIT-1030(14),REACTS(14),MCP-8270-10(14),TS(7),MCP-8082-10-3540C(365),PH-9045(1),REACTCN(14),COND-9050(28),EPH-DELUX-10(14)

\*Values in parentheses indicate holding time in days

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704637  
**Report Date:** 02/21/17

**Container Information**

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L1704637-02F	Metals Only - Glass 60mL/2oz unp	A	N/A	3.5	Y	Absent	MCP-CR-6010T-10(180),MCP-AS-6010T-10(180),MCP-7471T-10(28),MCP-CD-6010T-10(180),MCP-AG-6010T-10(180),MCP-SE-6010T-10(180),MCP-BA-6010T-10(180),MCP-PB-6010T-10(180)
L1704637-03A	Glass 120ml/4oz unpreserved	A	N/A	3.5	Y	Absent	MCP-8081-10(14),TS(7)
L1704637-04A	Vial MeOH preserved	A	N/A	3.5	Y	Absent	VPH-10(28),MCP-8260H-10(14),MCP-8260HLW-10(14)
L1704637-04B	Vial water preserved	A	N/A	3.5	Y	Absent	MCP-8260H-10(14),MCP-8260HLW-10(14)
L1704637-04C	Vial water preserved	A	N/A	3.5	Y	Absent	MCP-8260H-10(14),MCP-8260HLW-10(14)
L1704637-04D	Glass 500ml/16oz unpreserved	A	N/A	3.5	Y	Absent	IGNIT-1030(14),REACTS(14),MCP-8270-10(14),TS(7),MCP-8082-10-3540C(365),PH-9045(1),REACTCN(14),COND-9050(28),EPH-DELUX-10(14)
L1704637-04F	Metals Only - Glass 60mL/2oz unp	A	N/A	3.5	Y	Absent	MCP-CR-6010T-10(180),MCP-AS-6010T-10(180),MCP-7471T-10(28),MCP-CD-6010T-10(180),MCP-AG-6010T-10(180),MCP-SE-6010T-10(180),MCP-BA-6010T-10(180),MCP-PB-6010T-10(180)
L1704637-05A	Vial MeOH preserved	A	N/A	3.5	Y	Absent	VPH-10(28),MCP-8260HLW-10(14)
L1704637-05B	Vial water preserved	A	N/A	3.5	Y	Absent	MCP-8260HLW-10(14)
L1704637-05C	Vial water preserved	A	N/A	3.5	Y	Absent	MCP-8260HLW-10(14)
L1704637-05D	Glass 500ml/16oz unpreserved	A	N/A	3.5	Y	Absent	IGNIT-1030(14),REACTS(14),MCP-8270-10(14),TS(7),MCP-8082-10-3540C(365),PH-9045(1),REACTCN(14),COND-9050(28),EPH-DELUX-10(14)
L1704637-05F	Metals Only - Glass 60mL/2oz unp	A	N/A	3.5	Y	Absent	MCP-CR-6010T-10(180),MCP-AS-6010T-10(180),MCP-7471T-10(28),MCP-CD-6010T-10(180),MCP-AG-6010T-10(180),MCP-SE-6010T-10(180),MCP-BA-6010T-10(180),MCP-PB-6010T-10(180)
L1704637-06A	Glass 120ml/4oz unpreserved	A	N/A	3.5	Y	Absent	MCP-8081-10(14),TS(7)
L1704637-07A	Vial MeOH preserved	A	N/A	3.5	Y	Absent	VPH-10(28),MCP-8260HLW-10(14)
L1704637-07B	Vial water preserved	A	N/A	3.5	Y	Absent	MCP-8260HLW-10(14)
L1704637-07C	Vial water preserved	A	N/A	3.5	Y	Absent	MCP-8260HLW-10(14)

\*Values in parentheses indicate holding time in days

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704637  
**Report Date:** 02/21/17

**Container Information**

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L1704637-07D	Glass 500ml/16oz unpreserved	A	N/A	3.5	Y	Absent	IGNIT-1030(14),REACTS(14),MCP-8270-10(14),TS(7),MCP-8082-10-3540C(365),PH-9045(1),REACTCN(14),COND-9050(28),EPH-DELUX-10(14)
L1704637-07F	Metals Only - Glass 60mL/2oz unp	A	N/A	3.5	Y	Absent	MCP-CR-6010T-10(180),MCP-AS-6010T-10(180),MCP-7471T-10(28),MCP-CD-6010T-10(180),MCP-AG-6010T-10(180),MCP-SE-6010T-10(180),MCP-BA-6010T-10(180),MCP-PB-6010T-10(180)
L1704637-08A	Vial MeOH preserved	A	N/A	3.5	Y	Absent	VPH-10(28),MCP-8260HLW-10(14)
L1704637-08B	Vial water preserved	A	N/A	3.5	Y	Absent	MCP-8260HLW-10(14)
L1704637-08C	Vial water preserved	A	N/A	3.5	Y	Absent	MCP-8260HLW-10(14)
L1704637-08D	Glass 500ml/16oz unpreserved	A	N/A	3.5	Y	Absent	IGNIT-1030(14),REACTS(14),MCP-8270-10(14),TS(7),MCP-8082-10-3540C(365),PH-9045(1),REACTCN(14),COND-9050(28),EPH-DELUX-10(14)
L1704637-08F	Metals Only - Glass 60mL/2oz unp	A	N/A	3.5	Y	Absent	MCP-CR-6010T-10(180),MCP-AS-6010T-10(180),MCP-7471T-10(28),MCP-CD-6010T-10(180),MCP-AG-6010T-10(180),MCP-SE-6010T-10(180),MCP-BA-6010T-10(180),MCP-PB-6010T-10(180)

\*Values in parentheses indicate holding time in days

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704637  
**Report Date:** 02/21/17

## GLOSSARY

### **Acronyms**

EDL	- Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).
EPA	- Environmental Protection Agency.
LCS	- Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCSD	- Laboratory Control Sample Duplicate: Refer to LCS.
LFB	- Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
MDL	- Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
MS	- Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available.
MSD	- Matrix Spike Sample Duplicate: Refer to MS.
NA	- Not Applicable.
NC	- Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
NDPA/DPA	- N-Nitrosodiphenylamine/Diphenylamine.
NI	- Not Ignitable.
NP	- Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.
RL	- Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
RPD	- Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.
SRM	- Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.
STLP	- Semi-dynamic Tank Leaching Procedure per EPA Method 1315.
TIC	- Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

### **Footnotes**

- 1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

### **Terms**

**Total:** With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

**Analytical Method:** Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

### **Data Qualifiers**

- A** - Spectra identified as "Aldol Condensation Product".
- B** - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the

**Report Format:** Data Usability Report



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704637  
**Report Date:** 02/21/17

**Data Qualifiers**

reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

- C** - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.
- D** - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.
- E** - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.
- G** - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.
- H** - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.
- I** - The lower value for the two columns has been reported due to obvious interference.
- M** - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.
- NJ** - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.
- P** - The RPD between the results for the two columns exceeds the method-specified criteria.
- Q** - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)
- R** - Analytical results are from sample re-analysis.
- RE** - Analytical results are from sample re-extraction.
- S** - Analytical results are from modified screening analysis.
- J** - Estimated value. This represents an estimated concentration for Tentatively Identified Compounds (TICs).
- ND** - Not detected at the reporting limit (RL) for the sample.

*Report Format:* Data Usability Report



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704637  
**Report Date:** 02/21/17

## REFERENCES

- 1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - IV, 2007.
- 97 EPA Test Methods (SW-846) with QC Requirements & Performance Standards for the Analysis of EPA SW-846 Methods under the Massachusetts Contingency Plan, WSC-CAM-IIA, IIB, IIIA, IIIB, IIIC, IID, VA, VB, VC, VIA, VIB, VIIIA and VIIIB, July 2010.
- 98 Method for the Determination of Extractable Petroleum Hydrocarbons (EPH), MassDEP, May 2004, Revision 1.1 with QC Requirements & Performance Standards for the Analysis of EPH under the Massachusetts Contingency Plan, WSC-CAM-IVB, July 2010.
- 100 Method for the Determination of Volatile Petroleum Hydrocarbons (VPH), MassDEP, May 2004, Revision 1.1 with QC Requirements & Performance Standards for the Analysis of VPH under the Massachusetts Contingency Plan, WSC-CAM-IVA, July 2010.
- 121 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. Standard Methods Online.

## LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at its own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.



## Certification Information

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**The following analytes are not included in our Primary NELAP Scope of Accreditation:**

**Westborough Facility**

EPA 624: m/p-xylene, o-xylene  
EPA 8260C: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), Methyl methacrylate, 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.  
EPA 8270D: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.  
EPA 300: DW: Bromide  
EPA 6860: NPW and SCM: Perchlorate  
EPA 9010: NPW and SCM: Amenable Cyanide Distillation  
EPA 9012B: NPW: Total Cyanide  
EPA 9050A: NPW: Specific Conductance  
SM3500: NPW: Ferrous Iron  
SM4500: NPW: Amenable Cyanide, Dissolved Oxygen; SCM: Total Phosphorus, TKN, NO<sub>2</sub>, NO<sub>3</sub>.  
SM5310C: DW: Dissolved Organic Carbon

**Mansfield Facility**

SM 2540D: TSS  
EPA 3005A NPW  
EPA 8082A: NPW: PCB: 1, 5, 31, 87, 101, 110, 141, 151, 153, 180, 183, 187.  
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.  
Biological Tissue Matrix: EPA 3050B

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**The following analytes are included in our Massachusetts DEP Scope of Accreditation**

**Westborough Facility:**

**Drinking Water**

EPA 300.0: Nitrate-N, Fluoride, Sulfate; EPA 353.2: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C**, **SM4500CN-CE**, **EPA 180.1**, **SM2130B**, **SM4500CI-D**, **SM2320B**, **SM2540C**, **SM4500H-B**  
EPA 332: Perchlorate; EPA 524.2: THMs and VOCs; EPA 504.1: EDB, DBCP.  
Microbiology: **SM9215B**; **SM9223-P/A**, **SM9223B-Colilert-QT**,**SM9222D**.

**Non-Potable Water**

**SM4500H,B**, **EPA 120.1**, **SM2510B**, **SM2540C**, **SM2320B**, **SM4500CL-E**, **SM4500F-BC**, **SM4500NH3-BH**, **EPA 350.1**: Ammonia-N, LACHAT 10-107-06-1-B: Ammonia-N, **SM4500NO3-F**, **EPA 353.2**: Nitrate-N, **EPA 351.1**, **SM4500P-E**, **SM4500P-B**, **E**, **SM4500SO4-E**, **SM5220D**, **EPA 410.4**, **SM5210B**, **SM5310C**, **SM4500CL-D**, **EPA 1664**, **EPA 420.1**, **SM4500-CN-CE**, **SM2540D**.  
EPA 624: Volatile Halocarbons & Aromatics,  
EPA 608: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs  
EPA 625: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045**: PCB-Oil.  
Microbiology: **SM9223B-Colilert-QT**; **Enterolert-QT**, **SM9221E**.

**Mansfield Facility:**

**Drinking Water**

EPA 200.7: Ba, Be, Cd, Cr, Cu, Ni, Na, Ca. **EPA 200.8**: Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Ni, Se, TL. **EPA 245.1 Hg**.

**Non-Potable Water**

EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.  
EPA 200.8: Al, Sb, As, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn.  
EPA 245.1 Hg.  
SM2340B

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For a complete listing of analytes and methods, please contact your Alpha Project Manager.



## CHAIN OF CUSTODY

PAGE | OF |

8 Walkup Drive  
Westboro, MA 01581  
Tel: 508-898-9220

320 Forbes Blvd  
Mansfield, MA 02048  
Tel: 508-822-9300

## Client Information

Client: Vertex

Address: One Congress St, 10th fl  
Boston MA 02114

Phone: 781-917-5360

Email: bgibbons@vertexeng.com  
ctrapp@vertexeng.com

Additional Project Information:

## Project Information

Project Name: East Boston

Project Location: MA

Project #: 43068

Project Manager: B. Gibbons

ALPHA Quote #:

## Turn-Around Time

 Standard       RUSH (only confirmed if pre-approved)

Date Due:

Date Rec'd in Lab: 02/14/17

ALPHA Job #: L1704637

## Report Information - Data Deliverables

 ADEX       EMAIL

## Billing Information

 Same as Client Info      PO #:

## Regulatory Requirements &amp; Project Information Requirements

- Yes  No MA MCP Analytical Methods       Yes  No CT RCP Analytical Methods  
 Yes  No Matrix Spike Required on this SDG? (Required for MCP Inorganics)  
 Yes  No GW1 Standards (Info Required for Metals & EPH with Targets)  
 Yes  No NPDES RGP  
 Other State /Fed Program \_\_\_\_\_ Criteria

ANALYSIS	Criteria										TOTAL #					
	VOC: <input checked="" type="checkbox"/> 8260	<input type="checkbox"/> 624	<input type="checkbox"/> 524.2	SVOC: <input type="checkbox"/> ABN	<input checked="" type="checkbox"/> PAH	<input checked="" type="checkbox"/> 8270	METALS: <input type="checkbox"/> MCP 13	<input type="checkbox"/> MCP 14	<input type="checkbox"/> RCP 15	EPH: <input type="checkbox"/> RCRAS	<input type="checkbox"/> RCRAS	TPH: <input type="checkbox"/> Ranges & Targets	<input type="checkbox"/> Ranges Only	<input type="checkbox"/> PCB	<input type="checkbox"/> PEST 8082	<input type="checkbox"/> Solvent
VOC: <input checked="" type="checkbox"/> 8260																
SVOC: <input type="checkbox"/> ABN																
METALS: <input type="checkbox"/> MCP 13																
EPH: <input type="checkbox"/> RCRAS																
TPH: <input type="checkbox"/> Ranges & Targets																
<input type="checkbox"/> Ranges Only																
<input type="checkbox"/> PCB																
<input type="checkbox"/> PEST 8082																
<input type="checkbox"/> Solvent																
<input type="checkbox"/> Fingerprint																
Cyanide																
Sulfide leaching																
8081																

## SAMPLE INFO

Filtration  
 Field  
 Lab to do

Preservation  
 Lab to do

## Sample Comments

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler Initials	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
04637-01	VES-104 (2-4)	2/14/17	0900	Soil	KS	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
02	VES-106(5-7)		1130		KS	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
03	VES-110 (0-2)		0945		BS															1
04	VES-110 (2-4)		0950		BS	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
05	VES-110 (12-14)		0955		BS	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
06	VES-111 (0-2)		1135		BS															1
07	VES-111 (2-4)		1140		BS	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
08	VES-125 (0-2)		1435		BS	X	X	X	X	X	X	X	X	X	X	X	X	X	X	

## Container Type

P= Plastic  
A= Amber glass  
V= Vial  
G= Glass  
B= Bacteria cup  
C= Cube  
O= Other  
E= Encore  
D= BOD Bottle

## Preservative

A= None  
B= HCl  
C= HNO<sub>3</sub>  
D= H<sub>2</sub>SO<sub>4</sub>  
E= NaOH  
F= MeOH  
G= NaHSO<sub>4</sub>  
H= Na<sub>2</sub>S<sub>2</sub>O<sub>3</sub>  
I= Ascorbic Acid  
J= NH<sub>4</sub>Cl  
K= Zn Acetate  
O= Other

## Container Type

V A AA V A

## Preservative

E/H A A A F A

## AA A

AA A

Relinquished By: <i>Walter</i>	Date/Time: 2/14/17 1500	Received By: <i>John</i>	Date/Time: 2/14/17 1500
	3/14/17 1735		3/14/17 1735

All samples submitted are subject to  
Alpha's Terms and Conditions.  
See reverse side.

FORM NO. 01-01 (rev. 12-Mar-2012)

**Method Blank Summary  
Form 4**

Client	: Vertex Environmental Services, Inc.	Lab Number	: L1704637
Project Name	: EAST BOSTON	Project Number	: 43068
Lab Sample ID	: WG978923-5	Lab File ID	: V10170217A06
Instrument ID	: VOA110		
Matrix	: SOIL	Analysis Date	: 02/17/17 10:44

Client Sample No.	Lab Sample ID	Analysis Date
WG978923-3LCS	WG978923-3	02/17/17 09:26
WG978923-4LCSD	WG978923-4	02/17/17 09:52
VES-104 (2-4)	L1704637-01	02/17/17 13:46
VES-106 (5-7)	L1704637-02	02/17/17 14:12
VES-110 (2-4)	L1704637-04	02/17/17 14:38
VES-110 (12-14)	L1704637-05	02/17/17 15:04
VES-111 (2-4)	L1704637-07	02/17/17 15:30
VES-125 (0-2)	L1704637-08	02/17/17 15:56

## Method Blank Summary Form 4

Client	: Vertex Environmental Services, Inc.	Lab Number	: L1704637
Project Name	: EAST BOSTON	Project Number	: 43068
Lab Sample ID	: WG979244-5	Lab File ID	: V10170219A05
Instrument ID	: VOA110		
Matrix	: SOIL	Analysis Date	: 02/19/17 11:04

Client Sample No.	Lab Sample ID	Analysis Date
WG979244-3LCS	WG979244-3	02/19/17 09:46
WG979244-4LCSD	WG979244-4	02/19/17 10:12
VES-110 (2-4)	L1704637-04	02/19/17 14:31

**Continuing Calibration  
Form 7**

Client	: Vertex Environmental Services, Inc.	Lab Number	: L1704637
Project Name	: EAST BOSTON	Project Number	: 43068
Instrument ID	: VOA110	Calibration Date	: 02/17/17 09:26
Lab File ID	: V10170217A03	Init. Calib. Date(s)	: 01/12/17
Sample No	: WG978923-2	Init. Calib. Times	: 17:59 01/12/17 20:57
Channel	:		

Compound	Ave. RRF	RRF	Min RRF	%D	Max %D	Area%	Dev(min)
Fluorobenzene	1	1	-	0	20	91	0
Dichlorodifluoromethane	0.34	0.364	-	-7.1	20	96	0
Chloromethane	0.226	0.256	-	-13.3	20	102	0
Vinyl chloride	0.299	0.334	-	-11.7	20	99	0
Bromomethane	0.249	0.274	-	-10	20	100	0
Chloroethane	0.196	0.237	-	-20.9*	20	109	-.01
Trichlorofluoromethane	0.513	0.657	-	-28.1*	20	111	-.01
Ethyl ether	0.162	0.144	-	11.1	20	79	0
1,1-Dichloroethene	0.22	0.22	-	0	20	93	0
Carbon disulfide	0.765	0.996	-	-30.2*	20	126	0
Freon-113	0.211	0.232	-	-10	20	96	0
Acrolein	0.022	0.015	-	31.8*	20	74	0
Methylene chloride	0.268	0.304	-	-13.4	20	108	0
Acetone	20	20.231	-	-1.2	20	90	0
trans-1,2-Dichloroethene	0.24	0.246	-	-2.5	20	94	0
Methyl acetate	0.116	0.103	-	11.2	20	86	0
Methyl tert-butyl ether	0.64	0.646	-	-0.9	20	95	0
tert-Butyl alcohol	100	102.579	-	-2.6	20	106	0
Diisopropyl ether	0.614	0.615	-	-0.2	20	93	0
1,1-Dichloroethane	0.408	0.459	-	-12.5	20	101	0
Halothane	0.147	0.167	-	-13.6	20	100	0
Acrylonitrile	20	17.245	-	13.8	20	81	0
Ethyl tert-butyl ether	0.581	0.584	-	-0.5	20	94	0
Vinyl acetate	20	18.448	-	7.8	20	96	0
cis-1,2-Dichloroethene	0.253	0.267	-	-5.5	20	95	0
2,2-Dichloropropane	0.342	0.399	-	-16.7	20	109	0
Bromochloromethane	0.115	0.128	-	-11.3	20	97	0
Cyclohexane	0.298	0.329	-	-10.4	20	96	0
Chloroform	0.447	0.51	-	-14.1	20	101	0
Ethyl acetate	20	17.301	-	13.5	20	88	0
Carbon tetrachloride	0.309	0.364	-	-17.8	20	105	0
Tetrahydrofuran	20	21.014	-	-5.1	20	88	0
Dibromofluoromethane	0.252	0.271	-	-7.5	20	99	0
1,1,1-Trichloroethane	0.389	0.452	-	-16.2	20	104	0
2-Butanone	20	17.267	-	13.7	20	85	0
1,1-Dichloropropene	0.3	0.327	-	-9	20	97	0
Benzene	0.947	1.06	-	-11.9	20	100	0
tert-Amyl methyl ether	20	18.047	-	9.8	20	96	0
1,2-Dichloroethane-d4	0.283	0.313	-	-10.6	20	103	0
1,2-Dichloroethane	0.32	0.37	-	-15.6	20	102	0
Methyl cyclohexane	0.342	0.361	-	-5.6	20	95	0
Trichloroethene	0.256	0.291	-	-13.7	20	102	0
Dibromomethane	0.134	0.15	-	-11.9	20	101	0
1,2-Dichloropropane	0.207	0.228	-	-10.1	20	99	0
2-Chloroethyl vinyl ether	20	16.806	-	16	20	94	0

\* Value outside of QC limits.



**Continuing Calibration  
Form 7**

Client	: Vertex Environmental Services, Inc.	Lab Number	: L1704637		
Project Name	: EAST BOSTON	Project Number	: 43068		
Instrument ID	: VOA110	Calibration Date	: 02/17/17 09:26		
Lab File ID	: V10170217A03	Init. Calib. Date(s)	: 01/12/17		01/12/17
Sample No	: WG978923-2	Init. Calib. Times	: 17:59		20:57
Channel	:				

Compound	Ave. RRF	RRF	Min RRF	%D	Max %D	Area%	Dev(min)
Bromodichloromethane	0.313	0.359	-	-14.7	20	105	0
1,4-Dioxane	0.00199	0.00189	-	5	20	95	0
cis-1,3-Dichloropropene	20	21.329	-	-6.6	20	113	0
Chlorobenzene-d5	1	1	-	0	20	106	0
Toluene-d8	1.21	1.295	-	-7	20	109	0
Toluene	0.82	0.913	-	-11.3	20	115	0
4-Methyl-2-pentanone	20	16.446	-	17.8	20	102	0
Tetrachloroethene	0.352	0.377	-	-7.1	20	109	0
trans-1,3-Dichloropropene	20	19.493	-	2.5	20	116	0
Ethyl methacrylate	20	15.013	-	24.9*	20	104	0
1,1,2-Trichloroethane	0.234	0.277	-	-18.4	20	118	0
Chlorodibromomethane	20	20.279	-	-1.4	20	119	0
1,3-Dichloropropane	0.463	0.517	-	-11.7	20	113	0
1,2-Dibromoethane	20	20.685	-	-3.4	20	113	0
2-Hexanone	20	14.105	-	29.5*	20	86	0
Chlorobenzene	0.89	0.966	-	-8.5	20	112	0
Ethylbenzene	1.52	1.693	-	-11.4	20	113	0
1,1,1,2-Tetrachloroethane	0.313	0.355	-	-13.4	20	118	0
p/m Xylene	0.584	0.664	-	-13.7	20	115	0
o Xylene	40	40.219	-	-0.5	20	111	0
Styrene	40	39.434	-	1.4	20	112	0
1,4-Dichlorobenzene-d4	1	1	-	0	20	110	0
Bromoform	20	17.83	-	10.9	20	120	0
Isopropylbenzene	20	18.886	-	5.6	20	109	0
4-Bromofluorobenzene	0.869	0.851	-	2.1	20	108	0
Bromobenzene	0.751	0.736	-	2	20	106	0
n-Propylbenzene	3.525	3.832	-	-8.7	20	115	0
1,4-Dichlorobutane	0.802	0.893	-	-11.3	20	119	0
1,1,2,2-Tetrachloroethane	0.689	0.772	-	-12	20	119	0
4-Ethyltoluene	2.761	3.017	-	-9.3	20	115	0
2-Chlorotoluene	2.16	2.37	-	-9.7	20	118	0
1,3,5-Trimethylbenzene	2.416	2.681	-	-11	20	114	0
1,2,3-Trichloropropane	0.558	0.613	-	-9.9	20	119	0
trans-1,4-Dichloro-2-butene	0.166	0.163	-	1.8	20	111	0
4-Chlorotoluene	2.103	2.297	-	-9.2	20	116	0
tert-Butylbenzene	2.001	2.082	-	-4	20	110	0
1,2,4-Trimethylbenzene	20	20.26	-	-1.3	20	114	0
sec-Butylbenzene	3.049	3.324	-	-9	20	113	0
p-Isopropyltoluene	20	19.585	-	2.1	20	112	0
1,3-Dichlorobenzene	1.481	1.535	-	-3.6	20	111	0
1,4-Dichlorobenzene	1.526	1.587	-	-4	20	112	0
p-Diethylbenzene	20	18.844	-	5.8	20	110	0
n-Butylbenzene	2.476	2.869	-	-15.9	20	120	0
1,2-Dichlorobenzene	1.363	1.422	-	-4.3	20	113	0
1,2,4,5-Tetramethylbenzene	20	16.343	-	18.3	20	103	0

\* Value outside of QC limits.



# Continuing Calibration Form 7

Client : Vertex Environmental Services, Inc.      Lab Number : L1704637  
 Project Name : EAST BOSTON      Project Number : 43068  
 Instrument ID : VOA110      Calibration Date : 02/17/17 09:26  
 Lab File ID : V10170217A03      Init. Calib. Date(s) : 01/12/17      01/12/17  
 Sample No : WG978923-2      Init. Calib. Times : 17:59      20:57  
 Channel :

Compound	Ave. RRF	RRF	Min RRF	%D	Max %D	Area%	Dev(min)
1,2-Dibromo-3-chloropropan	20	19.133	-	4.3	20	117	0
1,3,5-Trichlorobenzene	1.02	1.058	-	-3.7	20	114	0
Hexachlorobutadiene	0.5	0.504	-	-0.8	20	115	0
1,2,4-Trichlorobenzene	0.869	0.818	-	5.9	20	105	0
Naphthalene	20	16.029	-	19.9	20	102	0
1,2,3-Trichlorobenzene	0.812	0.834	-	-2.7	20	110	0

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\* Value outside of QC limits.



**Continuing Calibration  
Form 7**

Client	: Vertex Environmental Services, Inc.	Lab Number	: L1704637
Project Name	: EAST BOSTON	Project Number	: 43068
Instrument ID	: VOA110	Calibration Date	: 02/19/17 09:46
Lab File ID	: V10170219A02	Init. Calib. Date(s)	: 01/12/17
Sample No	: WG979244-2	Init. Calib. Times	: 17:59
Channel	:		01/12/17
			20:57

Compound	Ave. RRF	RRF	Min RRF	%D	Max %D	Area%	Dev(min)
Fluorobenzene	1	1	-	0	20	98	0
Dichlorodifluoromethane	0.34	0.34	-	0	20	96	0
Chloromethane	0.226	0.235	-	-4	20	101	.01
Vinyl chloride	0.299	0.301	-	-0.7	20	96	0
Bromomethane	0.249	0.254	-	-2	20	99	0
Chloroethane	0.196	0.214	-	-9.2	20	105	0
Trichlorofluoromethane	0.513	0.561	-	-9.4	20	101	0
Ethyl ether	0.162	0.186	-	-14.8	20	110	0
1,1-Dichloroethene	0.22	0.213	-	3.2	20	97	0
Carbon disulfide	0.765	0.774	-	-1.2	20	105	0
Freon-113	0.211	0.214	-	-1.4	20	95	0
Acrolein	0.022	0.021	-	4.5	20	113	0
Methylene chloride	0.268	0.326	-	-21.6*	20	123	0
Acetone	20	24.49	-	-22.4*	20	116	0
trans-1,2-Dichloroethene	0.24	0.245	-	-2.1	20	100	0
Methyl acetate	0.116	0.124	-	-6.9	20	111	0
Methyl tert-butyl ether	0.64	0.687	-	-7.3	20	109	0
tert-Butyl alcohol	100	109.985	-	-10	20	122	0
Diisopropyl ether	0.614	0.635	-	-3.4	20	102	0
1,1-Dichloroethane	0.408	0.45	-	-10.3	20	106	0
Halothane	0.147	0.157	-	-6.8	20	101	0
Acrylonitrile	20	20.381	-	-1.9	20	105	0
Ethyl tert-butyl ether	0.581	0.609	-	-4.8	20	104	0
Vinyl acetate	20	19.863	-	0.7	20	112	0
cis-1,2-Dichloroethene	0.253	0.267	-	-5.5	20	101	0
2,2-Dichloropropane	0.342	0.379	-	-10.8	20	111	0
Bromochloromethane	0.115	0.131	-	-13.9	20	106	0
Cyclohexane	0.298	0.301	-	-1	20	94	0
Chloroform	0.447	0.504	-	-12.8	20	107	0
Ethyl acetate	20	19.744	-	1.3	20	109	0
Carbon tetrachloride	0.309	0.338	-	-9.4	20	104	0
Tetrahydrofuran	20	22.218	-	-11.1	20	100	0
Dibromofluoromethane	0.252	0.273	-	-8.3	20	106	0
1,1,1-Trichloroethane	0.389	0.427	-	-9.8	20	106	0
2-Butanone	20	19.57	-	2.1	20	106	0
1,1-Dichloropropene	0.3	0.312	-	-4	20	99	0
Benzene	0.947	1.038	-	-9.6	20	105	0
tert-Amyl methyl ether	20	19.072	-	4.6	20	109	0
1,2-Dichloroethane-d4	0.283	0.314	-	-11	20	110	0
1,2-Dichloroethane	0.32	0.378	-	-18.1	20	111	0
Methyl cyclohexane	0.342	0.328	-	4.1	20	93	0
Trichloroethene	0.256	0.272	-	-6.3	20	102	0
Dibromomethane	0.134	0.156	-	-16.4	20	113	0
1,2-Dichloropropane	0.207	0.225	-	-8.7	20	105	0
2-Chloroethyl vinyl ether	20	14.346	-	28.3*	20	82	0

\* Value outside of QC limits.



**Continuing Calibration  
Form 7**

Client	: Vertex Environmental Services, Inc.	Lab Number	: L1704637		
Project Name	: EAST BOSTON	Project Number	: 43068		
Instrument ID	: VOA110	Calibration Date	: 02/19/17 09:46		
Lab File ID	: V10170219A02	Init. Calib. Date(s)	: 01/12/17		01/12/17
Sample No	: WG979244-2	Init. Calib. Times	: 17:59		20:57
Channel	:				

Compound	Ave. RRF	RRF	Min RRF	%D	Max %D	Area%	Dev(min)
Bromodichloromethane	0.313	0.354	-	-13.1	20	111	0
1,4-Dioxane	0.00199	0.00207	-	-4	20	112	0
cis-1,3-Dichloropropene	20	19.035	-	4.8	20	108	0
Chlorobenzene-d5	1	1	-	0	20	101	0
Toluene-d8	1.21	1.258	-	-4	20	101	0
Toluene	0.82	0.874	-	-6.6	20	105	0
4-Methyl-2-pentanone	20	17.348	-	13.3	20	104	0
Tetrachloroethene	0.352	0.35	-	0.6	20	96	0
trans-1,3-Dichloropropene	20	19.772	-	1.1	20	112	0
Ethyl methacrylate	20	15.532	-	22.3*	20	103	0
1,1,2-Trichloroethane	0.234	0.279	-	-19.2	20	113	0
Chlorodibromomethane	20	20.891	-	-4.5	20	116	0
1,3-Dichloropropane	0.463	0.516	-	-11.4	20	107	0
1,2-Dibromoethane	20	21.376	-	-6.9	20	111	0
2-Hexanone	20	15.816	-	20.9*	20	96	0
Chlorobenzene	0.89	0.937	-	-5.3	20	103	0
Ethylbenzene	1.52	1.635	-	-7.6	20	103	0
1,1,1,2-Tetrachloroethane	0.313	0.351	-	-12.1	20	111	0
p/m Xylene	0.584	0.637	-	-9.1	20	105	0
o Xylene	40	39.161	-	2.1	20	102	0
Styrene	40	39.309	-	1.7	20	107	0
1,4-Dichlorobenzene-d4	1	1	-	0	20	106	0
Bromoform	20	17.795	-	11	20	116	0
Isopropylbenzene	20	17.558	-	12.2	20	98	0
4-Bromofluorobenzene	0.869	0.872	-	-0.3	20	108	0
Bromobenzene	0.751	0.738	-	1.7	20	103	0
n-Propylbenzene	3.525	3.555	-	-0.9	20	103	0
1,4-Dichlorobutane	0.802	0.878	-	-9.5	20	113	0
1,1,2,2-Tetrachloroethane	0.689	0.779	-	-13.1	20	117	0
4-Ethyltoluene	2.761	2.79	-	-1.1	20	103	0
2-Chlorotoluene	2.16	2.245	-	-3.9	20	108	0
1,3,5-Trimethylbenzene	2.416	2.525	-	-4.5	20	104	0
1,2,3-Trichloropropane	0.558	0.617	-	-10.6	20	116	0
trans-1,4-Dichloro-2-butene	0.166	0.176	-	-6	20	116	0
4-Chlorotoluene	2.103	2.192	-	-4.2	20	107	0
tert-Butylbenzene	2.001	1.915	-	4.3	20	98	0
1,2,4-Trimethylbenzene	20	19.235	-	3.8	20	104	0
sec-Butylbenzene	3.049	3.021	-	0.9	20	100	0
p-Isopropyltoluene	20	17.819	-	10.9	20	98	0
1,3-Dichlorobenzene	1.481	1.494	-	-0.9	20	105	0
1,4-Dichlorobenzene	1.526	1.543	-	-1.1	20	106	0
p-Diethylbenzene	20	17.362	-	13.2	20	98	0
n-Butylbenzene	2.476	2.617	-	-5.7	20	106	0
1,2-Dichlorobenzene	1.363	1.386	-	-1.7	20	107	0
1,2,4,5-Tetramethylbenzene	20	15.947	-	20.3*	20	98	0

\* Value outside of QC limits.



# Continuing Calibration

## Form 7

Client	: Vertex Environmental Services, Inc.	Lab Number	: L1704637
Project Name	: EAST BOSTON	Project Number	: 43068
Instrument ID	: VOA110	Calibration Date	: 02/19/17 09:46
Lab File ID	: V10170219A02	Init. Calib. Date(s)	: 01/12/17
Sample No	: WG979244-2	Init. Calib. Times	: 17:59 01/12/17 20:57
Channel	:		

Compound	Ave. RRF	RRF	Min RRF	%D	Max %D	Area%	Dev(min)
1,2-Dibromo-3-chloropropan	20	18.469	-	7.7	20	109	0
1,3,5-Trichlorobenzene	1.02	1.011	-	0.9	20	106	0
Hexachlorobutadiene	0.5	0.496	-	0.8	20	110	0
1,2,4-Trichlorobenzene	0.869	0.861	-	0.9	20	107	0
Naphthalene	20	18.089	-	9.6	20	112	0
1,2,3-Trichlorobenzene	0.812	0.927	-	-14.2	20	119	0

\* Value outside of QC limits.



I:\Pest18\170216\18170216-01.d

Data File Name **18170216-01.d**  
 Data File Path **I:\Pest18\170216\**  
 Operator **PEST18:keg**  
 Date Acquired **2/16/2017 8:23**  
 Acq. Method File **PEST.M**  
 Sample Name **pem1817021601,42ee,,deg pi**  
 Instrument Name **Pest 18**

Name	Ret Time	Response	
4,4'-DDT	4.78	463921617.3	% Breakdown
4,4'-DDE	4.11	879788.152	
4,4'-DDD	4.58	3289987.75	0.89%
Endrin	4.51	260334077.1	% Breakdown
Endrin Aldehyde	4.98	1091535.346	
Endrin Ketone	5.47	2203149.43	1.25%
4,4'-DDT #2	5.41	248525602	% Breakdown
4,4'-DDE #2	4.76	786422.68	
4,4'-DDD #2	5.19	2846683.5	1.44%
Endrin #2	5.12	161189679.4	% Breakdown
Endrin Aldehyde #2	5.51	688100.971	
Endrin Ketone #2	6.06	1653063.009	1.43%

WG977965-1, -2, -3, -4, -5

I:\Pest18\170216n\18170216n-01.d

Data File Name **18170216n-01.d**  
 Data File Path **I:\Pest18\170216n\**  
 Operator **PEST18:RL**  
 Date Acquired **2/16/2017 20:49**  
 Acq. Method File **PEST.M**  
 Sample Name **PEM18170216N01,42EE,,deg**  
 Instrument Name **Pest 18**

Name	Ret Time	Response	
4,4'-DDT	4.78	468986374.3	% Breakdown
4,4'-DDE	4.11	1300394.746	
4,4'-DDD	4.57	4105765.497	1.14%
Endrin	4.50	256842346.3	% Breakdown
Endrin Aldehyde	4.97	1076677.921	
Endrin Ketone	5.47	2954134.276	1.55%
4,4'-DDT #2	5.41	288362852.4	% Breakdown
4,4'-DDE #2	4.76	800879.763	
4,4'-DDD #2	5.19	2588586.993	1.16%
Endrin #2	5.12	169305367.4	% Breakdown
Endrin Aldehyde #2	5.50	952223.975	
Endrin Ketone #2	6.06	1476119.219	1.41%

L1704637-03, -06



## ANALYTICAL REPORT

Lab Number:	L1704803
Client:	Vertex Environmental Services, Inc. 400 Libbey Pkwy Weymouth, MA 02184
ATTN:	Bill Gibbons
Phone:	(617) 830-1540
Project Name:	EAST BOSTON
Project Number:	43068
Report Date:	02/20/17

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Certifications & Approvals: MA (M-MA086), NH NELAP (2064), NJ NELAP (MA935), CT (PH-0574), IL (200077), ME (MA00086), MD (348), NH (2003), NY (11148), NC (25700/666), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #P330-14-00197).

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Eight Walkup Drive, Westborough, MA 01581-1019  
508-898-9220 (Fax) 508-898-9193 800-624-9220 - [www.alphalab.com](http://www.alphalab.com)



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704803  
**Report Date:** 02/20/17

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L1704803-01	VES-132 (MW)	WATER	MA	02/15/17 11:55	02/15/17
L1704803-02	VES-133 (MW)	WATER	MA	02/15/17 14:00	02/15/17
L1704803-03	VES-135 (MW)	WATER	MA	02/15/17 13:00	02/15/17
L1704803-04	VES-129 (MW)	WATER	MA	02/15/17 15:30	02/15/17
L1704803-05	VES-120 (MW)	WATER	MA	02/15/17 14:50	02/15/17

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704803  
**Report Date:** 02/20/17

### MADEP MCP Response Action Analytical Report Certification

This form provides certifications for all samples performed by MCP methods. Please refer to the Sample Results and Container Information sections of this report for specification of MCP methods used for each analysis. The following questions pertain only to MCP Analytical Methods.

<b>An affirmative response to questions A through F is required for "Presumptive Certainty" status</b>		
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?	NO
B	Were the analytical method(s) and all associated QC requirements specified in the selected CAM protocol(s) followed?	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
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
E a.	VPH, EPH, and APH Methods only: Was each method conducted without significant modification(s)? (Refer to the individual method(s) for a list of significant modifications).	YES
E b.	APH and TO-15 Methods only: Was the complete analyte list reported for each method?	N/A
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

<b>A response to questions G, H and I is required for "Presumptive Certainty" status</b>		
G	Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocol(s)?	YES
H	Were all QC performance standards specified in the CAM protocol(s) achieved?	NO
I	Were results reported for the complete analyte list specified in the selected CAM protocol(s)?	NO

**For any questions answered "No", please refer to the case narrative section on the following page(s).**

Please note that sample matrix information is located in the Sample Results section of this report.



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704803  
**Report Date:** 02/20/17

### Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively. When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. All specific QC information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated usability implications. Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances the specific failure is not narrated but noted in the associated QC table. The information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated usability implications.

Please see the associated ADEx data file for a comparison of laboratory reporting limits that were achieved with the regulatory Numerical Standards requested on the Chain of Custody.

#### HOLD POLICY

For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Client Service Representative and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Client Services at 800-624-9220 with any questions.

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704803  
**Report Date:** 02/20/17

### Case Narrative (continued)

#### MCP Related Narratives

##### Sample Receipt

In reference to question A:

L1704803-03: The sample was received without the container for the Total Metals analysis. An aliquot was taken from an unpreserved container and preserved appropriately.

#### Volatile Organics

In reference to question H:

The initial calibration, associated with L1704803-01, -02, -04 and -05, did not meet the method required minimum response factor on the lowest calibration standard for 4-methyl-2-pentanone (0.0761) and 1,4-dioxane (0.0017), as well as the average response factor for 4-methyl-2-pentanone and 1,4-dioxane.

The initial calibration, associated with L1704803-03, did not meet the method required minimum response factor on the lowest calibration standard for 2-butanone (0.0732) and tert-butyl alcohol (0.0129), as well as the average response factor for 2-butanone and tert-butyl alcohol.

The continuing calibration standards, associated with L1704803-01 through -05, are outside the acceptance criteria for several compounds; however, they are within overall method allowances. A copy of the continuing calibration standards is included as an addendum to this report.

#### Volatile Organics by SIM

The continuing calibration standard, associated with L1704803-03, is included as an addendum to this report.

#### Semivolatile Organics

In reference to question B:

At the client's request, the analytical method specified in the CAM protocol was not followed.

In reference to question H:

The WG978284-2/-3 LCS/LCSD recoveries, associated with L1704803-03, are below the acceptance criteria for benzidine (9%/5%); however, it has been identified as a "difficult" analyte. The results of the associated sample are reported.

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704803  
**Report Date:** 02/20/17

### Case Narrative (continued)

VPH

In reference to question I:

All samples were analyzed for a subset of MCP analytes per the Chain of Custody.

PCBs

In reference to question B:

At the client's request, the analytical method specified in the CAM protocol was not followed.

Dissolved Metals

In reference to question I:

All samples were analyzed for a subset of MCP analytes per the Chain of Custody.

Total Metals

In reference to question B:

L1704803-03: At the client's request, the analytical method specified in the CAM protocol was not followed.

In reference to question H:

The WG978336-7 MS recovery for iron (0%), performed on L1704803-03, does not apply because the sample concentration is greater than four times the spike amount added.

In reference to question I:

All samples were analyzed for a subset of MCP analytes per the Chain of Custody.

Chromium, Hexavalent

In reference to question B:

L1704803-03: At the client's request, the analytical method specified in the CAM protocol was not followed.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature:

 Michelle M. Morris

Title: Technical Director/Representative

Date: 02/20/17

# ORGANICS



# VOLATILES



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704803  
**Report Date:** 02/20/17

**SAMPLE RESULTS**

Lab ID: L1704803-01  
Client ID: VES-132 (MW)  
Sample Location: MA

Date Collected: 02/15/17 11:55  
Date Received: 02/15/17  
Field Prep: Field Filtered (Dissolved Metals)

Matrix: Water  
Analytical Method: 97,8260C  
Analytical Date: 02/17/17 09:08  
Analyst: MM

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics - Westborough Lab</b>						
Methylene chloride	ND	ug/l	2.0	--	--	1
1,1-Dichloroethane	ND	ug/l	1.0	--	--	1
Chloroform	ND	ug/l	1.0	--	--	1
Carbon tetrachloride	ND	ug/l	1.0	--	--	1
1,2-Dichloropropane	ND	ug/l	1.0	--	--	1
Dibromochloromethane	ND	ug/l	1.0	--	--	1
1,1,2-Trichloroethane	ND	ug/l	1.0	--	--	1
Tetrachloroethene	ND	ug/l	1.0	--	--	1
Chlorobenzene	ND	ug/l	1.0	--	--	1
Trichlorofluoromethane	ND	ug/l	2.0	--	--	1
1,2-Dichloroethane	ND	ug/l	1.0	--	--	1
1,1,1-Trichloroethane	ND	ug/l	1.0	--	--	1
Bromodichloromethane	ND	ug/l	1.0	--	--	1
trans-1,3-Dichloropropene	ND	ug/l	0.50	--	--	1
cis-1,3-Dichloropropene	ND	ug/l	0.50	--	--	1
1,3-Dichloropropene, Total	ND	ug/l	0.50	--	--	1
1,1-Dichloropropene	ND	ug/l	2.0	--	--	1
Bromoform	ND	ug/l	2.0	--	--	1
1,1,2,2-Tetrachloroethane	ND	ug/l	1.0	--	--	1
Benzene	ND	ug/l	0.50	--	--	1
Toluene	ND	ug/l	1.0	--	--	1
Ethylbenzene	ND	ug/l	1.0	--	--	1
Chloromethane	ND	ug/l	2.0	--	--	1
Bromomethane	ND	ug/l	2.0	--	--	1
Vinyl chloride	ND	ug/l	1.0	--	--	1
Chloroethane	ND	ug/l	2.0	--	--	1
1,1-Dichloroethene	ND	ug/l	1.0	--	--	1
trans-1,2-Dichloroethene	ND	ug/l	1.0	--	--	1
Trichloroethene	ND	ug/l	1.0	--	--	1



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704803  
**Report Date:** 02/20/17

**SAMPLE RESULTS**

Lab ID:	L1704803-01	Date Collected:	02/15/17 11:55
Client ID:	VES-132 (MW)	Date Received:	02/15/17
Sample Location:	MA	Field Prep:	Field Filtered (Dissolved Metals)

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics - Westborough Lab</b>						
1,2-Dichlorobenzene	ND	ug/l	1.0	--	--	1
1,3-Dichlorobenzene	ND	ug/l	1.0	--	--	1
1,4-Dichlorobenzene	ND	ug/l	1.0	--	--	1
Methyl tert butyl ether	ND	ug/l	2.0	--	--	1
p/m-Xylene	ND	ug/l	2.0	--	--	1
o-Xylene	ND	ug/l	1.0	--	--	1
Xylene (Total)	ND	ug/l	1.0	--	--	1
cis-1,2-Dichloroethene	ND	ug/l	1.0	--	--	1
1,2-Dichloroethene (total)	ND	ug/l	1.0	--	--	1
Dibromomethane	ND	ug/l	2.0	--	--	1
1,2,3-Trichloropropane	ND	ug/l	2.0	--	--	1
Styrene	ND	ug/l	1.0	--	--	1
Dichlorodifluoromethane	ND	ug/l	2.0	--	--	1
Acetone	ND	ug/l	5.0	--	--	1
Carbon disulfide	ND	ug/l	2.0	--	--	1
2-Butanone	ND	ug/l	5.0	--	--	1
4-Methyl-2-pentanone	ND	ug/l	5.0	--	--	1
2-Hexanone	ND	ug/l	5.0	--	--	1
Bromochloromethane	ND	ug/l	2.0	--	--	1
Tetrahydrofuran	ND	ug/l	2.0	--	--	1
2,2-Dichloropropane	ND	ug/l	2.0	--	--	1
1,2-Dibromoethane	ND	ug/l	2.0	--	--	1
1,3-Dichloropropane	ND	ug/l	2.0	--	--	1
1,1,1,2-Tetrachloroethane	ND	ug/l	1.0	--	--	1
Bromobenzene	ND	ug/l	2.0	--	--	1
n-Butylbenzene	ND	ug/l	2.0	--	--	1
sec-Butylbenzene	ND	ug/l	2.0	--	--	1
tert-Butylbenzene	ND	ug/l	2.0	--	--	1
o-Chlorotoluene	ND	ug/l	2.0	--	--	1
p-Chlorotoluene	ND	ug/l	2.0	--	--	1
1,2-Dibromo-3-chloropropane	ND	ug/l	2.0	--	--	1
Hexachlorobutadiene	ND	ug/l	0.60	--	--	1
Isopropylbenzene	ND	ug/l	2.0	--	--	1
p-Isopropyltoluene	ND	ug/l	2.0	--	--	1
Naphthalene	19	ug/l	2.0	--	--	1
n-Propylbenzene	ND	ug/l	2.0	--	--	1
1,2,3-Trichlorobenzene	ND	ug/l	2.0	--	--	1
1,2,4-Trichlorobenzene	ND	ug/l	2.0	--	--	1



Project Name: EAST BOSTON

Lab Number: L1704803

Project Number: 43068

Report Date: 02/20/17

**SAMPLE RESULTS**

Lab ID: L1704803-01  
 Client ID: VES-132 (MW)  
 Sample Location: MA

Date Collected: 02/15/17 11:55  
 Date Received: 02/15/17  
 Field Prep: Field Filtered (Dissolved Metals)

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics - Westborough Lab</b>						
1,3,5-Trimethylbenzene	ND		ug/l	2.0	--	1
1,2,4-Trimethylbenzene	ND		ug/l	2.0	--	1
Ethyl ether	ND		ug/l	2.0	--	1
Isopropyl Ether	ND		ug/l	2.0	--	1
Ethyl-Tert-Butyl-Ether	ND		ug/l	2.0	--	1
Tertiary-Amyl Methyl Ether	ND		ug/l	2.0	--	1
1,4-Dioxane	ND		ug/l	250	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	97		70-130
Toluene-d8	99		70-130
4-Bromofluorobenzene	92		70-130
Dibromofluoromethane	99		70-130

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704803  
**Report Date:** 02/20/17

**SAMPLE RESULTS**

Lab ID: L1704803-02  
Client ID: VES-133 (MW)  
Sample Location: MA

Date Collected: 02/15/17 14:00  
Date Received: 02/15/17  
Field Prep: Field Filtered (Dissolved Metals)

Matrix: Water  
Analytical Method: 97,8260C  
Analytical Date: 02/17/17 09:40  
Analyst: MM

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics - Westborough Lab</b>						
Methylene chloride	ND	ug/l	2.0	--	--	1
1,1-Dichloroethane	ND	ug/l	1.0	--	--	1
Chloroform	ND	ug/l	1.0	--	--	1
Carbon tetrachloride	ND	ug/l	1.0	--	--	1
1,2-Dichloropropane	ND	ug/l	1.0	--	--	1
Dibromochloromethane	ND	ug/l	1.0	--	--	1
1,1,2-Trichloroethane	ND	ug/l	1.0	--	--	1
Tetrachloroethene	ND	ug/l	1.0	--	--	1
Chlorobenzene	ND	ug/l	1.0	--	--	1
Trichlorofluoromethane	ND	ug/l	2.0	--	--	1
1,2-Dichloroethane	ND	ug/l	1.0	--	--	1
1,1,1-Trichloroethane	ND	ug/l	1.0	--	--	1
Bromodichloromethane	ND	ug/l	1.0	--	--	1
trans-1,3-Dichloropropene	ND	ug/l	0.50	--	--	1
cis-1,3-Dichloropropene	ND	ug/l	0.50	--	--	1
1,3-Dichloropropene, Total	ND	ug/l	0.50	--	--	1
1,1-Dichloropropene	ND	ug/l	2.0	--	--	1
Bromoform	ND	ug/l	2.0	--	--	1
1,1,2,2-Tetrachloroethane	ND	ug/l	1.0	--	--	1
Benzene	7.7	ug/l	0.50	--	--	1
Toluene	ND	ug/l	1.0	--	--	1
Ethylbenzene	ND	ug/l	1.0	--	--	1
Chloromethane	ND	ug/l	2.0	--	--	1
Bromomethane	ND	ug/l	2.0	--	--	1
Vinyl chloride	ND	ug/l	1.0	--	--	1
Chloroethane	ND	ug/l	2.0	--	--	1
1,1-Dichloroethene	ND	ug/l	1.0	--	--	1
trans-1,2-Dichloroethene	ND	ug/l	1.0	--	--	1
Trichloroethene	ND	ug/l	1.0	--	--	1



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704803  
**Report Date:** 02/20/17

**SAMPLE RESULTS**

Lab ID:	L1704803-02	Date Collected:	02/15/17 14:00
Client ID:	VES-133 (MW)	Date Received:	02/15/17
Sample Location:	MA	Field Prep:	Field Filtered (Dissolved Metals)

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics - Westborough Lab</b>						
1,2-Dichlorobenzene	ND	ug/l	1.0	--	--	1
1,3-Dichlorobenzene	ND	ug/l	1.0	--	--	1
1,4-Dichlorobenzene	ND	ug/l	1.0	--	--	1
Methyl tert butyl ether	ND	ug/l	2.0	--	--	1
p/m-Xylene	ND	ug/l	2.0	--	--	1
o-Xylene	ND	ug/l	1.0	--	--	1
Xylene (Total)	ND	ug/l	1.0	--	--	1
cis-1,2-Dichloroethene	ND	ug/l	1.0	--	--	1
1,2-Dichloroethene (total)	ND	ug/l	1.0	--	--	1
Dibromomethane	ND	ug/l	2.0	--	--	1
1,2,3-Trichloropropane	ND	ug/l	2.0	--	--	1
Styrene	ND	ug/l	1.0	--	--	1
Dichlorodifluoromethane	ND	ug/l	2.0	--	--	1
Acetone	ND	ug/l	5.0	--	--	1
Carbon disulfide	ND	ug/l	2.0	--	--	1
2-Butanone	ND	ug/l	5.0	--	--	1
4-Methyl-2-pentanone	ND	ug/l	5.0	--	--	1
2-Hexanone	ND	ug/l	5.0	--	--	1
Bromochloromethane	ND	ug/l	2.0	--	--	1
Tetrahydrofuran	ND	ug/l	2.0	--	--	1
2,2-Dichloropropane	ND	ug/l	2.0	--	--	1
1,2-Dibromoethane	ND	ug/l	2.0	--	--	1
1,3-Dichloropropane	ND	ug/l	2.0	--	--	1
1,1,1,2-Tetrachloroethane	ND	ug/l	1.0	--	--	1
Bromobenzene	ND	ug/l	2.0	--	--	1
n-Butylbenzene	ND	ug/l	2.0	--	--	1
sec-Butylbenzene	ND	ug/l	2.0	--	--	1
tert-Butylbenzene	ND	ug/l	2.0	--	--	1
o-Chlorotoluene	ND	ug/l	2.0	--	--	1
p-Chlorotoluene	ND	ug/l	2.0	--	--	1
1,2-Dibromo-3-chloropropane	ND	ug/l	2.0	--	--	1
Hexachlorobutadiene	ND	ug/l	0.60	--	--	1
Isopropylbenzene	ND	ug/l	2.0	--	--	1
p-Isopropyltoluene	ND	ug/l	2.0	--	--	1
Naphthalene	ND	ug/l	2.0	--	--	1
n-Propylbenzene	ND	ug/l	2.0	--	--	1
1,2,3-Trichlorobenzene	ND	ug/l	2.0	--	--	1
1,2,4-Trichlorobenzene	ND	ug/l	2.0	--	--	1



Project Name: EAST BOSTON

Lab Number: L1704803

Project Number: 43068

Report Date: 02/20/17

**SAMPLE RESULTS**

Lab ID: L1704803-02  
 Client ID: VES-133 (MW)  
 Sample Location: MA

Date Collected: 02/15/17 14:00  
 Date Received: 02/15/17  
 Field Prep: Field Filtered (Dissolved Metals)

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics - Westborough Lab</b>						
1,3,5-Trimethylbenzene	ND		ug/l	2.0	--	1
1,2,4-Trimethylbenzene	ND		ug/l	2.0	--	1
Ethyl ether	ND		ug/l	2.0	--	1
Isopropyl Ether	ND		ug/l	2.0	--	1
Ethyl-Tert-Butyl-Ether	ND		ug/l	2.0	--	1
Tertiary-Amyl Methyl Ether	ND		ug/l	2.0	--	1
1,4-Dioxane	ND		ug/l	250	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	96		70-130
Toluene-d8	99		70-130
4-Bromofluorobenzene	94		70-130
Dibromofluoromethane	99		70-130

**Project Name:** EAST BOSTON  
**Project Number:** 43068

Serial\_No:02201716:07

**Lab Number:** L1704803  
**Report Date:** 02/20/17

### SAMPLE RESULTS

Lab ID: L1704803-03  
Client ID: VES-135 (MW)  
Sample Location: MA  
  
Matrix: Water  
Analytical Method: 14,504.1  
Analytical Date: 02/17/17 16:26  
Analyst: AM

Date Collected: 02/15/17 13:00  
Date Received: 02/15/17  
Field Prep: Field Filtered (Dissolved Metals)  
Extraction Method:EPA 504.1  
Extraction Date: 02/17/17 12:35

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Microextractables by GC - Westborough Lab							
1,2-Dibromoethane	ND		ug/l	0.010	--	1	A

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704803  
**Report Date:** 02/20/17

**SAMPLE RESULTS**

Lab ID: L1704803-03  
Client ID: VES-135 (MW)  
Sample Location: MA

Date Collected: 02/15/17 13:00  
Date Received: 02/15/17  
Field Prep: Field Filtered (Dissolved Metals)

Matrix: Water  
Analytical Method: 97,8260C  
Analytical Date: 02/20/17 07:36  
Analyst: MM

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics - Westborough Lab</b>						
Methylene chloride	ND	ug/l	2.0	--	--	1
1,1-Dichloroethane	ND	ug/l	1.0	--	--	1
Chloroform	ND	ug/l	1.0	--	--	1
Carbon tetrachloride	ND	ug/l	1.0	--	--	1
1,2-Dichloropropane	ND	ug/l	1.0	--	--	1
Dibromochloromethane	ND	ug/l	1.0	--	--	1
1,1,2-Trichloroethane	ND	ug/l	1.0	--	--	1
Tetrachloroethene	ND	ug/l	1.0	--	--	1
Chlorobenzene	ND	ug/l	1.0	--	--	1
Trichlorofluoromethane	ND	ug/l	2.0	--	--	1
1,2-Dichloroethane	ND	ug/l	1.0	--	--	1
1,1,1-Trichloroethane	ND	ug/l	1.0	--	--	1
Bromodichloromethane	ND	ug/l	1.0	--	--	1
trans-1,3-Dichloropropene	ND	ug/l	0.50	--	--	1
cis-1,3-Dichloropropene	ND	ug/l	0.50	--	--	1
1,1-Dichloropropene	ND	ug/l	2.0	--	--	1
Bromoform	ND	ug/l	2.0	--	--	1
1,1,2,2-Tetrachloroethane	ND	ug/l	1.0	--	--	1
Benzene	ND	ug/l	0.50	--	--	1
Toluene	ND	ug/l	1.0	--	--	1
Ethylbenzene	ND	ug/l	1.0	--	--	1
Chloromethane	ND	ug/l	2.0	--	--	1
Bromomethane	ND	ug/l	2.0	--	--	1
Vinyl chloride	ND	ug/l	1.0	--	--	1
Chloroethane	ND	ug/l	2.0	--	--	1
1,1-Dichloroethene	ND	ug/l	1.0	--	--	1
trans-1,2-Dichloroethene	ND	ug/l	1.0	--	--	1
Trichloroethene	ND	ug/l	1.0	--	--	1
1,2-Dichlorobenzene	ND	ug/l	1.0	--	--	1



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704803  
**Report Date:** 02/20/17

**SAMPLE RESULTS**

Lab ID:	L1704803-03	Date Collected:	02/15/17 13:00
Client ID:	VES-135 (MW)	Date Received:	02/15/17
Sample Location:	MA	Field Prep:	Field Filtered (Dissolved Metals)

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics - Westborough Lab</b>						
1,3-Dichlorobenzene	ND	ug/l	1.0	--	--	1
1,4-Dichlorobenzene	ND	ug/l	1.0	--	--	1
Methyl tert butyl ether	ND	ug/l	2.0	--	--	1
p/m-Xylene	ND	ug/l	2.0	--	--	1
o-Xylene	ND	ug/l	1.0	--	--	1
cis-1,2-Dichloroethene	ND	ug/l	1.0	--	--	1
Dibromomethane	ND	ug/l	2.0	--	--	1
1,2,3-Trichloropropane	ND	ug/l	2.0	--	--	1
Styrene	ND	ug/l	1.0	--	--	1
Dichlorodifluoromethane	ND	ug/l	2.0	--	--	1
Acetone	ND	ug/l	5.0	--	--	1
Carbon disulfide	ND	ug/l	2.0	--	--	1
Methyl ethyl ketone	ND	ug/l	5.0	--	--	1
Methyl isobutyl ketone	ND	ug/l	5.0	--	--	1
2-Hexanone	ND	ug/l	5.0	--	--	1
Bromochloromethane	ND	ug/l	2.0	--	--	1
Tetrahydrofuran	ND	ug/l	2.0	--	--	1
2,2-Dichloropropane	ND	ug/l	2.0	--	--	1
1,2-Dibromoethane	ND	ug/l	2.0	--	--	1
1,3-Dichloropropane	ND	ug/l	2.0	--	--	1
1,1,1,2-Tetrachloroethane	ND	ug/l	1.0	--	--	1
Bromobenzene	ND	ug/l	2.0	--	--	1
n-Butylbenzene	ND	ug/l	2.0	--	--	1
sec-Butylbenzene	ND	ug/l	2.0	--	--	1
tert-Butylbenzene	ND	ug/l	2.0	--	--	1
o-Chlorotoluene	ND	ug/l	2.0	--	--	1
p-Chlorotoluene	ND	ug/l	2.0	--	--	1
1,2-Dibromo-3-chloropropane	ND	ug/l	2.0	--	--	1
Hexachlorobutadiene	ND	ug/l	0.60	--	--	1
Isopropylbenzene	ND	ug/l	2.0	--	--	1
p-Isopropyltoluene	ND	ug/l	2.0	--	--	1
Naphthalene	ND	ug/l	2.0	--	--	1
n-Propylbenzene	ND	ug/l	2.0	--	--	1
1,2,3-Trichlorobenzene	ND	ug/l	2.0	--	--	1
1,2,4-Trichlorobenzene	ND	ug/l	2.0	--	--	1
1,3,5-Trimethylbenzene	ND	ug/l	2.0	--	--	1
1,2,4-Trimethylbenzene	ND	ug/l	2.0	--	--	1
Diethyl ether	ND	ug/l	2.0	--	--	1



Project Name: EAST BOSTON

Lab Number: L1704803

Project Number: 43068

Report Date: 02/20/17

**SAMPLE RESULTS**

Lab ID: L1704803-03  
 Client ID: VES-135 (MW)  
 Sample Location: MA

Date Collected: 02/15/17 13:00  
 Date Received: 02/15/17  
 Field Prep: Field Filtered (Dissolved Metals)

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics - Westborough Lab</b>						
Diisopropyl Ether	ND		ug/l	2.0	--	1
Ethyl-Tert-Butyl-Ether	ND		ug/l	2.0	--	1
Tertiary-Amyl Methyl Ether	ND		ug/l	2.0	--	1
Tert-Butyl Alcohol	ND		ug/l	10	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	118		70-130
Toluene-d8	92		70-130
4-Bromofluorobenzene	98		70-130
Dibromofluoromethane	122		70-130

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704803  
**Report Date:** 02/20/17

**SAMPLE RESULTS**

Lab ID: L1704803-03  
Client ID: VES-135 (MW)  
Sample Location: MA  
Matrix: Water  
Analytical Method: 97,8260C-SIM  
Analytical Date: 02/20/17 07:36  
Analyst: MM

Date Collected: 02/15/17 13:00  
Date Received: 02/15/17  
Field Prep: Field Filtered (Dissolved Metals)

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics by SIM - Westborough Lab</b>						
1,4-Dioxane	ND		ug/l	3.0	--	1

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704803  
**Report Date:** 02/20/17

**SAMPLE RESULTS**

Lab ID: L1704803-04  
Client ID: VES-129 (MW)  
Sample Location: MA

Date Collected: 02/15/17 15:30  
Date Received: 02/15/17  
Field Prep: Field Filtered (Dissolved Metals)

Matrix: Water  
Analytical Method: 97,8260C  
Analytical Date: 02/17/17 10:11  
Analyst: PK

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics - Westborough Lab</b>						
Methylene chloride	ND	ug/l	2.0	--	--	1
1,1-Dichloroethane	ND	ug/l	1.0	--	--	1
Chloroform	ND	ug/l	1.0	--	--	1
Carbon tetrachloride	ND	ug/l	1.0	--	--	1
1,2-Dichloropropane	ND	ug/l	1.0	--	--	1
Dibromochloromethane	ND	ug/l	1.0	--	--	1
1,1,2-Trichloroethane	ND	ug/l	1.0	--	--	1
Tetrachloroethene	ND	ug/l	1.0	--	--	1
Chlorobenzene	ND	ug/l	1.0	--	--	1
Trichlorofluoromethane	ND	ug/l	2.0	--	--	1
1,2-Dichloroethane	ND	ug/l	1.0	--	--	1
1,1,1-Trichloroethane	ND	ug/l	1.0	--	--	1
Bromodichloromethane	ND	ug/l	1.0	--	--	1
trans-1,3-Dichloropropene	ND	ug/l	0.50	--	--	1
cis-1,3-Dichloropropene	ND	ug/l	0.50	--	--	1
1,3-Dichloropropene, Total	ND	ug/l	0.50	--	--	1
1,1-Dichloropropene	ND	ug/l	2.0	--	--	1
Bromoform	ND	ug/l	2.0	--	--	1
1,1,2,2-Tetrachloroethane	ND	ug/l	1.0	--	--	1
Benzene	ND	ug/l	0.50	--	--	1
Toluene	ND	ug/l	1.0	--	--	1
Ethylbenzene	ND	ug/l	1.0	--	--	1
Chloromethane	ND	ug/l	2.0	--	--	1
Bromomethane	ND	ug/l	2.0	--	--	1
Vinyl chloride	ND	ug/l	1.0	--	--	1
Chloroethane	ND	ug/l	2.0	--	--	1
1,1-Dichloroethene	ND	ug/l	1.0	--	--	1
trans-1,2-Dichloroethene	ND	ug/l	1.0	--	--	1
Trichloroethene	ND	ug/l	1.0	--	--	1



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704803  
**Report Date:** 02/20/17

**SAMPLE RESULTS**

Lab ID:	L1704803-04	Date Collected:	02/15/17 15:30
Client ID:	VES-129 (MW)	Date Received:	02/15/17
Sample Location:	MA	Field Prep:	Field Filtered (Dissolved Metals)

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics - Westborough Lab</b>						
1,2-Dichlorobenzene	ND	ug/l	1.0	--	--	1
1,3-Dichlorobenzene	ND	ug/l	1.0	--	--	1
1,4-Dichlorobenzene	ND	ug/l	1.0	--	--	1
Methyl tert butyl ether	ND	ug/l	2.0	--	--	1
p/m-Xylene	ND	ug/l	2.0	--	--	1
o-Xylene	ND	ug/l	1.0	--	--	1
Xylene (Total)	ND	ug/l	1.0	--	--	1
cis-1,2-Dichloroethene	ND	ug/l	1.0	--	--	1
1,2-Dichloroethene (total)	ND	ug/l	1.0	--	--	1
Dibromomethane	ND	ug/l	2.0	--	--	1
1,2,3-Trichloropropane	ND	ug/l	2.0	--	--	1
Styrene	ND	ug/l	1.0	--	--	1
Dichlorodifluoromethane	ND	ug/l	2.0	--	--	1
Acetone	ND	ug/l	5.0	--	--	1
Carbon disulfide	ND	ug/l	2.0	--	--	1
2-Butanone	ND	ug/l	5.0	--	--	1
4-Methyl-2-pentanone	ND	ug/l	5.0	--	--	1
2-Hexanone	ND	ug/l	5.0	--	--	1
Bromochloromethane	ND	ug/l	2.0	--	--	1
Tetrahydrofuran	ND	ug/l	2.0	--	--	1
2,2-Dichloropropane	ND	ug/l	2.0	--	--	1
1,2-Dibromoethane	ND	ug/l	2.0	--	--	1
1,3-Dichloropropane	ND	ug/l	2.0	--	--	1
1,1,1,2-Tetrachloroethane	ND	ug/l	1.0	--	--	1
Bromobenzene	ND	ug/l	2.0	--	--	1
n-Butylbenzene	ND	ug/l	2.0	--	--	1
sec-Butylbenzene	ND	ug/l	2.0	--	--	1
tert-Butylbenzene	ND	ug/l	2.0	--	--	1
o-Chlorotoluene	ND	ug/l	2.0	--	--	1
p-Chlorotoluene	ND	ug/l	2.0	--	--	1
1,2-Dibromo-3-chloropropane	ND	ug/l	2.0	--	--	1
Hexachlorobutadiene	ND	ug/l	0.60	--	--	1
Isopropylbenzene	ND	ug/l	2.0	--	--	1
p-Isopropyltoluene	ND	ug/l	2.0	--	--	1
Naphthalene	ND	ug/l	2.0	--	--	1
n-Propylbenzene	ND	ug/l	2.0	--	--	1
1,2,3-Trichlorobenzene	ND	ug/l	2.0	--	--	1
1,2,4-Trichlorobenzene	ND	ug/l	2.0	--	--	1



Project Name: EAST BOSTON

Lab Number: L1704803

Project Number: 43068

Report Date: 02/20/17

**SAMPLE RESULTS**

Lab ID: L1704803-04  
 Client ID: VES-129 (MW)  
 Sample Location: MA

Date Collected: 02/15/17 15:30  
 Date Received: 02/15/17  
 Field Prep: Field Filtered (Dissolved Metals)

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics - Westborough Lab</b>						
1,3,5-Trimethylbenzene	ND		ug/l	2.0	--	1
1,2,4-Trimethylbenzene	ND		ug/l	2.0	--	1
Ethyl ether	ND		ug/l	2.0	--	1
Isopropyl Ether	ND		ug/l	2.0	--	1
Ethyl-Tert-Butyl-Ether	ND		ug/l	2.0	--	1
Tertiary-Amyl Methyl Ether	ND		ug/l	2.0	--	1
1,4-Dioxane	ND		ug/l	250	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	94		70-130
Toluene-d8	99		70-130
4-Bromofluorobenzene	95		70-130
Dibromofluoromethane	98		70-130

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704803  
**Report Date:** 02/20/17

**SAMPLE RESULTS**

Lab ID: L1704803-05  
Client ID: VES-120 (MW)  
Sample Location: MA

Date Collected: 02/15/17 14:50  
Date Received: 02/15/17  
Field Prep: Field Filtered (Dissolved Metals)

Matrix: Water  
Analytical Method: 97,8260C  
Analytical Date: 02/17/17 10:43  
Analyst: PK

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics - Westborough Lab</b>						
Methylene chloride	ND	ug/l	2.0	--	--	1
1,1-Dichloroethane	ND	ug/l	1.0	--	--	1
Chloroform	ND	ug/l	1.0	--	--	1
Carbon tetrachloride	ND	ug/l	1.0	--	--	1
1,2-Dichloropropane	ND	ug/l	1.0	--	--	1
Dibromochloromethane	ND	ug/l	1.0	--	--	1
1,1,2-Trichloroethane	ND	ug/l	1.0	--	--	1
Tetrachloroethene	ND	ug/l	1.0	--	--	1
Chlorobenzene	ND	ug/l	1.0	--	--	1
Trichlorofluoromethane	ND	ug/l	2.0	--	--	1
1,2-Dichloroethane	ND	ug/l	1.0	--	--	1
1,1,1-Trichloroethane	ND	ug/l	1.0	--	--	1
Bromodichloromethane	ND	ug/l	1.0	--	--	1
trans-1,3-Dichloropropene	ND	ug/l	0.50	--	--	1
cis-1,3-Dichloropropene	ND	ug/l	0.50	--	--	1
1,3-Dichloropropene, Total	ND	ug/l	0.50	--	--	1
1,1-Dichloropropene	ND	ug/l	2.0	--	--	1
Bromoform	ND	ug/l	2.0	--	--	1
1,1,2,2-Tetrachloroethane	ND	ug/l	1.0	--	--	1
Benzene	ND	ug/l	0.50	--	--	1
Toluene	ND	ug/l	1.0	--	--	1
Ethylbenzene	ND	ug/l	1.0	--	--	1
Chloromethane	ND	ug/l	2.0	--	--	1
Bromomethane	ND	ug/l	2.0	--	--	1
Vinyl chloride	ND	ug/l	1.0	--	--	1
Chloroethane	ND	ug/l	2.0	--	--	1
1,1-Dichloroethene	ND	ug/l	1.0	--	--	1
trans-1,2-Dichloroethene	ND	ug/l	1.0	--	--	1
Trichloroethene	ND	ug/l	1.0	--	--	1



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704803  
**Report Date:** 02/20/17

**SAMPLE RESULTS**

Lab ID:	L1704803-05	Date Collected:	02/15/17 14:50
Client ID:	VES-120 (MW)	Date Received:	02/15/17
Sample Location:	MA	Field Prep:	Field Filtered (Dissolved Metals)

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics - Westborough Lab</b>						
1,2-Dichlorobenzene	ND	ug/l	1.0	--	--	1
1,3-Dichlorobenzene	ND	ug/l	1.0	--	--	1
1,4-Dichlorobenzene	ND	ug/l	1.0	--	--	1
Methyl tert butyl ether	ND	ug/l	2.0	--	--	1
p/m-Xylene	ND	ug/l	2.0	--	--	1
o-Xylene	ND	ug/l	1.0	--	--	1
Xylene (Total)	ND	ug/l	1.0	--	--	1
cis-1,2-Dichloroethene	ND	ug/l	1.0	--	--	1
1,2-Dichloroethene (total)	ND	ug/l	1.0	--	--	1
Dibromomethane	ND	ug/l	2.0	--	--	1
1,2,3-Trichloropropane	ND	ug/l	2.0	--	--	1
Styrene	ND	ug/l	1.0	--	--	1
Dichlorodifluoromethane	ND	ug/l	2.0	--	--	1
Acetone	ND	ug/l	5.0	--	--	1
Carbon disulfide	ND	ug/l	2.0	--	--	1
2-Butanone	ND	ug/l	5.0	--	--	1
4-Methyl-2-pentanone	ND	ug/l	5.0	--	--	1
2-Hexanone	ND	ug/l	5.0	--	--	1
Bromochloromethane	ND	ug/l	2.0	--	--	1
Tetrahydrofuran	ND	ug/l	2.0	--	--	1
2,2-Dichloropropane	ND	ug/l	2.0	--	--	1
1,2-Dibromoethane	ND	ug/l	2.0	--	--	1
1,3-Dichloropropane	ND	ug/l	2.0	--	--	1
1,1,1,2-Tetrachloroethane	ND	ug/l	1.0	--	--	1
Bromobenzene	ND	ug/l	2.0	--	--	1
n-Butylbenzene	ND	ug/l	2.0	--	--	1
sec-Butylbenzene	ND	ug/l	2.0	--	--	1
tert-Butylbenzene	ND	ug/l	2.0	--	--	1
o-Chlorotoluene	ND	ug/l	2.0	--	--	1
p-Chlorotoluene	ND	ug/l	2.0	--	--	1
1,2-Dibromo-3-chloropropane	ND	ug/l	2.0	--	--	1
Hexachlorobutadiene	ND	ug/l	0.60	--	--	1
Isopropylbenzene	ND	ug/l	2.0	--	--	1
p-Isopropyltoluene	ND	ug/l	2.0	--	--	1
Naphthalene	ND	ug/l	2.0	--	--	1
n-Propylbenzene	ND	ug/l	2.0	--	--	1
1,2,3-Trichlorobenzene	ND	ug/l	2.0	--	--	1
1,2,4-Trichlorobenzene	ND	ug/l	2.0	--	--	1



Project Name: EAST BOSTON

Lab Number: L1704803

Project Number: 43068

Report Date: 02/20/17

**SAMPLE RESULTS**

Lab ID: L1704803-05  
 Client ID: VES-120 (MW)  
 Sample Location: MA

Date Collected: 02/15/17 14:50  
 Date Received: 02/15/17  
 Field Prep: Field Filtered (Dissolved Metals)

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics - Westborough Lab</b>						
1,3,5-Trimethylbenzene	ND		ug/l	2.0	--	1
1,2,4-Trimethylbenzene	ND		ug/l	2.0	--	1
Ethyl ether	ND		ug/l	2.0	--	1
Isopropyl Ether	ND		ug/l	2.0	--	1
Ethyl-Tert-Butyl-Ether	ND		ug/l	2.0	--	1
Tertiary-Amyl Methyl Ether	ND		ug/l	2.0	--	1
1,4-Dioxane	ND		ug/l	250	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	94		70-130
Toluene-d8	98		70-130
4-Bromofluorobenzene	96		70-130
Dibromofluoromethane	98		70-130

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704803  
**Report Date:** 02/20/17

**Method Blank Analysis**  
**Batch Quality Control**

Analytical Method: 97,8260C  
Analytical Date: 02/17/17 05:29  
Analyst: MM

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics - Westborough Lab for sample(s): 01-02,04-05 Batch: WG978759-5					
Methylene chloride	ND	ug/l	2.0	--	
1,1-Dichloroethane	ND	ug/l	1.0	--	
Chloroform	ND	ug/l	1.0	--	
Carbon tetrachloride	ND	ug/l	1.0	--	
1,2-Dichloropropane	ND	ug/l	1.0	--	
Dibromochloromethane	ND	ug/l	1.0	--	
1,1,2-Trichloroethane	ND	ug/l	1.0	--	
Tetrachloroethene	ND	ug/l	1.0	--	
Chlorobenzene	ND	ug/l	1.0	--	
Trichlorofluoromethane	ND	ug/l	2.0	--	
1,2-Dichloroethane	ND	ug/l	1.0	--	
1,1,1-Trichloroethane	ND	ug/l	1.0	--	
Bromodichloromethane	ND	ug/l	1.0	--	
trans-1,3-Dichloropropene	ND	ug/l	0.50	--	
cis-1,3-Dichloropropene	ND	ug/l	0.50	--	
1,3-Dichloropropene, Total	ND	ug/l	0.50	--	
1,1-Dichloropropene	ND	ug/l	2.0	--	
Bromoform	ND	ug/l	2.0	--	
1,1,2,2-Tetrachloroethane	ND	ug/l	1.0	--	
Benzene	ND	ug/l	0.50	--	
Toluene	ND	ug/l	1.0	--	
Ethylbenzene	ND	ug/l	1.0	--	
Chloromethane	ND	ug/l	2.0	--	
Bromomethane	ND	ug/l	2.0	--	
Vinyl chloride	ND	ug/l	1.0	--	
Chloroethane	ND	ug/l	2.0	--	
1,1-Dichloroethene	ND	ug/l	1.0	--	
trans-1,2-Dichloroethene	ND	ug/l	1.0	--	
Trichloroethene	ND	ug/l	1.0	--	



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704803  
**Report Date:** 02/20/17

**Method Blank Analysis**  
**Batch Quality Control**

Analytical Method: 97,8260C  
Analytical Date: 02/17/17 05:29  
Analyst: MM

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics - Westborough Lab for sample(s):	01-02,04-05			Batch:	WG978759-5
1,2-Dichlorobenzene	ND		ug/l	1.0	--
1,3-Dichlorobenzene	ND		ug/l	1.0	--
1,4-Dichlorobenzene	ND		ug/l	1.0	--
Methyl tert butyl ether	ND		ug/l	2.0	--
p/m-Xylene	ND		ug/l	2.0	--
o-Xylene	ND		ug/l	1.0	--
Xylene (Total)	ND		ug/l	1.0	--
cis-1,2-Dichloroethene	ND		ug/l	1.0	--
1,2-Dichloroethene (total)	ND		ug/l	1.0	--
Dibromomethane	ND		ug/l	2.0	--
1,2,3-Trichloropropane	ND		ug/l	2.0	--
Styrene	ND		ug/l	1.0	--
Dichlorodifluoromethane	ND		ug/l	2.0	--
Acetone	ND		ug/l	5.0	--
Carbon disulfide	ND		ug/l	2.0	--
2-Butanone	ND		ug/l	5.0	--
4-Methyl-2-pentanone	ND		ug/l	5.0	--
2-Hexanone	ND		ug/l	5.0	--
Bromochloromethane	ND		ug/l	2.0	--
Tetrahydrofuran	ND		ug/l	2.0	--
2,2-Dichloropropane	ND		ug/l	2.0	--
1,2-Dibromoethane	ND		ug/l	2.0	--
1,3-Dichloropropane	ND		ug/l	2.0	--
1,1,1,2-Tetrachloroethane	ND		ug/l	1.0	--
Bromobenzene	ND		ug/l	2.0	--
n-Butylbenzene	ND		ug/l	2.0	--
sec-Butylbenzene	ND		ug/l	2.0	--
tert-Butylbenzene	ND		ug/l	2.0	--
o-Chlorotoluene	ND		ug/l	2.0	--



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704803  
**Report Date:** 02/20/17

### Method Blank Analysis Batch Quality Control

Analytical Method: 97,8260C  
Analytical Date: 02/17/17 05:29  
Analyst: MM

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics - Westborough Lab for sample(s):	01-02,04-05		Batch:	WG978759-5	
p-Chlorotoluene	ND		ug/l	2.0	--
1,2-Dibromo-3-chloropropane	ND		ug/l	2.0	--
Hexachlorobutadiene	ND		ug/l	0.60	--
Isopropylbenzene	ND		ug/l	2.0	--
p-Isopropyltoluene	ND		ug/l	2.0	--
Naphthalene	ND		ug/l	2.0	--
n-Propylbenzene	ND		ug/l	2.0	--
1,2,3-Trichlorobenzene	ND		ug/l	2.0	--
1,2,4-Trichlorobenzene	ND		ug/l	2.0	--
1,3,5-Trimethylbenzene	ND		ug/l	2.0	--
1,2,4-Trimethylbenzene	ND		ug/l	2.0	--
Ethyl ether	ND		ug/l	2.0	--
Isopropyl Ether	ND		ug/l	2.0	--
Ethyl-Tert-Butyl-Ether	ND		ug/l	2.0	--
Tertiary-Amyl Methyl Ether	ND		ug/l	2.0	--
1,4-Dioxane	ND		ug/l	250	--
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND		ug/l	2.0	--
tert-Butyl Alcohol	ND		ug/l	10	--
2-Chloroethylvinyl ether	ND		ug/l	10	--

#### Tentatively Identified Compounds

No Tentatively Identified Compounds ND ug/l



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704803  
**Report Date:** 02/20/17

**Method Blank Analysis**  
**Batch Quality Control**

Analytical Method: 97,8260C  
Analytical Date: 02/17/17 05:29  
Analyst: MM

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics - Westborough Lab for sample(s): 01-02,04-05 Batch: WG978759-5					

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	96		70-130
Toluene-d8	98		70-130
4-Bromofluorobenzene	93		70-130
Dibromofluoromethane	100		70-130

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704803  
**Report Date:** 02/20/17

**Method Blank Analysis**  
**Batch Quality Control**

Analytical Method: 14,504.1  
Analytical Date: 02/17/17 14:25  
Analyst: AM

Extraction Method: EPA 504.1  
Extraction Date: 02/17/17 12:35

Parameter	Result	Qualifier	Units	RL	MDL
Microextractables by GC - Westborough Lab for sample(s): 03 Batch: WG978796-1					
1,2-Dibromoethane	ND		ug/l	0.010	--

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704803  
**Report Date:** 02/20/17

### Method Blank Analysis Batch Quality Control

Analytical Method: 97,8260C  
Analytical Date: 02/20/17 06:45  
Analyst: MM

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics - Westborough Lab for sample(s): 03 Batch: WG979299-5					
Methylene chloride	ND	ug/l	2.0	--	
1,1-Dichloroethane	ND	ug/l	1.0	--	
Chloroform	ND	ug/l	1.0	--	
Carbon tetrachloride	ND	ug/l	1.0	--	
1,2-Dichloropropane	ND	ug/l	1.0	--	
Dibromochloromethane	ND	ug/l	1.0	--	
1,1,2-Trichloroethane	ND	ug/l	1.0	--	
Tetrachloroethene	ND	ug/l	1.0	--	
Chlorobenzene	ND	ug/l	1.0	--	
Trichlorofluoromethane	ND	ug/l	2.0	--	
1,2-Dichloroethane	ND	ug/l	1.0	--	
1,1,1-Trichloroethane	ND	ug/l	1.0	--	
Bromodichloromethane	ND	ug/l	1.0	--	
trans-1,3-Dichloropropene	ND	ug/l	0.50	--	
cis-1,3-Dichloropropene	ND	ug/l	0.50	--	
1,1-Dichloropropene	ND	ug/l	2.0	--	
Bromoform	ND	ug/l	2.0	--	
1,1,2,2-Tetrachloroethane	ND	ug/l	1.0	--	
Benzene	ND	ug/l	0.50	--	
Toluene	ND	ug/l	1.0	--	
Ethylbenzene	ND	ug/l	1.0	--	
Chloromethane	ND	ug/l	2.0	--	
Bromomethane	ND	ug/l	2.0	--	
Vinyl chloride	ND	ug/l	1.0	--	
Chloroethane	ND	ug/l	2.0	--	
1,1-Dichloroethene	ND	ug/l	1.0	--	
trans-1,2-Dichloroethene	ND	ug/l	1.0	--	
Trichloroethene	ND	ug/l	1.0	--	
1,2-Dichlorobenzene	ND	ug/l	1.0	--	



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704803  
**Report Date:** 02/20/17

**Method Blank Analysis**  
**Batch Quality Control**

Analytical Method: 97,8260C  
Analytical Date: 02/20/17 06:45  
Analyst: MM

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics - Westborough Lab for sample(s):	03	Batch:	WG979299-5		
1,3-Dichlorobenzene	ND	ug/l	1.0	--	
1,4-Dichlorobenzene	ND	ug/l	1.0	--	
Methyl tert butyl ether	ND	ug/l	2.0	--	
p/m-Xylene	ND	ug/l	2.0	--	
o-Xylene	ND	ug/l	1.0	--	
cis-1,2-Dichloroethene	ND	ug/l	1.0	--	
Dibromomethane	ND	ug/l	2.0	--	
1,2,3-Trichloropropane	ND	ug/l	2.0	--	
Styrene	ND	ug/l	1.0	--	
Dichlorodifluoromethane	ND	ug/l	2.0	--	
Acetone	ND	ug/l	5.0	--	
Carbon disulfide	ND	ug/l	2.0	--	
Methyl ethyl ketone	ND	ug/l	5.0	--	
Methyl isobutyl ketone	ND	ug/l	5.0	--	
2-Hexanone	ND	ug/l	5.0	--	
Bromochloromethane	ND	ug/l	2.0	--	
Tetrahydrofuran	ND	ug/l	2.0	--	
2,2-Dichloropropane	ND	ug/l	2.0	--	
1,2-Dibromoethane	ND	ug/l	2.0	--	
1,3-Dichloropropane	ND	ug/l	2.0	--	
1,1,1,2-Tetrachloroethane	ND	ug/l	1.0	--	
Bromobenzene	ND	ug/l	2.0	--	
n-Butylbenzene	ND	ug/l	2.0	--	
sec-Butylbenzene	ND	ug/l	2.0	--	
tert-Butylbenzene	ND	ug/l	2.0	--	
o-Chlorotoluene	ND	ug/l	2.0	--	
p-Chlorotoluene	ND	ug/l	2.0	--	
1,2-Dibromo-3-chloropropane	ND	ug/l	2.0	--	
Hexachlorobutadiene	ND	ug/l	0.60	--	



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704803  
**Report Date:** 02/20/17

### Method Blank Analysis Batch Quality Control

Analytical Method: 97,8260C  
Analytical Date: 02/20/17 06:45  
Analyst: MM

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics - Westborough Lab for sample(s):	03	Batch:	WG979299-5		
Isopropylbenzene	ND		ug/l	2.0	--
p-Isopropyltoluene	ND		ug/l	2.0	--
Naphthalene	ND		ug/l	2.0	--
n-Propylbenzene	ND		ug/l	2.0	--
1,2,3-Trichlorobenzene	ND		ug/l	2.0	--
1,2,4-Trichlorobenzene	ND		ug/l	2.0	--
1,3,5-Trimethylbenzene	ND		ug/l	2.0	--
1,2,4-Trimethylbenzene	ND		ug/l	2.0	--
Diethyl ether	ND		ug/l	2.0	--
Diisopropyl Ether	ND		ug/l	2.0	--
Ethyl-Tert-Butyl-Ether	ND		ug/l	2.0	--
Tertiary-Amyl Methyl Ether	ND		ug/l	2.0	--
1,4-Dioxane	ND		ug/l	250	--
Tert-Butyl Alcohol	ND		ug/l	10	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	113		70-130
Toluene-d8	94		70-130
4-Bromofluorobenzene	99		70-130
Dibromofluoromethane	118		70-130

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704803  
**Report Date:** 02/20/17

**Method Blank Analysis**  
**Batch Quality Control**

Analytical Method: 97,8260C-SIM  
Analytical Date: 02/20/17 06:45  
Analyst: MM

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics by SIM - Westborough Lab for sample(s): 03 Batch: WG979334-5					
1,4-Dioxane	ND		ug/l	3.0	--

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704803  
**Report Date:** 02/20/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics - Westborough Lab Associated sample(s): 01-02,04-05 Batch: WG978759-3 WG978759-4								
Methylene chloride	110		100		70-130	10		20
1,1-Dichloroethane	98		100		70-130	2		20
Chloroform	97		100		70-130	3		20
Carbon tetrachloride	84		92		70-130	9		20
1,2-Dichloropropane	100		100		70-130	0		20
Dibromochloromethane	92		97		70-130	5		20
1,1,2-Trichloroethane	100		100		70-130	0		20
Tetrachloroethene	100		110		70-130	10		20
Chlorobenzene	99		100		70-130	1		20
Trichlorofluoromethane	100		110		70-130	10		20
1,2-Dichloroethane	100		100		70-130	0		20
1,1,1-Trichloroethane	96		100		70-130	4		20
Bromodichloromethane	94		99		70-130	5		20
trans-1,3-Dichloropropene	86		91		70-130	6		20
cis-1,3-Dichloropropene	87		91		70-130	4		20
1,1-Dichloropropene	99		100		70-130	1		20
Bromoform	100		87		70-130	14		20
1,1,2,2-Tetrachloroethane	130		100		70-130	26	Q	20
Benzene	100		100		70-130	0		20
Toluene	100		100		70-130	0		20
Ethylbenzene	90		96		70-130	6		20

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704803  
**Report Date:** 02/20/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics - Westborough Lab Associated sample(s): 01-02,04-05 Batch: WG978759-3 WG978759-4								
Chloromethane	81		88		70-130	8		20
Bromomethane	89		99		70-130	11		20
Vinyl chloride	110		110		70-130	0		20
Chloroethane	100		110		70-130	10		20
1,1-Dichloroethene	100		110		70-130	10		20
trans-1,2-Dichloroethene	100		100		70-130	0		20
Trichloroethene	98		100		70-130	2		20
1,2-Dichlorobenzene	100		100		70-130	0		20
1,3-Dichlorobenzene	97		100		70-130	3		20
1,4-Dichlorobenzene	96		100		70-130	4		20
Methyl tert butyl ether	110		100		70-130	10		20
p/m-Xylene	80		90		70-130	12		20
o-Xylene	80		95		70-130	17		20
cis-1,2-Dichloroethene	100		100		70-130	0		20
Dibromomethane	100		100		70-130	0		20
1,2,3-Trichloropropane	130		100		70-130	26	Q	20
Styrene	80		95		70-130	17		20
Dichlorodifluoromethane	100		98		70-130	2		20
Acetone	110		100		70-130	10		20
Carbon disulfide	94		100		70-130	6		20
2-Butanone	110		97		70-130	13		20

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704803  
**Report Date:** 02/20/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics - Westborough Lab Associated sample(s): 01-02,04-05 Batch: WG978759-3 WG978759-4								
4-Methyl-2-pentanone	110		99		70-130	11		20
2-Hexanone	110		98		70-130	12		20
Bromochloromethane	110		110		70-130	0		20
Tetrahydrofuran	110		100		70-130	10		20
2,2-Dichloropropane	88		96		70-130	9		20
1,2-Dibromoethane	100		100		70-130	0		20
1,3-Dichloropropane	100		100		70-130	0		20
1,1,1,2-Tetrachloroethane	94		98		70-130	4		20
Bromobenzene	120		100		70-130	18		20
n-Butylbenzene	85		100		70-130	16		20
sec-Butylbenzene	96		100		70-130	4		20
tert-Butylbenzene	95		98		70-130	3		20
o-Chlorotoluene	96		96		70-130	0		20
p-Chlorotoluene	93		96		70-130	3		20
1,2-Dibromo-3-chloropropane	120		100		70-130	18		20
Hexachlorobutadiene	110		100		70-130	10		20
Isopropylbenzene	100		99		70-130	1		20
p-Isopropyltoluene	88		100		70-130	13		20
Naphthalene	86		100		70-130	15		20
n-Propylbenzene	95		97		70-130	2		20
1,2,3-Trichlorobenzene	90		110		70-130	20		20

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704803  
**Report Date:** 02/20/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics - Westborough Lab Associated sample(s): 01-02,04-05 Batch: WG978759-3 WG978759-4								
1,2,4-Trichlorobenzene	86		100		70-130	15		20
1,3,5-Trimethylbenzene	78		95		70-130	20		20
1,2,4-Trimethylbenzene	77		97		70-130	23	Q	20
Ethyl ether	110		110		70-130	0		20
Isopropyl Ether	110		100		70-130	10		20
Ethyl-Tert-Butyl-Ether	110		110		70-130	0		20
Tertiary-Amyl Methyl Ether	110		100		70-130	10		20
1,4-Dioxane	100		104		70-130	4		20
1,1,2-Trichloro-1,2,2-Trifluoroethane	110		110		70-130	0		20
tert-Butyl Alcohol	102		98		70-130	4		20
2-Chloroethylvinyl ether	92		97		70-130	5		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	95		93		70-130
Toluene-d8	100		101		70-130
4-Bromofluorobenzene	115		99		70-130
Dibromofluoromethane	97		97		70-130

**Lab Control Sample Analysis**  
**Batch Quality Control**

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704803  
**Report Date:** 02/20/17

<b>Parameter</b>	<i>LCS</i> %Recovery	<i>LCSD</i> %Recovery	<i>RPD</i>	<i>Qual</i>	<i>%Recovery</i> Limits	<i>RPD</i> Limits	<i>Column</i>
	<i>Qual</i>	<i>Qual</i>					
Microextractables by GC - Westborough Lab Associated sample(s): 03 Batch: WG978796-2							
1,2-Dibromoethane	96	-	70-130	-	20	A	

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704803  
**Report Date:** 02/20/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics - Westborough Lab Associated sample(s): 03 Batch: WG979299-3 WG979299-4								
Methylene chloride	100		110		70-130	10		20
1,1-Dichloroethane	110		110		70-130	0		20
Chloroform	110		110		70-130	0		20
Carbon tetrachloride	120		120		70-130	0		20
1,2-Dichloropropane	100		100		70-130	0		20
Dibromochloromethane	110		110		70-130	0		20
1,1,2-Trichloroethane	100		100		70-130	0		20
Tetrachloroethene	110		110		70-130	0		20
Chlorobenzene	100		99		70-130	1		20
Trichlorofluoromethane	130		120		70-130	8		20
1,2-Dichloroethane	110		110		70-130	0		20
1,1,1-Trichloroethane	120		120		70-130	0		20
Bromodichloromethane	110		100		70-130	10		20
trans-1,3-Dichloropropene	98		98		70-130	0		20
cis-1,3-Dichloropropene	100		100		70-130	0		20
1,1-Dichloropropene	100		100		70-130	0		20
Bromoform	93		94		70-130	1		20
1,1,2,2-Tetrachloroethane	91		92		70-130	1		20
Benzene	100		100		70-130	0		20
Toluene	100		99		70-130	1		20
Ethylbenzene	100		100		70-130	0		20

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704803  
**Report Date:** 02/20/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics - Westborough Lab Associated sample(s): 03 Batch: WG979299-3 WG979299-4								
Chloromethane	110		100		70-130	10		20
Bromomethane	93		110		70-130	17		20
Vinyl chloride	100		100		70-130	0		20
Chloroethane	100		89		70-130	12		20
1,1-Dichloroethene	110		88		70-130	22	Q	20
trans-1,2-Dichloroethene	100		100		70-130	0		20
Trichloroethene	110		110		70-130	0		20
1,2-Dichlorobenzene	95		95		70-130	0		20
1,3-Dichlorobenzene	99		97		70-130	2		20
1,4-Dichlorobenzene	97		95		70-130	2		20
Methyl tert butyl ether	98		100		70-130	2		20
p/m-Xylene	105		100		70-130	5		20
o-Xylene	100		95		70-130	5		20
cis-1,2-Dichloroethene	100		100		70-130	0		20
Dibromomethane	110		110		70-130	0		20
1,2,3-Trichloropropane	92		89		70-130	3		20
Styrene	95		90		70-130	5		20
Dichlorodifluoromethane	100		100		70-130	0		20
Acetone	110		110		70-130	0		20
Carbon disulfide	110		85		70-130	26	Q	20
Methyl ethyl ketone	100		100		70-130	0		20

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704803  
**Report Date:** 02/20/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics - Westborough Lab Associated sample(s): 03 Batch: WG979299-3 WG979299-4								
Methyl isobutyl ketone	82		88		70-130	7		20
2-Hexanone	75		74		70-130	1		20
Bromochloromethane	120		120		70-130	0		20
Tetrahydrofuran	98		100		70-130	2		20
2,2-Dichloropropane	120		110		70-130	9		20
1,2-Dibromoethane	100		100		70-130	0		20
1,3-Dichloropropane	99		100		70-130	1		20
1,1,1,2-Tetrachloroethane	110		110		70-130	0		20
Bromobenzene	94		94		70-130	0		20
n-Butylbenzene	91		90		70-130	1		20
sec-Butylbenzene	120		100		70-130	18		20
tert-Butylbenzene	86		84		70-130	2		20
o-Chlorotoluene	97		96		70-130	1		20
p-Chlorotoluene	94		94		70-130	0		20
1,2-Dibromo-3-chloropropane	91		94		70-130	3		20
Hexachlorobutadiene	99		98		70-130	1		20
Isopropylbenzene	85		84		70-130	1		20
p-Isopropyltoluene	88		86		70-130	2		20
Naphthalene	71		74		70-130	4		20
n-Propylbenzene	93		93		70-130	0		20
1,2,3-Trichlorobenzene	90		93		70-130	3		20

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704803  
**Report Date:** 02/20/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics - Westborough Lab Associated sample(s): 03 Batch: WG979299-3 WG979299-4								
1,2,4-Trichlorobenzene	82		81		70-130	1		20
1,3,5-Trimethylbenzene	93		91		70-130	2		20
1,2,4-Trimethylbenzene	91		89		70-130	2		20
Diethyl ether	99		81		70-130	20		20
Diisopropyl Ether	90		92		70-130	2		20
Ethyl-Tert-Butyl-Ether	97		100		70-130	3		20
Tertiary-Amyl Methyl Ether	94		98		70-130	4		20
1,4-Dioxane	92		102		70-130	10		20
Tert-Butyl Alcohol	100		110		70-130	10		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	104		105		70-130
Toluene-d8	96		96		70-130
4-Bromofluorobenzene	92		95		70-130
Dibromofluoromethane	104		105		70-130

**Lab Control Sample Analysis**  
**Batch Quality Control**

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704803  
**Report Date:** 02/20/17

<b>Parameter</b>	<i>LCS</i> <i>%Recovery</i>	<i>Qual</i>	<i>LCSD</i> <i>%Recovery</i>	<i>Qual</i>	<i>%Recovery</i> <i>Limits</i>	<i>RPD</i>	<i>Qual</i>	<i>RPD</i> <i>Limits</i>
MCP Volatile Organics by SIM - Westborough Lab Associated sample(s): 03 Batch: WG979334-3 WG979334-4								
1,4-Dioxane	100		110		70-130	10		20

**Matrix Spike Analysis**  
**Batch Quality Control**

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704803  
**Report Date:** 02/20/17

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	RPD Qual	RPD Limits	Column
Microextractables by GC - Westborough Lab Associated sample(s): 03 QC Batch ID: WG978796-3 QC Sample: L1704993-01 Client ID: MS Sample													
1,2-Dibromoethane	ND	0.252	0.256	102		-	-		70-130	-	20	A	
1,2-Dibromo-3-chloropropane	ND	0.252	0.225	89		-	-		70-130	-	20	A	

# **SEMIVOLATILES**



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704803  
**Report Date:** 02/20/17

**SAMPLE RESULTS**

Lab ID: L1704803-03  
Client ID: VES-135 (MW)  
Sample Location: MA  
Matrix: Water  
Analytical Method: 1,8270D  
Analytical Date: 02/18/17 17:06  
Analyst: RC

Date Collected: 02/15/17 13:00  
Date Received: 02/15/17  
Field Prep: Field Filtered (Dissolved Metals)  
Extraction Method:EPA 3510C  
Extraction Date: 02/16/17 05:39

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>Semivolatile Organics by GC/MS - Westborough Lab</b>						
Benzidine	ND	ug/l	19	--	--	1
1,2,4-Trichlorobenzene	ND	ug/l	4.8	--	--	1
Bis(2-chloroethyl)ether	ND	ug/l	1.9	--	--	1
1,2-Dichlorobenzene	ND	ug/l	1.9	--	--	1
1,3-Dichlorobenzene	ND	ug/l	1.9	--	--	1
1,4-Dichlorobenzene	ND	ug/l	1.9	--	--	1
3,3'-Dichlorobenzidine	ND	ug/l	4.8	--	--	1
2,4-Dinitrotoluene	ND	ug/l	4.8	--	--	1
2,6-Dinitrotoluene	ND	ug/l	4.8	--	--	1
Azobenzene	ND	ug/l	1.9	--	--	1
4-Chlorophenyl phenyl ether	ND	ug/l	1.9	--	--	1
4-Bromophenyl phenyl ether	ND	ug/l	1.9	--	--	1
Bis(2-chloroisopropyl)ether	ND	ug/l	1.9	--	--	1
Bis(2-chloroethoxy)methane	ND	ug/l	4.8	--	--	1
Hexachlorocyclopentadiene	ND	ug/l	19	--	--	1
Isophorone	ND	ug/l	4.8	--	--	1
Nitrobenzene	ND	ug/l	1.9	--	--	1
NDPA/DPA	ND	ug/l	1.9	--	--	1
n-Nitrosodi-n-propylamine	ND	ug/l	4.8	--	--	1
Bis(2-ethylhexyl)phthalate	ND	ug/l	2.9	--	--	1
Butyl benzyl phthalate	ND	ug/l	4.8	--	--	1
Di-n-butylphthalate	ND	ug/l	4.8	--	--	1
Di-n-octylphthalate	ND	ug/l	4.8	--	--	1
Diethyl phthalate	ND	ug/l	4.8	--	--	1
Dimethyl phthalate	ND	ug/l	4.8	--	--	1
Biphenyl	ND	ug/l	1.9	--	--	1
Aniline	ND	ug/l	1.9	--	--	1
4-Chloroaniline	ND	ug/l	4.8	--	--	1
2-Nitroaniline	ND	ug/l	4.8	--	--	1



Project Name: EAST BOSTON

Lab Number: L1704803

Project Number: 43068

Report Date: 02/20/17

**SAMPLE RESULTS**

Lab ID:	L1704803-03	Date Collected:	02/15/17 13:00
Client ID:	VES-135 (MW)	Date Received:	02/15/17
Sample Location:	MA	Field Prep:	Field Filtered (Dissolved Metals)

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
3-Nitroaniline	ND		ug/l	4.8	--	1
4-Nitroaniline	ND		ug/l	4.8	--	1
Dibenzofuran	ND		ug/l	1.9	--	1
n-Nitrosodimethylamine	ND		ug/l	1.9	--	1
2,4,6-Trichlorophenol	ND		ug/l	4.8	--	1
p-Chloro-m-cresol	ND		ug/l	1.9	--	1
2-Chlorophenol	ND		ug/l	1.9	--	1
2,4-Dichlorophenol	ND		ug/l	4.8	--	1
2,4-Dimethylphenol	ND		ug/l	4.8	--	1
2-Nitrophenol	ND		ug/l	9.6	--	1
4-Nitrophenol	ND		ug/l	9.6	--	1
2,4-Dinitrophenol	ND		ug/l	19	--	1
4,6-Dinitro-o-cresol	ND		ug/l	9.6	--	1
Phenol	ND		ug/l	4.8	--	1
2-Methylphenol	ND		ug/l	4.8	--	1
3-Methylphenol/4-Methylphenol	ND		ug/l	4.8	--	1
2,4,5-Trichlorophenol	ND		ug/l	4.8	--	1
Benzoic Acid	ND		ug/l	48	--	1
Benzyl Alcohol	ND		ug/l	1.9	--	1
Carbazole	ND		ug/l	1.9	--	1
Pyridine	ND		ug/l	3.4	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	44		21-120
Phenol-d6	32		10-120
Nitrobenzene-d5	67		23-120
2-Fluorobiphenyl	62		15-120
2,4,6-Tribromophenol	63		10-120
4-Terphenyl-d14	64		41-149

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704803  
**Report Date:** 02/20/17

**SAMPLE RESULTS**

Lab ID: L1704803-03  
Client ID: VES-135 (MW)  
Sample Location: MA  
Matrix: Water  
Analytical Method: 1,8270D-SIM  
Analytical Date: 02/17/17 17:55  
Analyst: DV

Date Collected: 02/15/17 13:00  
Date Received: 02/15/17  
Field Prep: Field Filtered (Dissolved Metals)  
Extraction Method:EPA 3510C  
Extraction Date: 02/16/17 05:40

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>Semivolatile Organics by GC/MS-SIM - Westborough Lab</b>						
Acenaphthene	ND	ug/l	0.10	--	--	1
2-Chloronaphthalene	ND	ug/l	0.19	--	--	1
Fluoranthene	ND	ug/l	0.19	--	--	1
Hexachlorobutadiene	ND	ug/l	0.48	--	--	1
Naphthalene	ND	ug/l	0.19	--	--	1
Benzo(a)anthracene	ND	ug/l	0.19	--	--	1
Benzo(a)pyrene	ND	ug/l	0.19	--	--	1
Benzo(b)fluoranthene	ND	ug/l	0.19	--	--	1
Benzo(k)fluoranthene	ND	ug/l	0.19	--	--	1
Chrysene	ND	ug/l	0.19	--	--	1
Acenaphthylene	ND	ug/l	0.19	--	--	1
Anthracene	ND	ug/l	0.19	--	--	1
Benzo(ghi)perylene	ND	ug/l	0.19	--	--	1
Fluorene	ND	ug/l	0.19	--	--	1
Phenanthrene	ND	ug/l	0.19	--	--	1
Dibenzo(a,h)anthracene	ND	ug/l	0.19	--	--	1
Indeno(1,2,3-cd)pyrene	ND	ug/l	0.19	--	--	1
Pyrene	ND	ug/l	0.19	--	--	1
1-Methylnaphthalene	ND	ug/l	0.19	--	--	1
2-Methylnaphthalene	ND	ug/l	0.19	--	--	1
Pentachlorophenol	ND	ug/l	0.77	--	--	1
Hexachlorobenzene	ND	ug/l	0.77	--	--	1
Hexachloroethane	ND	ug/l	0.77	--	--	1

Project Name: EAST BOSTON

Lab Number: L1704803

Project Number: 43068

Report Date: 02/20/17

**SAMPLE RESULTS**

Lab ID: L1704803-03  
 Client ID: VES-135 (MW)  
 Sample Location: MA

Date Collected: 02/15/17 13:00  
 Date Received: 02/15/17  
 Field Prep: Field Filtered (Dissolved Metals)

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
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Semivolatile Organics by GC/MS-SIM - Westborough Lab

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	43		21-120
Phenol-d6	34		10-120
Nitrobenzene-d5	69		23-120
2-Fluorobiphenyl	65		15-120
2,4,6-Tribromophenol	80		10-120
4-Terphenyl-d14	74		41-149

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704803  
**Report Date:** 02/20/17

### Method Blank Analysis Batch Quality Control

Analytical Method: 1,8270D  
Analytical Date: 02/18/17 14:59  
Analyst: RC

Extraction Method: EPA 3510C  
Extraction Date: 02/16/17 05:39

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 03 Batch: WG978284-1					
Acenaphthene	ND	ug/l	2.0	--	
Benzidine	ND	ug/l	20	--	
1,2,4-Trichlorobenzene	ND	ug/l	5.0	--	
Hexachlorobenzene	ND	ug/l	2.0	--	
Bis(2-chloroethyl)ether	ND	ug/l	2.0	--	
2-Chloronaphthalene	ND	ug/l	2.0	--	
1,2-Dichlorobenzene	ND	ug/l	2.0	--	
1,3-Dichlorobenzene	ND	ug/l	2.0	--	
1,4-Dichlorobenzene	ND	ug/l	2.0	--	
3,3'-Dichlorobenzidine	ND	ug/l	5.0	--	
2,4-Dinitrotoluene	ND	ug/l	5.0	--	
2,6-Dinitrotoluene	ND	ug/l	5.0	--	
Azobenzene	ND	ug/l	2.0	--	
Fluoranthene	ND	ug/l	2.0	--	
4-Chlorophenyl phenyl ether	ND	ug/l	2.0	--	
4-Bromophenyl phenyl ether	ND	ug/l	2.0	--	
Bis(2-chloroisopropyl)ether	ND	ug/l	2.0	--	
Bis(2-chloroethoxy)methane	ND	ug/l	5.0	--	
Hexachlorobutadiene	ND	ug/l	2.0	--	
Hexachlorocyclopentadiene	ND	ug/l	20	--	
Hexachloroethane	ND	ug/l	2.0	--	
Isophorone	ND	ug/l	5.0	--	
Naphthalene	ND	ug/l	2.0	--	
Nitrobenzene	ND	ug/l	2.0	--	
NDPA/DPA	ND	ug/l	2.0	--	
n-Nitrosodi-n-propylamine	ND	ug/l	5.0	--	
Bis(2-ethylhexyl)phthalate	ND	ug/l	3.0	--	
Butyl benzyl phthalate	ND	ug/l	5.0	--	
Di-n-butylphthalate	ND	ug/l	5.0	--	



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704803  
**Report Date:** 02/20/17

### Method Blank Analysis Batch Quality Control

Analytical Method: 1,8270D  
Analytical Date: 02/18/17 14:59  
Analyst: RC

Extraction Method: EPA 3510C  
Extraction Date: 02/16/17 05:39

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 03 Batch: WG978284-1					
Di-n-octylphthalate	ND		ug/l	5.0	--
Diethyl phthalate	ND		ug/l	5.0	--
Dimethyl phthalate	ND		ug/l	5.0	--
Benzo(a)anthracene	ND		ug/l	2.0	--
Benzo(a)pyrene	ND		ug/l	2.0	--
Benzo(b)fluoranthene	ND		ug/l	2.0	--
Benzo(k)fluoranthene	ND		ug/l	2.0	--
Chrysene	ND		ug/l	2.0	--
Acenaphthylene	ND		ug/l	2.0	--
Anthracene	ND		ug/l	2.0	--
Benzo(ghi)perylene	ND		ug/l	2.0	--
Fluorene	ND		ug/l	2.0	--
Phenanthrene	ND		ug/l	2.0	--
Dibenzo(a,h)anthracene	ND		ug/l	2.0	--
Indeno(1,2,3-cd)pyrene	ND		ug/l	2.0	--
Pyrene	ND		ug/l	2.0	--
Biphenyl	ND		ug/l	2.0	--
Aniline	ND		ug/l	2.0	--
4-Chloroaniline	ND		ug/l	5.0	--
1-Methylnaphthalene	ND		ug/l	2.0	--
2-Nitroaniline	ND		ug/l	5.0	--
3-Nitroaniline	ND		ug/l	5.0	--
4-Nitroaniline	ND		ug/l	5.0	--
Dibenzofuran	ND		ug/l	2.0	--
2-Methylnaphthalene	ND		ug/l	2.0	--
n-Nitrosodimethylamine	ND		ug/l	2.0	--
2,4,6-Trichlorophenol	ND		ug/l	5.0	--
p-Chloro-m-cresol	ND		ug/l	2.0	--
2-Chlorophenol	ND		ug/l	2.0	--



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704803  
**Report Date:** 02/20/17

### Method Blank Analysis Batch Quality Control

Analytical Method: 1,8270D  
Analytical Date: 02/18/17 14:59  
Analyst: RC

Extraction Method: EPA 3510C  
Extraction Date: 02/16/17 05:39

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 03 Batch: WG978284-1					
2,4-Dichlorophenol	ND		ug/l	5.0	--
2,4-Dimethylphenol	ND		ug/l	5.0	--
2-Nitrophenol	ND		ug/l	10	--
4-Nitrophenol	ND		ug/l	10	--
2,4-Dinitrophenol	ND		ug/l	20	--
4,6-Dinitro-o-cresol	ND		ug/l	10	--
Pentachlorophenol	ND		ug/l	10	--
Phenol	ND		ug/l	5.0	--
2-Methylphenol	ND		ug/l	5.0	--
3-Methylphenol/4-Methylphenol	ND		ug/l	5.0	--
2,4,5-Trichlorophenol	ND		ug/l	5.0	--
Benzoic Acid	ND		ug/l	50	--
Benzyl Alcohol	ND		ug/l	2.0	--
Carbazole	ND		ug/l	2.0	--
Pyridine	ND		ug/l	3.5	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	41		21-120
Phenol-d6	29		10-120
Nitrobenzene-d5	68		23-120
2-Fluorobiphenyl	64		15-120
2,4,6-Tribromophenol	73		10-120
4-Terphenyl-d14	67		41-149

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704803  
**Report Date:** 02/20/17

### Method Blank Analysis Batch Quality Control

Analytical Method: 1,8270D-SIM  
Analytical Date: 02/17/17 13:33  
Analyst: DV

Extraction Method: EPA 3510C  
Extraction Date: 02/16/17 05:40

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS-SIM - Westborough Lab for sample(s):	03			Batch:	WG978285-1
Acenaphthene	ND		ug/l	0.10	--
2-Chloronaphthalene	ND		ug/l	0.20	--
Fluoranthene	ND		ug/l	0.20	--
Hexachlorobutadiene	ND		ug/l	0.50	--
Naphthalene	ND		ug/l	0.20	--
Benzo(a)anthracene	ND		ug/l	0.20	--
Benzo(a)pyrene	ND		ug/l	0.20	--
Benzo(b)fluoranthene	ND		ug/l	0.20	--
Benzo(k)fluoranthene	ND		ug/l	0.20	--
Chrysene	ND		ug/l	0.20	--
Acenaphthylene	ND		ug/l	0.20	--
Anthracene	ND		ug/l	0.20	--
Benzo(ghi)perylene	ND		ug/l	0.20	--
Fluorene	ND		ug/l	0.20	--
Phenanthrene	ND		ug/l	0.20	--
Dibenzo(a,h)anthracene	ND		ug/l	0.20	--
Indeno(1,2,3-cd)pyrene	ND		ug/l	0.20	--
Pyrene	ND		ug/l	0.20	--
1-Methylnaphthalene	ND		ug/l	0.20	--
2-Methylnaphthalene	ND		ug/l	0.20	--
Pentachlorophenol	ND		ug/l	0.80	--
Hexachlorobenzene	ND		ug/l	0.80	--
Hexachloroethane	ND		ug/l	0.80	--

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704803  
**Report Date:** 02/20/17

### Method Blank Analysis Batch Quality Control

Analytical Method: 1,8270D-SIM  
Analytical Date: 02/17/17 13:33  
Analyst: DV

Extraction Method: EPA 3510C  
Extraction Date: 02/16/17 05:40

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS-SIM - Westborough Lab for sample(s): 03 Batch: WG978285-1					

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	44		21-120
Phenol-d6	33		10-120
Nitrobenzene-d5	77		23-120
2-Fluorobiphenyl	70		15-120
2,4,6-Tribromophenol	91		10-120
4-Terphenyl-d14	92		41-149

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704803  
**Report Date:** 02/20/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 03 Batch: WG978284-2 WG978284-3								
Acenaphthene	79		79		37-111	0		30
Benzidine	9	Q	5	Q	10-75	57	Q	30
1,2,4-Trichlorobenzene	67		68		39-98	1		30
Hexachlorobenzene	68		72		40-140	6		30
Bis(2-chloroethyl)ether	77		77		40-140	0		30
2-Chloronaphthalene	75		76		40-140	1		30
1,2-Dichlorobenzene	68		66		40-140	3		30
1,3-Dichlorobenzene	65		65		40-140	0		30
1,4-Dichlorobenzene	66		66		36-97	0		30
3,3'-Dichlorobenzidine	63		64		40-140	2		30
2,4-Dinitrotoluene	84		88		48-143	5		30
2,6-Dinitrotoluene	89		93		40-140	4		30
Azobenzene	93		90		40-140	3		30
Fluoranthene	79		81		40-140	3		30
4-Chlorophenyl phenyl ether	72		75		40-140	4		30
4-Bromophenyl phenyl ether	71		70		40-140	1		30
Bis(2-chloroisopropyl)ether	80		77		40-140	4		30
Bis(2-chloroethoxy)methane	79		82		40-140	4		30
Hexachlorobutadiene	63		64		40-140	2		30
Hexachlorocyclopentadiene	62		66		40-140	6		30
Hexachloroethane	70		68		40-140	3		30

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704803  
**Report Date:** 02/20/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 03 Batch: WG978284-2 WG978284-3								
Isophorone	81		81		40-140	0		30
Naphthalene	72		72		40-140	0		30
Nitrobenzene	89		87		40-140	2		30
NDPA/DPA	78		78		40-140	0		30
n-Nitrosodi-n-propylamine	83		83		29-132	0		30
Bis(2-ethylhexyl)phthalate	86		89		40-140	3		30
Butyl benzyl phthalate	81		86		40-140	6		30
Di-n-butylphthalate	83		87		40-140	5		30
Di-n-octylphthalate	85		89		40-140	5		30
Diethyl phthalate	78		80		40-140	3		30
Dimethyl phthalate	78		79		40-140	1		30
Benzo(a)anthracene	79		80		40-140	1		30
Benzo(a)pyrene	75		79		40-140	5		30
Benzo(b)fluoranthene	74		79		40-140	7		30
Benzo(k)fluoranthene	75		77		40-140	3		30
Chrysene	76		77		40-140	1		30
Acenaphthylene	79		80		45-123	1		30
Anthracene	82		83		40-140	1		30
Benzo(ghi)perylene	74		76		40-140	3		30
Fluorene	76		77		40-140	1		30
Phenanthrene	80		80		40-140	0		30

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704803  
**Report Date:** 02/20/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 03 Batch: WG978284-2 WG978284-3								
Dibenzo(a,h)anthracene	74		75		40-140	1		30
Indeno(1,2,3-cd)pyrene	73		74		40-140	1		30
Pyrene	77		81		26-127	5		30
Biphenyl	79		79		40-140	0		30
Aniline	36	Q	26	Q	40-140	32	Q	30
4-Chloroaniline	68		58		40-140	16		30
1-Methylnaphthalene	80		79		41-103	1		30
2-Nitroaniline	90		93		52-143	3		30
3-Nitroaniline	80		82		25-145	2		30
4-Nitroaniline	80		82		51-143	2		30
Dibenzofuran	78		78		40-140	0		30
2-Methylnaphthalene	75		75		40-140	0		30
n-Nitrosodimethylamine	53		53		22-74	0		30
2,4,6-Trichlorophenol	78		80		30-130	3		30
p-Chloro-m-cresol	83		84		23-97	1		30
2-Chlorophenol	73		74		27-123	1		30
2,4-Dichlorophenol	78		81		30-130	4		30
2,4-Dimethylphenol	85		84		30-130	1		30
2-Nitrophenol	86		89		30-130	3		30
4-Nitrophenol	69		67		10-80	3		30
2,4-Dinitrophenol	77		83		20-130	8		30

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704803  
**Report Date:** 02/20/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 03 Batch: WG978284-2 WG978284-3								
4,6-Dinitro-o-cresol	82		88		20-164	7		30
Pentachlorophenol	57		62		9-103	8		30
Phenol	35		38		12-110	8		30
2-Methylphenol	73		75		30-130	3		30
3-Methylphenol/4-Methylphenol	70		73		30-130	4		30
2,4,5-Trichlorophenol	76		78		30-130	3		30
Benzoic Acid	25		36		10-164	36	Q	30
Benzyl Alcohol	75		74		26-116	1		30
Carbazole	80		80		55-144	0		30
Pyridine	34		17		10-66	67	Q	30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2-Fluorophenol	51		52		21-120
Phenol-d6	37		39		10-120
Nitrobenzene-d5	85		82		23-120
2-Fluorobiphenyl	72		71		15-120
2,4,6-Tribromophenol	66		67		10-120
4-Terphenyl-d14	70		72		41-149

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704803  
**Report Date:** 02/20/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS-SIM - Westborough Lab Associated sample(s): 03 Batch: WG978285-2 WG978285-3								
Acenaphthene	74		67		37-111	10		40
2-Chloronaphthalene	80		71		40-140	12		40
Fluoranthene	85		79		40-140	7		40
Hexachlorobutadiene	72		61		40-140	17		40
Naphthalene	78		68		40-140	14		40
Benzo(a)anthracene	87		79		40-140	10		40
Benzo(a)pyrene	92		84		40-140	9		40
Benzo(b)fluoranthene	90		81		40-140	11		40
Benzo(k)fluoranthene	86		80		40-140	7		40
Chrysene	77		70		40-140	10		40
Acenaphthylene	88		79		40-140	11		40
Anthracene	87		79		40-140	10		40
Benzo(ghi)perylene	91		83		40-140	9		40
Fluorene	82		74		40-140	10		40
Phenanthrene	78		71		40-140	9		40
Dibenzo(a,h)anthracene	93		84		40-140	10		40
Indeno(1,2,3-cd)pyrene	96		87		40-140	10		40
Pyrene	84		79		26-127	6		40
1-Methylnaphthalene	80		71		40-140	12		40
2-Methylnaphthalene	81		72		40-140	12		40
Pentachlorophenol	67		62		9-103	8		40

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704803  
**Report Date:** 02/20/17

<b>Parameter</b>	<i>LCS</i> <i>%Recovery</i>	<i>Qual</i>	<i>LCSD</i> <i>%Recovery</i>	<i>Qual</i>	<i>%Recovery</i> <i>Limits</i>	<i>RPD</i>	<i>Qual</i>	<i>RPD</i> <i>Limits</i>
Semivolatile Organics by GC/MS-SIM - Westborough Lab Associated sample(s): 03 Batch: WG978285-2 WG978285-3								
Hexachlorobenzene	80		72		40-140	11		40
Hexachloroethane	72		62		40-140	15		40

<b>Surrogate</b>	<i>LCS</i> <i>%Recovery</i>	<i>Qual</i>	<i>LCSD</i> <i>%Recovery</i>	<i>Qual</i>	<b>Acceptance Criteria</b>
2-Fluorophenol	48		43		21-120
Phenol-d6	36		32		10-120
Nitrobenzene-d5	82		71		23-120
2-Fluorobiphenyl	74		65		15-120
2,4,6-Tribromophenol	85		78		10-120
4-Terphenyl-d14	78		73		41-149

# PETROLEUM HYDROCARBONS



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704803  
**Report Date:** 02/20/17

**SAMPLE RESULTS**

Lab ID:	L1704803-01	Date Collected:	02/15/17 11:55
Client ID:	VES-132 (MW)	Date Received:	02/15/17
Sample Location:	MA	Field Prep:	Field Filtered (Dissolved Metals)
Matrix:	Water		
Analytical Method:	100,VPH-04-1.1		
Analytical Date:	02/16/17 15:08		
Analyst:	JM		

**Quality Control Information**

Condition of sample received:	Satisfactory
Aqueous Preservative:	Laboratory Provided Preserved Container
Sample Temperature upon receipt:	Received on Ice

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>Volatile Petroleum Hydrocarbons - Westborough Lab</b>						
C5-C8 Aliphatics	ND		ug/l	50.0	--	1
C9-C12 Aliphatics	ND		ug/l	50.0	--	1
C9-C10 Aromatics	ND		ug/l	50.0	--	1
C5-C8 Aliphatics, Adjusted	ND		ug/l	50.0	--	1
C9-C12 Aliphatics, Adjusted	ND		ug/l	50.0	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2,5-Dibromotoluene-PID	98		70-130
2,5-Dibromotoluene-FID	100		70-130

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704803  
**Report Date:** 02/20/17

**SAMPLE RESULTS**

Lab ID:	L1704803-01	Date Collected:	02/15/17 11:55
Client ID:	VES-132 (MW)	Date Received:	02/15/17
Sample Location:	MA	Field Prep:	Field Filtered (Dissolved Metals)
Matrix:	Water	Extraction Method:	EPA 3510C
Analytical Method:	98,EPH-04-1.1	Extraction Date:	02/17/17 19:50
Analytical Date:	02/18/17 23:33	M.S. Analytical Date:	02/19/17 09:28
Analyst:	EK	M.S. Analyst:	KL
		Cleanup Method1:	EPH-04-1
		Cleanup Date1:	02/18/17

**Quality Control Information**

Condition of sample received:	Satisfactory
Aqueous Preservative:	Laboratory Provided Preserved Container
Sample Temperature upon receipt:	Received on Ice
Sample Extraction method:	Extracted Per the Method

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>EPH w/MS Targets - Westborough Lab</b>						
C9-C18 Aliphatics	ND		ug/l	100	--	1
C19-C36 Aliphatics	ND		ug/l	100	--	1
C11-C22 Aromatics	ND		ug/l	100	--	1
C11-C22 Aromatics, Adjusted	ND		ug/l	100	--	1
Naphthalene	10.4		ug/l	0.500	--	1
2-Methylnaphthalene	2.11		ug/l	0.500	--	1
Acenaphthylene	ND		ug/l	0.500	--	1
Acenaphthene	2.40		ug/l	0.500	--	1
Fluorene	2.16		ug/l	0.500	--	1
Phenanthrene	3.65		ug/l	0.500	--	1
Anthracene	0.702		ug/l	0.500	--	1
Fluoranthene	0.692		ug/l	0.500	--	1
Pyrene	ND		ug/l	0.500	--	1
Benzo(a)anthracene	ND		ug/l	0.500	--	1
Chrysene	ND		ug/l	0.500	--	1
Benzo(b)fluoranthene	ND		ug/l	0.500	--	1
Benzo(k)fluoranthene	ND		ug/l	0.500	--	1
Benzo(a)pyrene	ND		ug/l	0.250	--	1
Indeno(1,2,3-cd)Pyrene	ND		ug/l	0.500	--	1
Dibenzo(a,h)anthracene	ND		ug/l	0.500	--	1
Benzo(ghi)perylene	ND		ug/l	0.500	--	1



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704803  
**Report Date:** 02/20/17

**SAMPLE RESULTS**

Lab ID:	L1704803-01	Date Collected:	02/15/17 11:55
Client ID:	VES-132 (MW)	Date Received:	02/15/17
Sample Location:	MA	Field Prep:	Field Filtered (Dissolved Metals)

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
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**EPH w/MS Targets - Westborough Lab**

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Chloro-Octadecane	50		40-140
o-Terphenyl	66		40-140
2-Fluorobiphenyl	61		40-140
2-Bromonaphthalene	64		40-140
O-Terphenyl-MS	69		40-140

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704803  
**Report Date:** 02/20/17

**SAMPLE RESULTS**

Lab ID:	L1704803-02	Date Collected:	02/15/17 14:00
Client ID:	VES-133 (MW)	Date Received:	02/15/17
Sample Location:	MA	Field Prep:	Field Filtered (Dissolved Metals)
Matrix:	Water		
Analytical Method:	100,VPH-04-1.1		
Analytical Date:	02/16/17 15:47		
Analyst:	JM		

**Quality Control Information**

Condition of sample received:	Satisfactory
Aqueous Preservative:	Laboratory Provided Preserved Container
Sample Temperature upon receipt:	Received on Ice

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>Volatile Petroleum Hydrocarbons - Westborough Lab</b>						
C5-C8 Aliphatics	ND		ug/l	50.0	--	1
C9-C12 Aliphatics	ND		ug/l	50.0	--	1
C9-C10 Aromatics	ND		ug/l	50.0	--	1
C5-C8 Aliphatics, Adjusted	ND		ug/l	50.0	--	1
C9-C12 Aliphatics, Adjusted	ND		ug/l	50.0	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2,5-Dibromotoluene-PID	103		70-130
2,5-Dibromotoluene-FID	107		70-130

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704803  
**Report Date:** 02/20/17

**SAMPLE RESULTS**

Lab ID:	L1704803-02	Date Collected:	02/15/17 14:00
Client ID:	VES-133 (MW)	Date Received:	02/15/17
Sample Location:	MA	Field Prep:	Field Filtered (Dissolved Metals)
Matrix:	Water	Extraction Method:	EPA 3510C
Analytical Method:	98,EPH-04-1.1	Extraction Date:	02/17/17 19:50
Analytical Date:	02/19/17 10:56	M.S. Analytical Date:	02/19/17 11:31
Analyst:	EK	M.S. Analyst:	KL
		Cleanup Method1:	EPH-04-1
		Cleanup Date1:	02/18/17

**Quality Control Information**

Condition of sample received:	Satisfactory
Aqueous Preservative:	Laboratory Provided Preserved Container
Sample Temperature upon receipt:	Received on Ice
Sample Extraction method:	Extracted Per the Method

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>EPH w/MS Targets - Westborough Lab</b>						
C9-C18 Aliphatics	ND		ug/l	100	--	1
C19-C36 Aliphatics	ND		ug/l	100	--	1
C11-C22 Aromatics	ND		ug/l	100	--	1
C11-C22 Aromatics, Adjusted	ND		ug/l	100	--	1
Naphthalene	ND		ug/l	0.500	--	1
2-Methylnaphthalene	ND		ug/l	0.500	--	1
Acenaphthylene	ND		ug/l	0.500	--	1
Acenaphthene	0.695		ug/l	0.500	--	1
Fluorene	ND		ug/l	0.500	--	1
Phenanthrene	0.762		ug/l	0.500	--	1
Anthracene	ND		ug/l	0.500	--	1
Fluoranthene	ND		ug/l	0.500	--	1
Pyrene	ND		ug/l	0.500	--	1
Benzo(a)anthracene	ND		ug/l	0.500	--	1
Chrysene	ND		ug/l	0.500	--	1
Benzo(b)fluoranthene	ND		ug/l	0.500	--	1
Benzo(k)fluoranthene	ND		ug/l	0.500	--	1
Benzo(a)pyrene	ND		ug/l	0.250	--	1
Indeno(1,2,3-cd)Pyrene	ND		ug/l	0.500	--	1
Dibenzo(a,h)anthracene	ND		ug/l	0.500	--	1
Benzo(ghi)perylene	ND		ug/l	0.500	--	1



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704803  
**Report Date:** 02/20/17

**SAMPLE RESULTS**

Lab ID:	L1704803-02	Date Collected:	02/15/17 14:00
Client ID:	VES-133 (MW)	Date Received:	02/15/17
Sample Location:	MA	Field Prep:	Field Filtered (Dissolved Metals)

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
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**EPH w/MS Targets - Westborough Lab**

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Chloro-Octadecane	67		40-140
o-Terphenyl	76		40-140
2-Fluorobiphenyl	75		40-140
2-Bromonaphthalene	76		40-140
O-Terphenyl-MS	49		40-140

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704803  
**Report Date:** 02/20/17

**SAMPLE RESULTS**

Lab ID:	L1704803-03	Date Collected:	02/15/17 13:00
Client ID:	VES-135 (MW)	Date Received:	02/15/17
Sample Location:	MA	Field Prep:	Field Filtered (Dissolved Metals)
Matrix:	Water		
Analytical Method:	100,VPH-04-1.1		
Analytical Date:	02/16/17 16:26		
Analyst:	JM		

**Quality Control Information**

Condition of sample received:	Satisfactory
Aqueous Preservative:	Laboratory Provided Preserved Container
Sample Temperature upon receipt:	Received on Ice

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>Volatile Petroleum Hydrocarbons - Westborough Lab</b>						
C5-C8 Aliphatics	ND		ug/l	50.0	--	1
C9-C12 Aliphatics	ND		ug/l	50.0	--	1
C9-C10 Aromatics	ND		ug/l	50.0	--	1
C5-C8 Aliphatics, Adjusted	ND		ug/l	50.0	--	1
C9-C12 Aliphatics, Adjusted	ND		ug/l	50.0	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2,5-Dibromotoluene-PID	107		70-130
2,5-Dibromotoluene-FID	110		70-130

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704803  
**Report Date:** 02/20/17

**SAMPLE RESULTS**

Lab ID:	L1704803-03	Date Collected:	02/15/17 13:00
Client ID:	VES-135 (MW)	Date Received:	02/15/17
Sample Location:	MA	Field Prep:	Field Filtered (Dissolved Metals)
Matrix:	Water	Extraction Method:	EPA 3510C
Analytical Method:	98,EPH-04-1.1	Extraction Date:	02/17/17 19:50
Analytical Date:	02/19/17 00:36	M.S. Analytical Date:	02/19/17 10:17
Analyst:	EK	M.S. Analyst:	KL
		Cleanup Method1:	EPH-04-1
		Cleanup Date1:	02/18/17

**Quality Control Information**

Condition of sample received:	Satisfactory
Aqueous Preservative:	Laboratory Provided Preserved Container
Sample Temperature upon receipt:	Received on Ice
Sample Extraction method:	Extracted Per the Method

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>EPH w/MS Targets - Westborough Lab</b>						
C9-C18 Aliphatics	ND		ug/l	100	--	1
C19-C36 Aliphatics	ND		ug/l	100	--	1
C11-C22 Aromatics	ND		ug/l	100	--	1
C11-C22 Aromatics, Adjusted	ND		ug/l	100	--	1
Naphthalene	ND		ug/l	0.500	--	1
2-Methylnaphthalene	ND		ug/l	0.500	--	1
Acenaphthylene	ND		ug/l	0.500	--	1
Acenaphthene	ND		ug/l	0.500	--	1
Fluorene	ND		ug/l	0.500	--	1
Phenanthrene	ND		ug/l	0.500	--	1
Anthracene	ND		ug/l	0.500	--	1
Fluoranthene	ND		ug/l	0.500	--	1
Pyrene	ND		ug/l	0.500	--	1
Benzo(a)anthracene	ND		ug/l	0.500	--	1
Chrysene	ND		ug/l	0.500	--	1
Benzo(b)fluoranthene	ND		ug/l	0.500	--	1
Benzo(k)fluoranthene	ND		ug/l	0.500	--	1
Benzo(a)pyrene	ND		ug/l	0.250	--	1
Indeno(1,2,3-cd)Pyrene	ND		ug/l	0.500	--	1
Dibenzo(a,h)anthracene	ND		ug/l	0.500	--	1
Benzo(ghi)perylene	ND		ug/l	0.500	--	1



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704803  
**Report Date:** 02/20/17

**SAMPLE RESULTS**

Lab ID:	L1704803-03	Date Collected:	02/15/17 13:00
Client ID:	VES-135 (MW)	Date Received:	02/15/17
Sample Location:	MA	Field Prep:	Field Filtered (Dissolved Metals)

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
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**EPH w/MS Targets - Westborough Lab**

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Chloro-Octadecane	40		40-140
o-Terphenyl	74		40-140
2-Fluorobiphenyl	76		40-140
2-Bromonaphthalene	78		40-140
O-Terphenyl-MS	66		40-140



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704803  
**Report Date:** 02/20/17

**SAMPLE RESULTS**

Lab ID:	L1704803-04	Date Collected:	02/15/17 15:30
Client ID:	VES-129 (MW)	Date Received:	02/15/17
Sample Location:	MA	Field Prep:	Field Filtered (Dissolved Metals)
Matrix:	Water		
Analytical Method:	100,VPH-04-1.1		
Analytical Date:	02/16/17 17:05		
Analyst:	JM		

**Quality Control Information**

Condition of sample received:	Satisfactory
Aqueous Preservative:	Laboratory Provided Preserved Container
Sample Temperature upon receipt:	Received on Ice

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>Volatile Petroleum Hydrocarbons - Westborough Lab</b>						
C5-C8 Aliphatics	ND		ug/l	50.0	--	1
C9-C12 Aliphatics	ND		ug/l	50.0	--	1
C9-C10 Aromatics	ND		ug/l	50.0	--	1
C5-C8 Aliphatics, Adjusted	ND		ug/l	50.0	--	1
C9-C12 Aliphatics, Adjusted	ND		ug/l	50.0	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2,5-Dibromotoluene-PID	106		70-130
2,5-Dibromotoluene-FID	109		70-130

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704803  
**Report Date:** 02/20/17

**SAMPLE RESULTS**

Lab ID:	L1704803-04	Date Collected:	02/15/17 15:30
Client ID:	VES-129 (MW)	Date Received:	02/15/17
Sample Location:	MA	Field Prep:	Field Filtered (Dissolved Metals)
Matrix:	Water	Extraction Method:	EPA 3510C
Analytical Method:	98,EPH-04-1.1	Extraction Date:	02/17/17 19:50
Analytical Date:	02/19/17 01:08	M.S. Analytical Date:	02/19/17 10:42
Analyst:	EK	M.S. Analyst:	KL
		Cleanup Method1:	EPH-04-1
		Cleanup Date1:	02/18/17

**Quality Control Information**

Condition of sample received:	Satisfactory
Aqueous Preservative:	Laboratory Provided Preserved Container
Sample Temperature upon receipt:	Received on Ice
Sample Extraction method:	Extracted Per the Method

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>EPH w/MS Targets - Westborough Lab</b>						
C9-C18 Aliphatics	ND		ug/l	100	--	1
C19-C36 Aliphatics	ND		ug/l	100	--	1
C11-C22 Aromatics	ND		ug/l	100	--	1
C11-C22 Aromatics, Adjusted	ND		ug/l	100	--	1
Naphthalene	ND		ug/l	0.500	--	1
2-Methylnaphthalene	ND		ug/l	0.500	--	1
Acenaphthylene	ND		ug/l	0.500	--	1
Acenaphthene	ND		ug/l	0.500	--	1
Fluorene	ND		ug/l	0.500	--	1
Phenanthrene	ND		ug/l	0.500	--	1
Anthracene	ND		ug/l	0.500	--	1
Fluoranthene	ND		ug/l	0.500	--	1
Pyrene	ND		ug/l	0.500	--	1
Benzo(a)anthracene	ND		ug/l	0.500	--	1
Chrysene	ND		ug/l	0.500	--	1
Benzo(b)fluoranthene	ND		ug/l	0.500	--	1
Benzo(k)fluoranthene	ND		ug/l	0.500	--	1
Benzo(a)pyrene	ND		ug/l	0.250	--	1
Indeno(1,2,3-cd)Pyrene	ND		ug/l	0.500	--	1
Dibenzo(a,h)anthracene	ND		ug/l	0.500	--	1
Benzo(ghi)perylene	ND		ug/l	0.500	--	1



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704803  
**Report Date:** 02/20/17

**SAMPLE RESULTS**

Lab ID:	L1704803-04	Date Collected:	02/15/17 15:30
Client ID:	VES-129 (MW)	Date Received:	02/15/17
Sample Location:	MA	Field Prep:	Field Filtered (Dissolved Metals)

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
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**EPH w/MS Targets - Westborough Lab**

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Chloro-Octadecane	42		40-140
o-Terphenyl	60		40-140
2-Fluorobiphenyl	59		40-140
2-Bromonaphthalene	61		40-140
O-Terphenyl-MS	64		40-140



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704803  
**Report Date:** 02/20/17

**SAMPLE RESULTS**

Lab ID:	L1704803-05	Date Collected:	02/15/17 14:50
Client ID:	VES-120 (MW)	Date Received:	02/15/17
Sample Location:	MA	Field Prep:	Field Filtered (Dissolved Metals)
Matrix:	Water		
Analytical Method:	100,VPH-04-1.1		
Analytical Date:	02/16/17 17:44		
Analyst:	JM		

**Quality Control Information**

Condition of sample received:	Satisfactory
Aqueous Preservative:	Laboratory Provided Preserved Container
Sample Temperature upon receipt:	Received on Ice

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>Volatile Petroleum Hydrocarbons - Westborough Lab</b>						
C5-C8 Aliphatics	ND		ug/l	50.0	--	1
C9-C12 Aliphatics	ND		ug/l	50.0	--	1
C9-C10 Aromatics	ND		ug/l	50.0	--	1
C5-C8 Aliphatics, Adjusted	ND		ug/l	50.0	--	1
C9-C12 Aliphatics, Adjusted	ND		ug/l	50.0	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2,5-Dibromotoluene-PID	103		70-130
2,5-Dibromotoluene-FID	107		70-130

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704803  
**Report Date:** 02/20/17

**SAMPLE RESULTS**

Lab ID:	L1704803-05	Date Collected:	02/15/17 14:50
Client ID:	VES-120 (MW)	Date Received:	02/15/17
Sample Location:	MA	Field Prep:	Field Filtered (Dissolved Metals)
Matrix:	Water	Extraction Method:	EPA 3510C
Analytical Method:	98,EPH-04-1.1	Extraction Date:	02/17/17 19:50
Analytical Date:	02/19/17 01:39	M.S. Analytical Date:	02/19/17 11:07
Analyst:	EK	M.S. Analyst:	KL
		Cleanup Method1:	EPH-04-1
		Cleanup Date1:	02/18/17

**Quality Control Information**

Condition of sample received:	Satisfactory
Aqueous Preservative:	Laboratory Provided Preserved Container
Sample Temperature upon receipt:	Received on Ice
Sample Extraction method:	Extracted Per the Method

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>EPH w/MS Targets - Westborough Lab</b>						
C9-C18 Aliphatics	ND		ug/l	100	--	1
C19-C36 Aliphatics	ND		ug/l	100	--	1
C11-C22 Aromatics	ND		ug/l	100	--	1
C11-C22 Aromatics, Adjusted	ND		ug/l	100	--	1
Naphthalene	ND		ug/l	0.500	--	1
2-Methylnaphthalene	ND		ug/l	0.500	--	1
Acenaphthylene	ND		ug/l	0.500	--	1
Acenaphthene	ND		ug/l	0.500	--	1
Fluorene	ND		ug/l	0.500	--	1
Phenanthrene	ND		ug/l	0.500	--	1
Anthracene	ND		ug/l	0.500	--	1
Fluoranthene	ND		ug/l	0.500	--	1
Pyrene	ND		ug/l	0.500	--	1
Benzo(a)anthracene	ND		ug/l	0.500	--	1
Chrysene	ND		ug/l	0.500	--	1
Benzo(b)fluoranthene	ND		ug/l	0.500	--	1
Benzo(k)fluoranthene	ND		ug/l	0.500	--	1
Benzo(a)pyrene	ND		ug/l	0.250	--	1
Indeno(1,2,3-cd)Pyrene	ND		ug/l	0.500	--	1
Dibenzo(a,h)anthracene	ND		ug/l	0.500	--	1
Benzo(ghi)perylene	ND		ug/l	0.500	--	1



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704803  
**Report Date:** 02/20/17

**SAMPLE RESULTS**

Lab ID:	L1704803-05	Date Collected:	02/15/17 14:50
Client ID:	VES-120 (MW)	Date Received:	02/15/17
Sample Location:	MA	Field Prep:	Field Filtered (Dissolved Metals)

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
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**EPH w/MS Targets - Westborough Lab**

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Chloro-Octadecane	53		40-140
o-Terphenyl	69		40-140
2-Fluorobiphenyl	69		40-140
2-Bromonaphthalene	70		40-140
O-Terphenyl-MS	64		40-140

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704803  
**Report Date:** 02/20/17

### Method Blank Analysis Batch Quality Control

Analytical Method:	98,EPH-04-1.1	Extraction Method:	EPA 3510C
Analytical Date:	02/18/17 21:58	Extraction Date:	02/17/17 19:50
Analyst:	EK	Cleanup Method:	EPH-04-1
		Cleanup Date:	02/18/17

Parameter	Result	Qualifier	Units	RL	MDL
EPH w/MS Targets - Westborough Lab for sample(s): 01-05 Batch: WG978929-1					
C9-C18 Aliphatics	ND		ug/l	100	--
C19-C36 Aliphatics	ND		ug/l	100	--
C11-C22 Aromatics	ND		ug/l	100	--
C11-C22 Aromatics, Adjusted	ND		ug/l	100	--
Naphthalene	ND		ug/l	0.400	--
2-Methylnaphthalene	ND		ug/l	0.400	--
Acenaphthylene	ND		ug/l	0.400	--
Acenaphthene	ND		ug/l	0.400	--
Fluorene	ND		ug/l	0.400	--
Phenanthrene	ND		ug/l	0.400	--
Anthracene	ND		ug/l	0.400	--
Fluoranthene	ND		ug/l	0.400	--
Pyrene	ND		ug/l	0.400	--
Benzo(a)anthracene	ND		ug/l	0.400	--
Chrysene	ND		ug/l	0.400	--
Benzo(b)fluoranthene	ND		ug/l	0.400	--
Benzo(k)fluoranthene	ND		ug/l	0.400	--
Benzo(a)pyrene	ND		ug/l	0.200	--
Indeno(1,2,3-cd)Pyrene	ND		ug/l	0.400	--
Dibenzo(a,h)anthracene	ND		ug/l	0.400	--
Benzo(ghi)perylene	ND		ug/l	0.400	--

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704803  
**Report Date:** 02/20/17

### Method Blank Analysis Batch Quality Control

Analytical Method: 98,EPH-04-1.1  
Analytical Date: 02/18/17 21:58  
Analyst: EK

02/19/17 08:14  
KL

Extraction Method: EPA 3510C  
Extraction Date: 02/17/17 19:50  
Cleanup Method: EPH-04-1  
Cleanup Date: 02/18/17

Parameter	Result	Qualifier	Units	RL	MDL
EPH w/MS Targets - Westborough Lab for sample(s): 01-05		Batch:	WG978929-1		

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Chloro-Octadecane	69		40-140
o-Terphenyl	79		40-140
2-Fluorobiphenyl	81		40-140
2-Bromonaphthalene	84		40-140
O-Terphenyl-MS	66		40-140

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704803  
**Report Date:** 02/20/17

**Method Blank Analysis**  
**Batch Quality Control**

Analytical Method: 100,VPH-04-1.1  
Analytical Date: 02/16/17 10:47  
Analyst: JM

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Petroleum Hydrocarbons - Westborough Lab for sample(s):	01-05			Batch:	WG979056-3
C5-C8 Aliphatics	ND		ug/l	50.0	--
C9-C12 Aliphatics	ND		ug/l	50.0	--
C9-C10 Aromatics	ND		ug/l	50.0	--
C5-C8 Aliphatics, Adjusted	ND		ug/l	50.0	--
C9-C12 Aliphatics, Adjusted	ND		ug/l	50.0	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2,5-Dibromotoluene-PID	99		70-130
2,5-Dibromotoluene-FID	101		70-130

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704803  
**Report Date:** 02/20/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
EPH w/MS Targets - Westborough Lab Associated sample(s): 01-05 Batch: WG978929-2 WG978929-3								
C9-C18 Aliphatics	57		83		40-140	37	Q	25
C19-C36 Aliphatics	70		96		40-140	31	Q	25
C11-C22 Aromatics	81		83		40-140	2		25
Naphthalene	60		68		40-140	13		25
2-Methylnaphthalene	66		73		40-140	10		25
Acenaphthylene	76		82		40-140	8		25
Acenaphthene	81		89		40-140	9		25
Fluorene	80		86		40-140	7		25
Phenanthrene	70		75		40-140	7		25
Anthracene	78		84		40-140	7		25
Fluoranthene	82		87		40-140	6		25
Pyrene	81		87		40-140	7		25
Benzo(a)anthracene	79		83		40-140	5		25
Chrysene	79		83		40-140	5		25
Benzo(b)fluoranthene	86		93		40-140	8		25
Benzo(k)fluoranthene	71		74		40-140	4		25
Benzo(a)pyrene	81		85		40-140	5		25
Indeno(1,2,3-cd)Pyrene	76		81		40-140	6		25
Dibenz(a,h)anthracene	76		80		40-140	5		25
Benzo(ghi)perylene	75		81		40-140	8		25
Nonane (C9)	43		63		30-140	38	Q	25

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704803  
**Report Date:** 02/20/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
EPH w/MS Targets - Westborough Lab Associated sample(s): 01-05 Batch: WG978929-2 WG978929-3								
Decane (C10)	50		73		40-140	37	Q	25
Dodecane (C12)	56		81		40-140	36	Q	25
Tetradecane (C14)	60		86		40-140	36	Q	25
Hexadecane (C16)	64		90		40-140	34	Q	25
Octadecane (C18)	68		94		40-140	32	Q	25
Nonadecane (C19)	68		94		40-140	32	Q	25
Eicosane (C20)	68		95		40-140	33	Q	25
Docosane (C22)	69		96		40-140	33	Q	25
Tetracosane (C24)	69		95		40-140	32	Q	25
Hexacosane (C26)	69		95		40-140	32	Q	25
Octacosane (C28)	69		95		40-140	32	Q	25
Triacontane (C30)	69		94		40-140	31	Q	25
Hexatriacontane (C36)	68		93		40-140	31	Q	25

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704803  
**Report Date:** 02/20/17

<b>Parameter</b>	<i>LCS</i> <i>%Recovery</i>	<i>Qual</i>	<i>LCSD</i> <i>%Recovery</i>	<i>Qual</i>	<i>%Recovery</i> <i>Limits</i>	<i>RPD</i>	<i>Qual</i>	<i>RPD</i> <i>Limits</i>
EPH w/MS Targets - Westborough Lab Associated sample(s): 01-05 Batch: WG978929-2 WG978929-3								
<i>Surrogate</i>	<i>LCS</i> <i>%Recovery</i>	<i>Qual</i>	<i>LCSD</i> <i>%Recovery</i>	<i>Qual</i>	<i>Acceptance</i> <i>Criteria</i>			
Chloro-Octadecane	53		69		40-140			
o-Terphenyl	85		84		40-140			
2-Fluorobiphenyl	67		68		40-140			
2-Bromonaphthalene	70		71		40-140			
O-Terphenyl-MS	72		77		40-140			
% Naphthalene Breakthrough	0		0					
% 2-Methylnaphthalene Breakthrough	0		0					

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704803  
**Report Date:** 02/20/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Petroleum Hydrocarbons - Westborough Lab Associated sample(s): 01-05 Batch: WG979056-1 WG979056-2								
C5-C8 Aliphatics	100		101		70-130	1		25
C9-C12 Aliphatics	105		106		70-130	1		25
C9-C10 Aromatics	102		101		70-130	1		25
Benzene	98		98		70-130	1		25
Toluene	100		100		70-130	0		25
Ethylbenzene	101		100		70-130	1		25
p/m-Xylene	103		101		70-130	2		25
o-Xylene	99		98		70-130	1		25
Methyl tert butyl ether	97		93		70-130	4		25
Naphthalene	97		96		70-130	1		25
1,2,4-Trimethylbenzene	102		101		70-130	1		25
Pentane	97		97		70-130	0		25
2-Methylpentane	101		101		70-130	0		25
2,2,4-Trimethylpentane	102		103		70-130	1		25
n-Nonane	105		105		30-130	0		25
n-Decane	108		108		70-130	0		25
n-Butylcyclohexane	104		104		70-130	0		25

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704803  
**Report Date:** 02/20/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
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Volatile Petroleum Hydrocarbons - Westborough Lab Associated sample(s): 01-05 Batch: WG979056-1 WG979056-2

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2,5-Dibromotoluene-PID	104		101		70-130
2,5-Dibromotoluene-FID	103		103		70-130

**PCBS**



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704803  
**Report Date:** 02/20/17

**SAMPLE RESULTS**

Lab ID: L1704803-03  
Client ID: VES-135 (MW)  
Sample Location: MA  
Matrix: Water  
Analytical Method: 5,608  
Analytical Date: 02/17/17 05:43  
Analyst: HT

Date Collected: 02/15/17 13:00  
Date Received: 02/15/17  
Field Prep: Field Filtered (Dissolved Metals)  
Extraction Method: EPA 608  
Extraction Date: 02/16/17 13:27  
Cleanup Method: EPA 3665A  
Cleanup Date: 02/16/17  
Cleanup Method: EPA 3660B  
Cleanup Date: 02/16/17

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
<b>Polychlorinated Biphenyls by GC - Westborough Lab</b>							
Aroclor 1016	ND		ug/l	0.263	--	1	A
Aroclor 1221	ND		ug/l	0.263	--	1	A
Aroclor 1232	ND		ug/l	0.263	--	1	A
Aroclor 1242	ND		ug/l	0.263	--	1	A
Aroclor 1248	ND		ug/l	0.263	--	1	A
Aroclor 1254	ND		ug/l	0.263	--	1	A
Aroclor 1260	ND		ug/l	0.210	--	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	79		30-150	A
Decachlorobiphenyl	77		30-150	A

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704803  
**Report Date:** 02/20/17

### Method Blank Analysis Batch Quality Control

Analytical Method: 5,608  
Analytical Date: 02/17/17 06:20  
Analyst: HT

Extraction Method: EPA 608  
Extraction Date: 02/16/17 13:27  
Cleanup Method: EPA 3665A  
Cleanup Date: 02/16/17  
Cleanup Method: EPA 3660B  
Cleanup Date: 02/16/17

Parameter	Result	Qualifier	Units	RL	MDL	Column
Polychlorinated Biphenyls by GC - Westborough Lab for sample(s): 03 Batch: WG978462-1						
Aroclor 1016	ND		ug/l	0.250	--	A
Aroclor 1221	ND		ug/l	0.250	--	A
Aroclor 1232	ND		ug/l	0.250	--	A
Aroclor 1242	ND		ug/l	0.250	--	A
Aroclor 1248	ND		ug/l	0.250	--	A
Aroclor 1254	ND		ug/l	0.250	--	A
Aroclor 1260	ND		ug/l	0.200	--	A

Surrogate	%Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	81		30-150	A
Decachlorobiphenyl	81		30-150	A

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704803  
**Report Date:** 02/20/17

<b>Parameter</b>	<i>LCS</i>	<i>LCSD</i>	%Recovery		%Recovery	<i>RPD</i>	<i>Qual</i>	<i>RPD</i>	<i>Column</i>
	<i>%Recovery</i>	<i>Qual</i>	<i>%Recovery</i>	<i>Qual</i>	<i>Limits</i>			<i>Limits</i>	
Polychlorinated Biphenyls by GC - Westborough Lab Associated sample(s): 03 Batch: WG978462-2									
Aroclor 1016	98	-	-	-	40-140	-	-	50	A
Aroclor 1260	104	-	-	-	40-140	-	-	50	A

<b>Surrogate</b>	<i>LCS</i>	<i>LCSD</i>	%Recovery		%Recovery	<i>Qual</i>	<i>Acceptance Criteria</i>	<i>Column</i>
	<i>%Recovery</i>	<i>Qual</i>	<i>%Recovery</i>	<i>Qual</i>	<i>Limits</i>	<i>Limits</i>		
2,4,5,6-Tetrachloro-m-xylene	89	-	-	-	30-150	-	A	
Decachlorobiphenyl	94	-	-	-	30-150	-	A	

**Matrix Spike Analysis**  
**Batch Quality Control**

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704803  
**Report Date:** 02/20/17

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	MSD Qual	Recovery Limits	RPD RPD	Qual	RPD Limits	Column
Polychlorinated Biphenyls by GC - Westborough Lab				Associated sample(s): 03 QC Batch ID: WG978462-3				QC Sample: L1704803-03 Client ID: VES-135 (MW)					
Aroclor 1016	ND	1	0.920	92		-	-	-	40-140	-	50	A	
Aroclor 1260	ND	1	1.01	101		-	-	-	40-140	-	50	A	

Surrogate	MS % Recovery	Qualifier	MSD % Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	85				30-150	A
Decachlorobiphenyl	70				30-150	A

**Lab Duplicate Analysis**  
Batch Quality Control

Project Name: EAST BOSTON  
Project Number: 43068

Lab Number: L1704803  
Report Date: 02/20/17

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Polychlorinated Biphenyls by GC - Westborough Lab Associated sample(s): 03 QC Batch ID: WG978462-4 QC Sample: L1704530-01 Client ID: DUP Sample						
Aroclor 1016	ND	ND	ug/l	NC	50	A
Aroclor 1221	ND	ND	ug/l	NC	50	A
Aroclor 1232	ND	ND	ug/l	NC	50	A
Aroclor 1242	ND	ND	ug/l	NC	50	A
Aroclor 1248	ND	ND	ug/l	NC	50	A
Aroclor 1254	ND	ND	ug/l	NC	50	A
Aroclor 1260	ND	ND	ug/l	NC	50	A

Surrogate	%Recovery	Qualifier	%Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	90		90		30-150	A
Decachlorobiphenyl	89		80		30-150	A

## METALS



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704803  
**Report Date:** 02/20/17

**SAMPLE RESULTS**

Lab ID:	L1704803-01	Date Collected:	02/15/17 11:55
Client ID:	VES-132 (MW)	Date Received:	02/15/17
Sample Location:	MA	Field Prep:	Field Filtered
Matrix:	Water		(Dissolved Metals)

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
<b>MCP Dissolved Metals - Mansfield Lab</b>											
Arsenic, Dissolved	ND		mg/l	0.005	--	1	02/16/17 11:42	02/17/17 02:41	EPA 3005A	97,6010C	AB
Barium, Dissolved	0.567		mg/l	0.010	--	1	02/16/17 11:42	02/17/17 02:41	EPA 3005A	97,6010C	AB
Cadmium, Dissolved	ND		mg/l	0.004	--	1	02/16/17 11:42	02/17/17 02:41	EPA 3005A	97,6010C	AB
Chromium, Dissolved	ND		mg/l	0.01	--	1	02/16/17 11:42	02/17/17 02:41	EPA 3005A	97,6010C	AB
Lead, Dissolved	ND		mg/l	0.010	--	1	02/16/17 11:42	02/17/17 02:41	EPA 3005A	97,6010C	AB
Mercury, Dissolved	ND		mg/l	0.0002	--	1	02/16/17 10:20	02/16/17 22:08	EPA 7470A	97,7470A	EA
Selenium, Dissolved	ND		mg/l	0.010	--	1	02/16/17 11:42	02/17/17 02:41	EPA 3005A	97,6010C	AB
Silver, Dissolved	ND		mg/l	0.007	--	1	02/16/17 11:42	02/17/17 02:41	EPA 3005A	97,6010C	AB



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704803  
**Report Date:** 02/20/17

**SAMPLE RESULTS**

Lab ID:	L1704803-02	Date Collected:	02/15/17 14:00
Client ID:	VES-133 (MW)	Date Received:	02/15/17
Sample Location:	MA	Field Prep:	Field Filtered
Matrix:	Water		(Dissolved Metals)

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
<b>MCP Dissolved Metals - Mansfield Lab</b>											
Arsenic, Dissolved	0.006		mg/l	0.005	--	1	02/16/17 11:42	02/17/17 02:46	EPA 3005A	97,6010C	AB
Barium, Dissolved	0.526		mg/l	0.010	--	1	02/16/17 11:42	02/17/17 02:46	EPA 3005A	97,6010C	AB
Cadmium, Dissolved	ND		mg/l	0.004	--	1	02/16/17 11:42	02/17/17 02:46	EPA 3005A	97,6010C	AB
Chromium, Dissolved	ND		mg/l	0.01	--	1	02/16/17 11:42	02/17/17 02:46	EPA 3005A	97,6010C	AB
Lead, Dissolved	ND		mg/l	0.010	--	1	02/16/17 11:42	02/17/17 02:46	EPA 3005A	97,6010C	AB
Mercury, Dissolved	ND		mg/l	0.0002	--	1	02/16/17 10:20	02/16/17 22:10	EPA 7470A	97,7470A	EA
Selenium, Dissolved	ND		mg/l	0.010	--	1	02/16/17 11:42	02/17/17 02:46	EPA 3005A	97,6010C	AB
Silver, Dissolved	ND		mg/l	0.007	--	1	02/16/17 11:42	02/17/17 02:46	EPA 3005A	97,6010C	AB



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704803  
**Report Date:** 02/20/17

**SAMPLE RESULTS**

Lab ID:	L1704803-03	Date Collected:	02/15/17 13:00
Client ID:	VES-135 (MW)	Date Received:	02/15/17
Sample Location:	MA	Field Prep:	Field Filtered
Matrix:	Water		(Dissolved Metals)

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
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**Total Metals - Mansfield Lab**

Antimony, Total	ND	mg/l	0.00400	--	1	02/16/17 10:07	02/16/17 15:37	EPA 3005A	1,6020A	AM
Arsenic, Total	0.00121	mg/l	0.00050	--	1	02/16/17 10:07	02/16/17 15:37	EPA 3005A	1,6020A	AM
Cadmium, Total	ND	mg/l	0.00020	--	1	02/16/17 10:07	02/16/17 15:37	EPA 3005A	1,6020A	AM
Chromium, Total	ND	mg/l	0.00100	--	1	02/16/17 10:07	02/16/17 15:37	EPA 3005A	1,6020A	AM
Copper, Total	ND	mg/l	0.00100	--	1	02/16/17 10:07	02/16/17 15:37	EPA 3005A	1,6020A	AM
Iron, Total	24.3	mg/l	0.050	--	1	02/16/17 10:07	02/16/17 17:29	EPA 3005A	19,200.7	MC
Lead, Total	0.00091	mg/l	0.00050	--	1	02/16/17 10:07	02/16/17 15:37	EPA 3005A	1,6020A	AM
Mercury, Total	ND	mg/l	0.00020	--	1	02/16/17 11:07	02/16/17 21:18	EPA 245.1	3,245.1	EA
Nickel, Total	ND	mg/l	0.00200	--	1	02/16/17 10:07	02/16/17 15:37	EPA 3005A	1,6020A	AM
Selenium, Total	ND	mg/l	0.00500	--	1	02/16/17 10:07	02/16/17 15:37	EPA 3005A	1,6020A	AM
Silver, Total	ND	mg/l	0.00040	--	1	02/16/17 10:07	02/16/17 15:37	EPA 3005A	1,6020A	AM
Zinc, Total	ND	mg/l	0.01000	--	1	02/16/17 10:07	02/16/17 15:37	EPA 3005A	1,6020A	AM

**MCP Dissolved Metals - Mansfield Lab**

Arsenic, Dissolved	ND	mg/l	0.005	--	1	02/16/17 11:42	02/17/17 02:50	EPA 3005A	97,6010C	AB
Barium, Dissolved	0.625	mg/l	0.010	--	1	02/16/17 11:42	02/17/17 02:50	EPA 3005A	97,6010C	AB
Cadmium, Dissolved	ND	mg/l	0.004	--	1	02/16/17 11:42	02/17/17 02:50	EPA 3005A	97,6010C	AB
Chromium, Dissolved	ND	mg/l	0.01	--	1	02/16/17 11:42	02/17/17 02:50	EPA 3005A	97,6010C	AB
Lead, Dissolved	ND	mg/l	0.010	--	1	02/16/17 11:42	02/17/17 02:50	EPA 3005A	97,6010C	AB
Mercury, Dissolved	ND	mg/l	0.0002	--	1	02/16/17 10:20	02/16/17 22:12	EPA 7470A	97,7470A	EA
Selenium, Dissolved	ND	mg/l	0.010	--	1	02/16/17 11:42	02/17/17 02:50	EPA 3005A	97,6010C	AB
Silver, Dissolved	ND	mg/l	0.007	--	1	02/16/17 11:42	02/17/17 02:50	EPA 3005A	97,6010C	AB



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704803  
**Report Date:** 02/20/17

**SAMPLE RESULTS**

Lab ID:	L1704803-04	Date Collected:	02/15/17 15:30
Client ID:	VES-129 (MW)	Date Received:	02/15/17
Sample Location:	MA	Field Prep:	Field Filtered
Matrix:	Water		(Dissolved Metals)

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
<b>MCP Dissolved Metals - Mansfield Lab</b>											
Arsenic, Dissolved	0.006		mg/l	0.005	--	1	02/16/17 11:42	02/17/17 03:21	EPA 3005A	97,6010C	AB
Barium, Dissolved	0.520		mg/l	0.010	--	1	02/16/17 11:42	02/17/17 03:21	EPA 3005A	97,6010C	AB
Cadmium, Dissolved	ND		mg/l	0.004	--	1	02/16/17 11:42	02/17/17 03:21	EPA 3005A	97,6010C	AB
Chromium, Dissolved	ND		mg/l	0.01	--	1	02/16/17 11:42	02/17/17 03:21	EPA 3005A	97,6010C	AB
Lead, Dissolved	ND		mg/l	0.010	--	1	02/16/17 11:42	02/17/17 03:21	EPA 3005A	97,6010C	AB
Mercury, Dissolved	ND		mg/l	0.0002	--	1	02/16/17 10:20	02/16/17 22:18	EPA 7470A	97,7470A	EA
Selenium, Dissolved	ND		mg/l	0.010	--	1	02/16/17 11:42	02/17/17 03:21	EPA 3005A	97,6010C	AB
Silver, Dissolved	ND		mg/l	0.007	--	1	02/16/17 11:42	02/17/17 03:21	EPA 3005A	97,6010C	AB



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704803  
**Report Date:** 02/20/17

**SAMPLE RESULTS**

Lab ID:	L1704803-05	Date Collected:	02/15/17 14:50
Client ID:	VES-120 (MW)	Date Received:	02/15/17
Sample Location:	MA	Field Prep:	Field Filtered
Matrix:	Water		(Dissolved Metals)

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
<b>MCP Dissolved Metals - Mansfield Lab</b>											
Arsenic, Dissolved	ND		mg/l	0.005	--	1	02/16/17 11:42	02/17/17 03:25	EPA 3005A	97,6010C	AB
Barium, Dissolved	0.527		mg/l	0.010	--	1	02/16/17 11:42	02/17/17 03:25	EPA 3005A	97,6010C	AB
Cadmium, Dissolved	ND		mg/l	0.004	--	1	02/16/17 11:42	02/17/17 03:25	EPA 3005A	97,6010C	AB
Chromium, Dissolved	ND		mg/l	0.01	--	1	02/16/17 11:42	02/17/17 03:25	EPA 3005A	97,6010C	AB
Lead, Dissolved	ND		mg/l	0.010	--	1	02/16/17 11:42	02/17/17 03:25	EPA 3005A	97,6010C	AB
Mercury, Dissolved	ND		mg/l	0.0002	--	1	02/16/17 10:20	02/16/17 22:20	EPA 7470A	97,7470A	EA
Selenium, Dissolved	ND		mg/l	0.010	--	1	02/16/17 11:42	02/17/17 03:25	EPA 3005A	97,6010C	AB
Silver, Dissolved	ND		mg/l	0.007	--	1	02/16/17 11:42	02/17/17 03:25	EPA 3005A	97,6010C	AB



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704803  
**Report Date:** 02/20/17

## Method Blank Analysis Batch Quality Control

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>Total Metals - Mansfield Lab for sample(s): 03 Batch: WG978336-1</b>									
Iron, Total	ND	mg/l	0.050	--	1	02/16/17 10:07	02/16/17 16:25	19,200.7	MC

### **Prep Information**

Digestion Method: EPA 3005A

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>Total Metals - Mansfield Lab for sample(s): 03 Batch: WG978347-1</b>									
Antimony, Total	ND	mg/l	0.00400	--	1	02/16/17 10:07	02/16/17 15:00	1,6020A	AM
Arsenic, Total	ND	mg/l	0.00050	--	1	02/16/17 10:07	02/16/17 15:00	1,6020A	AM
Cadmium, Total	ND	mg/l	0.00020	--	1	02/16/17 10:07	02/16/17 15:00	1,6020A	AM
Chromium, Total	ND	mg/l	0.00100	--	1	02/16/17 10:07	02/16/17 15:00	1,6020A	AM
Copper, Total	ND	mg/l	0.00100	--	1	02/16/17 10:07	02/16/17 15:00	1,6020A	AM
Lead, Total	ND	mg/l	0.00050	--	1	02/16/17 10:07	02/16/17 15:00	1,6020A	AM
Nickel, Total	ND	mg/l	0.00200	--	1	02/16/17 10:07	02/16/17 15:00	1,6020A	AM
Selenium, Total	ND	mg/l	0.00500	--	1	02/16/17 10:07	02/16/17 15:00	1,6020A	AM
Silver, Total	ND	mg/l	0.00040	--	1	02/16/17 10:07	02/16/17 15:00	1,6020A	AM
Zinc, Total	ND	mg/l	0.01000	--	1	02/16/17 10:07	02/16/17 15:00	1,6020A	AM

### **Prep Information**

Digestion Method: EPA 3005A

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>MCP Dissolved Metals - Mansfield Lab for sample(s): 01-05 Batch: WG978361-1</b>									
Mercury, Dissolved	ND	mg/l	0.0002	--	1	02/16/17 10:20	02/16/17 22:03	97,7470A	EA

### **Prep Information**

Digestion Method: EPA 7470A



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704803  
**Report Date:** 02/20/17

## Method Blank Analysis Batch Quality Control

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 03 Batch: WG978403-1									
Mercury, Total	ND	mg/l	0.0002	--	1	02/16/17 11:07	02/16/17 20:52	3,245.1	EA

### Prep Information

Digestion Method: EPA 245.1

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
MCP Dissolved Metals - Mansfield Lab for sample(s): 01-05 Batch: WG978408-1									
Arsenic, Dissolved	ND	mg/l	0.005	--	1	02/16/17 11:42	02/17/17 02:20	97,6010C	AB
Barium, Dissolved	ND	mg/l	0.010	--	1	02/16/17 11:42	02/17/17 02:20	97,6010C	AB
Cadmium, Dissolved	ND	mg/l	0.004	--	1	02/16/17 11:42	02/17/17 02:20	97,6010C	AB
Chromium, Dissolved	ND	mg/l	0.01	--	1	02/16/17 11:42	02/17/17 02:20	97,6010C	AB
Lead, Dissolved	ND	mg/l	0.010	--	1	02/16/17 11:42	02/17/17 02:20	97,6010C	AB
Selenium, Dissolved	ND	mg/l	0.010	--	1	02/16/17 11:42	02/17/17 02:20	97,6010C	AB
Silver, Dissolved	ND	mg/l	0.007	--	1	02/16/17 11:42	02/17/17 02:20	97,6010C	AB

### Prep Information

Digestion Method: EPA 3005A

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704803  
**Report Date:** 02/20/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 03 Batch: WG978336-2								
Iron, Total	92	-	-	-	85-115	-	-	-
Total Metals - Mansfield Lab Associated sample(s): 03 Batch: WG978347-2								
Antimony, Total	104	-	-	-	80-120	-	-	-
Arsenic, Total	106	-	-	-	80-120	-	-	-
Cadmium, Total	112	-	-	-	80-120	-	-	-
Chromium, Total	102	-	-	-	80-120	-	-	-
Copper, Total	106	-	-	-	80-120	-	-	-
Lead, Total	106	-	-	-	80-120	-	-	-
Nickel, Total	106	-	-	-	80-120	-	-	-
Selenium, Total	104	-	-	-	80-120	-	-	-
Silver, Total	103	-	-	-	80-120	-	-	-
Zinc, Total	108	-	-	-	80-120	-	-	-
MCP Dissolved Metals - Mansfield Lab Associated sample(s): 01-05 Batch: WG978361-2 WG978361-3								
Mercury, Dissolved	107	-	102	-	80-120	5	-	20
Total Metals - Mansfield Lab Associated sample(s): 03 Batch: WG978403-2								
Mercury, Total	100	-	-	-	85-115	-	-	-

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704803  
**Report Date:** 02/20/17

Parameter	LCS %Recovery	LCSD %Recovery	%Recovery Limits	RPD	RPD Limits
MCP Dissolved Metals - Mansfield Lab Associated sample(s): 01-05 Batch: WG978408-2 WG978408-3					
Arsenic, Dissolved	116	118	80-120	2	20
Barium, Dissolved	100	102	80-120	2	20
Cadmium, Dissolved	107	110	80-120	3	20
Chromium, Dissolved	100	100	80-120	0	20
Lead, Dissolved	106	109	80-120	3	20
Selenium, Dissolved	117	118	80-120	1	20
Silver, Dissolved	106	110	80-120	4	20

**Matrix Spike Analysis**  
**Batch Quality Control**

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704803  
**Report Date:** 02/20/17

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD	Limits
<b>Total Metals - Mansfield Lab Associated sample(s): 03 QC Batch ID: WG978336-7 QC Sample: L1704803-03 Client ID: VES-135 (MW)</b>													
Iron, Total	24.3	1	24.2	0	Q	-	-	-	75-125	-	-	20	
<b>Total Metals - Mansfield Lab Associated sample(s): 03 QC Batch ID: WG978347-3 QC Sample: L1704803-03 Client ID: VES-135 (MW)</b>													
Antimony, Total	ND	0.5	0.5791	116		-	-	-	75-125	-	-	20	
Arsenic, Total	0.00121	0.12	0.1276	105		-	-	-	75-125	-	-	20	
Cadmium, Total	ND	0.051	0.05455	107		-	-	-	75-125	-	-	20	
Chromium, Total	ND	0.2	0.1939	97		-	-	-	75-125	-	-	20	
Copper, Total	ND	0.25	0.2531	101		-	-	-	75-125	-	-	20	
Lead, Total	0.00091	0.51	0.5349	105		-	-	-	75-125	-	-	20	
Nickel, Total	ND	0.5	0.5007	100		-	-	-	75-125	-	-	20	
Selenium, Total	ND	0.12	0.136	113		-	-	-	75-125	-	-	20	
Silver, Total	ND	0.05	0.05021	100		-	-	-	75-125	-	-	20	
Zinc, Total	ND	0.5	0.4992	100		-	-	-	75-125	-	-	20	

**Lab Duplicate Analysis**  
Batch Quality Control

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704803  
**Report Date:** 02/20/17

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 03 QC Batch ID: WG978336-8 QC Sample: L1704803-03 Client ID: VES-135 (MW)						
Iron, Total	24.3	23.1	mg/l	5		20
Total Metals - Mansfield Lab Associated sample(s): 03 QC Batch ID: WG978347-4 QC Sample: L1704803-03 Client ID: VES-135 (MW)						
Antimony, Total	ND	ND	mg/l	NC		20
Arsenic, Total	0.00121	0.00113	mg/l	7		20
Cadmium, Total	ND	ND	mg/l	NC		20
Chromium, Total	ND	ND	mg/l	NC		20
Copper, Total	ND	ND	mg/l	NC		20
Lead, Total	0.00091	0.00097	mg/l	7		20
Nickel, Total	ND	ND	mg/l	NC		20
Selenium, Total	ND	ND	mg/l	NC		20
Silver, Total	ND	ND	mg/l	NC		20
Zinc, Total	ND	ND	mg/l	NC		20

# **INORGANICS & MISCELLANEOUS**



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704803  
**Report Date:** 02/20/17

### SAMPLE RESULTS

Lab ID:	L1704803-03	Date Collected:	02/15/17 13:00
Client ID:	VES-135 (MW)	Date Received:	02/15/17
Sample Location:	MA	Field Prep:	Field Filtered (Dissolved Metals)
Matrix:	Water		

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>MCP General Chemistry - Westborough Lab</b>										
Cyanide, Total	ND		mg/l	0.005	--	1	02/16/17 16:05	02/17/17 11:39	97,9014	JO
<b>General Chemistry - Westborough Lab</b>										
Solids, Total Suspended	20.		mg/l	5.0	NA	1	-	02/16/17 07:31	121,2540D	VB
Chlorine, Total Residual	ND		mg/l	0.02	--	1	-	02/15/17 22:58	121,4500CL-D	AS
TPH, SGT-HEM	ND		mg/l	4.40	--	1.1	02/16/17 17:30	02/16/17 22:00	74,1664A	ML
Phenolics, Total	ND		mg/l	0.030	--	1	02/17/17 15:55	02/17/17 20:57	4,420.1	AW
Chromium, Hexavalent	ND		mg/l	0.010	--	1	02/15/17 23:10	02/15/17 23:27	121,3500CR-B	CW
<b>Anions by Ion Chromatography - Westborough Lab</b>										
Chloride	456.		mg/l	25.0	--	50	-	02/16/17 19:07	44,300.0	AU



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704803  
**Report Date:** 02/20/17

**Method Blank Analysis**  
**Batch Quality Control**

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab for sample(s): 03 Batch: WG978223-1									
Chlorine, Total Residual	ND	mg/l	0.02	--	1	-	02/15/17 22:58	121,4500CL-D	AS
General Chemistry - Westborough Lab for sample(s): 03 Batch: WG978224-1									
Chromium, Hexavalent	ND	mg/l	0.010	--	1	02/15/17 23:10	02/15/17 23:26	121,3500CR-B	CW
General Chemistry - Westborough Lab for sample(s): 03 Batch: WG978301-1									
Solids, Total Suspended	ND	mg/l	5.0	NA	1	-	02/16/17 07:31	121,2540D	VB
MCP General Chemistry - Westborough Lab for sample(s): 03 Batch: WG978435-1									
Cyanide, Total	ND	mg/l	0.005	--	1	02/16/17 16:05	02/17/17 11:26	97,9014	JO
General Chemistry - Westborough Lab for sample(s): 03 Batch: WG978528-1									
TPH, SGT-HEM	ND	mg/l	4.00	--	1	02/16/17 17:30	02/16/17 22:00	74,1664A	ML
General Chemistry - Westborough Lab for sample(s): 03 Batch: WG978858-1									
Phenolics, Total	ND	mg/l	0.030	--	1	02/17/17 15:55	02/17/17 20:53	4,420.1	AW
Anions by Ion Chromatography - Westborough Lab for sample(s): 03 Batch: WG978890-1									
Chloride	ND	mg/l	0.500	--	1	-	02/16/17 18:43	44,300.0	AU



# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704803  
**Report Date:** 02/20/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 03 Batch: WG978223-2								
Chlorine, Total Residual	109	-	-	-	90-110	-	-	-
General Chemistry - Westborough Lab Associated sample(s): 03 Batch: WG978224-2								
Chromium, Hexavalent	100	-	-	-	85-115	-	-	20
MCP General Chemistry - Westborough Lab Associated sample(s): 03 Batch: WG978435-2 WG978435-3								
Cyanide, Total	100	-	102	-	80-120	2	-	20
General Chemistry - Westborough Lab Associated sample(s): 03 Batch: WG978528-2								
TPH	85	-	-	-	64-132	-	-	34
General Chemistry - Westborough Lab Associated sample(s): 03 Batch: WG978858-2								
Phenolics, Total	100	-	-	-	70-130	-	-	-
Anions by Ion Chromatography - Westborough Lab Associated sample(s): 03 Batch: WG978890-2								
Chloride	98	-	-	-	90-110	-	-	-

**Matrix Spike Analysis**  
**Batch Quality Control**

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704803  
**Report Date:** 02/20/17

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	MSD Qual	MSD Found	MSD %Recovery	MSD Qual	Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 03 QC Batch ID: WG978224-4 QC Sample: L1704803-03 Client ID: VES-135 (MW)												
Chromium, Hexavalent	ND	0.1	0.091	91	-	-	-	-	85-115	-	-	20
Anions by Ion Chromatography - Westborough Lab Associated sample(s): 03 QC Batch ID: WG978890-3 QC Sample: L1704803-03 Client ID: VES-135 (MW)												
Chloride	456	200	659	102	-	-	-	-	40-151	-	-	18

**Lab Duplicate Analysis**  
Batch Quality Control

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704803  
**Report Date:** 02/20/17

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 03 QC Batch ID: WG978223-3 QC Sample: L1704803-03 Client ID: VES-135 (MW)						
Chlorine, Total Residual	ND	ND	mg/l	NC		20
General Chemistry - Westborough Lab Associated sample(s): 03 QC Batch ID: WG978224-3 QC Sample: L1704803-03 Client ID: VES-135 (MW)						
Chromium, Hexavalent	ND	ND	mg/l	NC		20
Anions by Ion Chromatography - Westborough Lab Associated sample(s): 03 QC Batch ID: WG978890-4 QC Sample: L1704803-03 Client ID: VES-135 (MW)						
Chloride	456	458	mg/l	0		18

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704803  
**Report Date:** 02/20/17

### Sample Receipt and Container Information

Were project specific reporting limits specified? YES

#### Cooler Information Custody Seal

##### Cooler

A	Absent
B	Absent

#### Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L1704803-01A	Vial HCl preserved	B	N/A	5.4	Y	Absent	MCP-8260-10(14)
L1704803-01B	Vial HCl preserved	B	N/A	5.4	Y	Absent	MCP-8260-10(14)
L1704803-01C	Vial HCl preserved	B	N/A	5.4	Y	Absent	MCP-8260-10(14)
L1704803-01D	Vial HCl preserved	B	N/A	5.4	Y	Absent	VPH-10(14)
L1704803-01E	Vial HCl preserved	B	N/A	5.4	Y	Absent	VPH-10(14)
L1704803-01F	Vial HCl preserved	B	N/A	5.4	Y	Absent	VPH-10(14)
L1704803-01G	Plastic 250ml HNO3 preserved	B	<2	5.4	Y	Absent	MCP-CD-6010S-10(180),MCP-7470S-10(28),MCP-AG-6010S-10(180),MCP-AS-6010S-10(180),MCP-CR-6010S-10(180),MCP-BA-6010S-10(180),MCP-PB-6010S-10(180),MCP-SE-6010S-10(180)
L1704803-01H	Amber 1000ml HCl preserved	B	<2	5.4	Y	Absent	EPH-MS-10(14),EPHD-GC-10(14)
L1704803-01I	Amber 1000ml HCl preserved	B	<2	5.4	Y	Absent	EPH-MS-10(14),EPHD-GC-10(14)
L1704803-02A	Vial HCl preserved	B	N/A	5.4	Y	Absent	MCP-8260-10(14)
L1704803-02B	Vial HCl preserved	B	N/A	5.4	Y	Absent	MCP-8260-10(14)
L1704803-02C	Vial HCl preserved	B	N/A	5.4	Y	Absent	MCP-8260-10(14)
L1704803-02D	Vial HCl preserved	B	N/A	5.4	Y	Absent	VPH-10(14)
L1704803-02E	Vial HCl preserved	B	N/A	5.4	Y	Absent	VPH-10(14)
L1704803-02F	Vial HCl preserved	B	N/A	5.4	Y	Absent	VPH-10(14)
L1704803-02G	Plastic 250ml HNO3 preserved	B	<2	5.4	Y	Absent	MCP-CD-6010S-10(180),MCP-7470S-10(28),MCP-AG-6010S-10(180),MCP-AS-6010S-10(180),MCP-CR-6010S-10(180),MCP-BA-6010S-10(180),MCP-PB-6010S-10(180),MCP-SE-6010S-10(180)
L1704803-02H	Amber 1000ml HCl preserved	B	<2	5.4	Y	Absent	EPH-MS-10(14),EPHD-GC-10(14)
L1704803-02I	Amber 1000ml HCl preserved	B	<2	5.4	Y	Absent	EPH-MS-10(14),EPHD-GC-10(14)
L1704803-03A	Vial HCl preserved	B	N/A	5.4	Y	Absent	MCP-8260SIM-10(14),MCP-8260-10(14)

\*Values in parentheses indicate holding time in days

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704803  
**Report Date:** 02/20/17

**Container Information**

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L1704803-03B	Vial HCl preserved	B	N/A	5.4	Y	Absent	MCP-8260SIM-10(14),MCP-8260-10(14)
L1704803-03C	Vial HCl preserved	B	N/A	5.4	Y	Absent	VPH-10(14)
L1704803-03D	Vial Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> preserved	B	N/A	5.4	Y	Absent	504(14)
L1704803-03E	Vial Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> preserved	B	N/A	5.4	Y	Absent	504(14)
L1704803-03F	Plastic 250ml HNO <sub>3</sub> preserved	B	<2	5.4	Y	Absent	MCP-CD-6010S-10(180),MCP-7470S-10(28),MCP-AG-6010S-10(180),MCP-AS-6010S-10(180),MCP-CR-6010S-10(180),MCP-BA-6010S-10(180),MCP-PB-6010S-10(180),MCP-SE-6010S-10(180)
L1704803-03G	Plastic 250ml NaOH preserved	B	>12	5.4	Y	Absent	MCP-TCN9014-10(14)
L1704803-03H	Plastic 950ml unpreserved	B	7	5.4	Y	Absent	EPH-MS-10(14),EPHD-GC-10(14),TSS-2540(7)
L1704803-03I	Plastic 950ml unpreserved	B	7	5.4	Y	Absent	CL-300(28),HEXCR-3500(1),TRC-4500(1),EPH-MS-10(14),EPHD-GC-10(14)
L1704803-03J	Amber 1000ml HCl preserved	B	N/A	5.4	Y	Absent	TPH-1664(28)
L1704803-03K	Amber 1000ml HCl preserved	B	N/A	5.4	Y	Absent	TPH-1664(28)
L1704803-03L	Amber 950ml H <sub>2</sub> SO <sub>4</sub> preserved	B	<2	5.4	Y	Absent	TPHENOL-420(28)
L1704803-03M	Amber 1000ml unpreserved	B	7	5.4	Y	Absent	8270TCL(7),8270TCL-SIM(7)
L1704803-03N	Amber 1000ml unpreserved	B	7	5.4	Y	Absent	-
L1704803-03O	Amber 1000ml Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub>	B	7	5.4	Y	Absent	PCB-608(7)
L1704803-03P	Amber 1000ml Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub>	B	7	5.4	Y	Absent	PCB-608(7)
L1704803-03X	Plastic 250ml HNO <sub>3</sub> preserved spl	B	<2	5.4	Y	Absent	SE-6020T(180),CR-6020T(180),NI-6020T(180),CU-6020T(180),ZN-6020T(180),FE-UI(180),PB-6020T(180),HG-U(28),AS-6020T(180),SB-6020T(180),AG-6020T(180),CD-6020T(180)
L1704803-04A	Vial HCl preserved	A	N/A	4.9	Y	Absent	MCP-8260-10(14)
L1704803-04B	Vial HCl preserved	A	N/A	4.9	Y	Absent	MCP-8260-10(14)
L1704803-04C	Vial HCl preserved	A	N/A	4.9	Y	Absent	MCP-8260-10(14)
L1704803-04D	Vial HCl preserved	A	N/A	4.9	Y	Absent	VPH-10(14)
L1704803-04E	Vial HCl preserved	A	N/A	4.9	Y	Absent	VPH-10(14)
L1704803-04F	Vial HCl preserved	A	N/A	4.9	Y	Absent	VPH-10(14)
L1704803-04G	Plastic 250ml HNO <sub>3</sub> preserved	A	<2	4.9	Y	Absent	MCP-CD-6010S-10(180),MCP-7470S-10(28),MCP-AG-6010S-10(180),MCP-AS-6010S-10(180),MCP-CR-6010S-10(180),MCP-BA-6010S-10(180),MCP-PB-6010S-10(180),MCP-SE-6010S-10(180)

\*Values in parentheses indicate holding time in days

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704803  
**Report Date:** 02/20/17

**Container Information**

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L1704803-04H	Amber 1000ml HCl preserved	A	<2	4.9	Y	Absent	EPH-MS-10(14),EPHD-GC-10(14)
L1704803-04I	Amber 1000ml HCl preserved	A	<2	4.9	Y	Absent	EPH-MS-10(14),EPHD-GC-10(14)
L1704803-05A	Vial HCl preserved	A	N/A	4.9	Y	Absent	MCP-8260-10(14)
L1704803-05B	Vial HCl preserved	A	N/A	4.9	Y	Absent	MCP-8260-10(14)
L1704803-05C	Vial HCl preserved	A	N/A	4.9	Y	Absent	MCP-8260-10(14)
L1704803-05D	Vial HCl preserved	A	N/A	4.9	Y	Absent	VPH-10(14)
L1704803-05E	Vial HCl preserved	A	N/A	4.9	Y	Absent	VPH-10(14)
L1704803-05F	Vial HCl preserved	A	N/A	4.9	Y	Absent	VPH-10(14)
L1704803-05G	Plastic 250ml HNO3 preserved	A	<2	4.9	Y	Absent	MCP-CD-6010S-10(180),MCP-7470S-10(28),MCP-AG-6010S-10(180),MCP-AS-6010S-10(180),MCP-CR-6010S-10(180),MCP-BA-6010S-10(180),MCP-PB-6010S-10(180),MCP-SE-6010S-10(180)
L1704803-05H	Amber 1000ml HCl preserved	A	<2	4.9	Y	Absent	EPH-MS-10(14),EPHD-GC-10(14)
L1704803-05I	Amber 1000ml HCl preserved	A	<2	4.9	Y	Absent	EPH-MS-10(14),EPHD-GC-10(14)

\*Values in parentheses indicate holding time in days

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704803  
**Report Date:** 02/20/17

## GLOSSARY

### Acronyms

EDL	- Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).
EPA	- Environmental Protection Agency.
LCS	- Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCSD	- Laboratory Control Sample Duplicate: Refer to LCS.
LFB	- Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
MDL	- Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
MS	- Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available.
MSD	- Matrix Spike Sample Duplicate: Refer to MS.
NA	- Not Applicable.
NC	- Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
NDPA/DPA	- N-Nitrosodiphenylamine/Diphenylamine.
NI	- Not Ignitable.
NP	- Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.
RL	- Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
RPD	- Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.
SRM	- Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.
STLP	- Semi-dynamic Tank Leaching Procedure per EPA Method 1315.
TIC	- Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

### Footnotes

- 1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

### Terms

**Total:** With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

**Analytical Method:** Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

### Data Qualifiers

- A** - Spectra identified as "Aldol Condensation Product".
- B** - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the

**Report Format:** Data Usability Report



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704803  
**Report Date:** 02/20/17

**Data Qualifiers**

reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

- C** - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.
- D** - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.
- E** - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.
- G** - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.
- H** - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.
- I** - The lower value for the two columns has been reported due to obvious interference.
- M** - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.
- NJ** - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.
- P** - The RPD between the results for the two columns exceeds the method-specified criteria.
- Q** - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)
- R** - Analytical results are from sample re-analysis.
- RE** - Analytical results are from sample re-extraction.
- S** - Analytical results are from modified screening analysis.
- J** - Estimated value. This represents an estimated concentration for Tentatively Identified Compounds (TICs).
- ND** - Not detected at the reporting limit (RL) for the sample.

*Report Format:* Data Usability Report



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704803  
**Report Date:** 02/20/17

## REFERENCES

- 1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - IV, 2007.
- 3 Methods for the Determination of Metals in Environmental Samples, Supplement I. EPA/600/R-94/111. May 1994.
- 4 Methods for Chemical Analysis of Water and Wastes. EPA 600/4-79-020. Revised March 1983.
- 5 Methods for the Organic Chemical Analysis of Municipal and Industrial Wastewater. Appendix A, Part 136, 40 CFR (Code of Federal Regulations).
- 14 Methods for the Determination of Organic Compounds in Finished Drinking Water and Raw Source Water. EPA/600/4-88/039, Revised July 1991.
- 19 Inductively Coupled Plasma Atomic Emission Spectrometric Method for Trace Element Analysis of Water and Wastes. Appendix C, Part 136, 40 CFR (Code of Federal Regulations). July 1, 1999 edition.
- 44 Methods for the Determination of Inorganic Substances in Environmental Samples, EPA/600/R-93/100, August 1993.
- 74 Method 1664, Revision A: N-Hexane Extractable Material (HEM; Oil & Grease) and Silica Gel Treated N-Hexane Extractable Material (SGT-HEM; Non-polar Material) by Extraction and Gravimetry, EPA-821-R-98-002, February 1999.
- 97 EPA Test Methods (SW-846) with QC Requirements & Performance Standards for the Analysis of EPA SW-846 Methods under the Massachusetts Contingency Plan, WSC-CAM-IIA, IIB, IIIA, IIIB, IIIC, IID, VA, VB, VC, VIA, VIB, VIIIA and VIIIB, July 2010.
- 98 Method for the Determination of Extractable Petroleum Hydrocarbons (EPH), MassDEP, May 2004, Revision 1.1 with QC Requirements & Performance Standards for the Analysis of EPH under the Massachusetts Contingency Plan, WSC-CAM-IVB, July 2010.
- 100 Method for the Determination of Volatile Petroleum Hydrocarbons (VPH), MassDEP, May 2004, Revision 1.1 with QC Requirements & Performance Standards for the Analysis of VPH under the Massachusetts Contingency Plan, WSC-CAM-IVA, July 2010.
- 121 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. Standard Methods Online.

## LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at its own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.



## Certification Information

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**The following analytes are not included in our Primary NELAP Scope of Accreditation:**

**Westborough Facility**

EPA 624: m/p-xylene, o-xylene  
EPA 8260C: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), Methyl methacrylate, 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.  
EPA 8270D: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.  
EPA 300: DW: Bromide  
EPA 6860: NPW and SCM: Perchlorate  
EPA 9010: NPW and SCM: Amenable Cyanide Distillation  
EPA 9012B: NPW: Total Cyanide  
EPA 9050A: NPW: Specific Conductance  
SM3500: NPW: Ferrous Iron  
SM4500: NPW: Amenable Cyanide, Dissolved Oxygen; SCM: Total Phosphorus, TKN, NO<sub>2</sub>, NO<sub>3</sub>.  
SM5310C: DW: Dissolved Organic Carbon

**Mansfield Facility**

SM 2540D: TSS  
EPA 3005A NPW  
EPA 8082A: NPW: PCB: 1, 5, 31, 87, 101, 110, 141, 151, 153, 180, 183, 187.  
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.  
Biological Tissue Matrix: EPA 3050B

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**The following analytes are included in our Massachusetts DEP Scope of Accreditation**

**Westborough Facility:**

**Drinking Water**

EPA 300.0: Nitrate-N, Fluoride, Sulfate; EPA 353.2: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C**, **SM4500CN-CE**, **EPA 180.1**, **SM2130B**, **SM4500CI-D**, **SM2320B**, **SM2540C**, **SM4500H-B**  
EPA 332: Perchlorate; EPA 524.2: THMs and VOCs; **EPA 504.1**: EDB, DBCP.  
Microbiology: **SM9215B**; **SM9223-P/A**, **SM9223B-Colilert-QT**,**SM9222D**.

**Non-Potable Water**

**SM4500H,B**, **EPA 120.1**, **SM2510B**, **SM2540C**, **SM2320B**, **SM4500CL-E**, **SM4500F-BC**, **SM4500NH3-BH**, **EPA 350.1**: Ammonia-N, LACHAT 10-107-06-1-B: Ammonia-N, **SM4500NO3-F**, **EPA 353.2**: Nitrate-N, **EPA 351.1**, **SM4500P-E**, **SM4500P-B**, **E**, **SM4500SO4-E**, **SM5220D**, **EPA 410.4**, **SM5210B**, **SM5310C**, **SM4500CL-D**, **EPA 1664**, **EPA 420.1**, **SM4500-CN-CE**, **SM2540D**.  
**EPA 624**: Volatile Halocarbons & Aromatics,  
**EPA 608**: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs  
**EPA 625**: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045**: PCB-Oil.  
Microbiology: **SM9223B-Colilert-QT**; **Enterolert-QT**, **SM9221E**.

**Mansfield Facility:**

**Drinking Water**

**EPA 200.7**: Ba, Be, Cd, Cr, Cu, Ni, Na, Ca. **EPA 200.8**: Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Ni, Se, TL. **EPA 245.1 Hg**.

**Non-Potable Water**

**EPA 200.7**: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.  
**EPA 200.8**: Al, Sb, As, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn.  
**EPA 245.1 Hg**.  
**SM2340B**

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For a complete listing of analytes and methods, please contact your Alpha Project Manager.



8 Walkup Drive  
Westboro, MA 01581  
Tel: 508-898-9220

# CHAIN OF CUSTODY

PAGE 1 OF 1

Date Rec'd in Lab: 2/15/17

ALPHA Job #: U1704803

320 Forbes Blvd  
Mansfield, MA 02048  
Tel: 508-822-9300

## Client Information

Client: VerTEX

Address: One Congress St., 10th fl  
BOSTON MA 02114

Phone: 781-917-5360

Email: bgibbons@vertexeng.com

ctrapp@vertexeng.com

Additional Project Information:

\*NPDES gw parameters: 1,4 Dioxane 8260C-SIM, PCB-608,  
SVOC 8270D-PATH&SIM, GDB-504.1, total metals 6000 & 7000  
Total cyanide 9010C, hexachrom 7196A, TPH 1664, total phenol 1665  
Total residual Chlorine 4500, Total susp solids 2940D & chloride 9251

ALPHA Lab ID  
(Lab Use Only)

Sample ID

Collection

Sample

Sampler Initials

Date

Time

- 04803-01 VES-132 (MW) 2/15/17 1155 GW TC X
- 02 VES-133 (MW) 1400 TC X X X
- 03 VES-135 (MW) 1300 EP X X X X
- 04 VES-129 (MW) 1530 TC X X X
- 05 VES-120 (MW) 1450 EP X X X

\* Per Bill Gibbons- MCP Protocols required for 8260, Dissolved RCRA8 Metals, EPH and VPH

NPDES parameters- do not require MCP they need RGP methods.

Container Type  
P= Plastic  
A= Amber glass  
V= Vial  
G= Glass  
B= Bacteria cup  
C= Cube  
O= Other  
E= Encore  
D= BOD Bottle

Preservative  
A= None  
B= HCl  
C= HNO<sub>3</sub>  
D= H<sub>2</sub>SO<sub>4</sub>  
E= NaOH  
F= MeOH  
G= NaHSO<sub>4</sub>  
H= Na<sub>2</sub>S<sub>2</sub>O<sub>3</sub>  
I= Ascorbic Acid  
J= NH<sub>4</sub>Cl  
K= Zn Acetate  
O= Other

Container Type	V	P	A	V
Preservative	B	C	B	B

Relinquished By:	Date/Time	Received By:	Date/Time
<u>Rob Mayo</u>	<u>2/15/17 16:00</u>	<u>Rob Mayo</u>	<u>2/15/17 16:00</u>
<u>Rob Mayo</u>	<u>2/15/17 18:40</u>	<u>User</u>	<u>2/15/17 18:40</u>

All samples submitted are subject to  
Alpha's Terms and Conditions.  
See reverse side.

FORM NO: 01-01 (rev. 12-Mar-2012)



## **CHAIN OF CUSTODY**

PAGE \_\_\_\_\_ OF \_\_\_\_\_

Date Rec'd in Lab: 2/13/17

ALPHA Job #: U1704803

CHAIN OF CUSTODY						PAGE <u>1</u> OF <u>1</u>	Date Rec'd in Lab: <u>2/15/17</u>	ALPHA Job #: <u>U1704803</u>	
Project Information			Report Information - Data Deliverables			Billing Information			
Project Name: <u>East Boston</u>			<input checked="" type="checkbox"/> TRADEX <input checked="" type="checkbox"/> EMAIL			<input checked="" type="checkbox"/> Same as Client info <input type="checkbox"/> PO #:			
Project Location: <u>MA</u>			Regulatory Requirements & Project Information Requirements						
Client Information		Project #: <u>43068</u>		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No MA MCP Analytical Methods <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Matrix Spike Required on this SDG? (Required for MCP Inorganics) <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No GW1 Standards (Info Required for Metals & EPH with Targets) <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No NPDES RGP <input type="checkbox"/> Other State /Fed Program _____ Criteria _____		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No CT RCP Analytical Methods 			
Client: <u>VERTEX</u>		Project Manager: <u>B. Gibbons</u>							
Address: <u>One Congress St, 10th fl</u> <u>BOSTON MA 02114</u>		ALPHA Quote #:							
Phone: <u>781-917-5260</u>		Turn-Around Time							
Email: <u>b.gibbons@vertexeng.com</u> <u>ctrapo@vertexeng.com</u>		<input type="checkbox"/> Standard <u>RUSH (only confirmed if pre-approved)</u> <u>72-hr</u> Date Due:							
Additional Project Information: *NPDES gw parameters: 1,4 Dioxane 8260C-SIM, PCB-608, SVOC 8270D-PAH&SIM, GDB-504.1, total metals 6000&7000 Total cyanide 9010C, hexachrom 7196A, TPt 1664, total phenol 965 Total residual Chlorine 4500, Total susp solids 2940D & chloride 9251									
ALPHA Lab ID (Lab Use Only)	Sample ID	Collection		Sample Matrix	Sampler Initials	ANALYSIS			SAMPLE INFO
		Date	Time			VOC: <input checked="" type="checkbox"/> 6260 <input type="checkbox"/> 624 <input type="checkbox"/> 524.2	METALS: <input type="checkbox"/> MCP 13 <input type="checkbox"/> MCP 14 <input type="checkbox"/> RCRAS <input type="checkbox"/> RCR48 <input type="checkbox"/> PP13	EPH: <input type="checkbox"/> Ranges & Targets <input type="checkbox"/> Ranges Only <input type="checkbox"/> PEST	
04803-01	VES-132 (MW)	2/15/17	1155	GW	TC	X	X X X		
-02	VES-133 (MW)		1400		TC	X	X X Y		
-03	VES-135 (MW)		1300		EP	X	X Y X	X	
-04	VES-129 (MW)		1530		TC	X	X X X		
-05	VES-120 (MW)		1450		EP	X	X X X		
									9
									9
									16
									9
									9
									9
Container Type P= Plastic A= Amber glass V= Vial G= Glass						Preservative A= None B= HCl C= HNO3 D= H2SO4			Sample Comments
Container Type V						P	A	V	TOTAL BOTTLES
Preservative B						C	B	B	

Container Type	Preservative	Container Type	V	P	A	V			
P= Plastic	A= None	Preservative	B	C	B	B			
A= Amber glass	B= HCl								
V= Vial	C= HNO <sub>3</sub>								
G= Glass	D= H <sub>2</sub> SO <sub>4</sub>								
B= Bacteria cup	E= NaOH								
C= Cube	F= MeOH								
O= Other	G= NaHSO <sub>4</sub>								
E= Encore	H = Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub>								
D= BOD Bottle	I= Ascorbic Acid								
	J = NH <sub>4</sub> Cl								
	K= Zn Acetate								
	O= Other								

Page 118 of 126

**Method Blank Summary  
Form 4**

Client : Vertex Environmental Services, Inc.      Lab Number : L1704803  
Project Name : EAST BOSTON      Project Number : 43068  
Lab Sample ID : WG979334-5      Lab File ID : V16170220A07  
Instrument ID : VOA116  
Matrix : WATER      Analysis Date : 02/20/17 06:45

Client Sample No.	Lab Sample ID	Analysis Date
WG979334-3LCS	WG979334-3	02/20/17 04:40
WG979334-4LCSD	WG979334-4	02/20/17 05:05
VES-135 (MW)	L1704803-03	02/20/17 07:36

# Continuing Calibration Form 7

Client : Vertex Environmental Services, Inc.      Lab Number : L1704803  
 Project Name : EAST BOSTON      Project Number : 43068  
 Instrument ID : VOA116      Calibration Date : 02/20/17 04:40  
 Lab File ID : V16170220A02      Init. Calib. Date(s) : 02/17/17      02/17/17  
 Sample No : WG979334-2      Init. Calib. Times : 16:39      19:36  
 Channel :

Compound	Ave. RRF	RRF	Min RRF	%D	Max %D	Area%	Dev(min)
Fluorobenzene	1	1	-	0	20	104	0
1,4-Dioxane	10	10.557	-	-5.6	20	118	0
1,4-Dichlorobenzene-d4	1	1	-	0	20	101	0

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\* Value outside of QC limits.



**Method Blank Summary  
Form 4**

Client	: Vertex Environmental Services, Inc.	Lab Number	: L1704803
Project Name	: EAST BOSTON	Project Number	: 43068
Lab Sample ID	: WG978759-5	Lab File ID	: VQ170217A04
Instrument ID	: QUIMBY		
Matrix	: WATER	Analysis Date	: 02/17/17 05:29

Client Sample No.	Lab Sample ID	Analysis Date
WG978759-3LCS	WG978759-3	02/17/17 03:54
WG978759-4LCSD	WG978759-4	02/17/17 04:26
VES-132 (MW)	L1704803-01	02/17/17 09:08
VES-133 (MW)	L1704803-02	02/17/17 09:40
VES-129 (MW)	L1704803-04	02/17/17 10:11
VES-120 (MW)	L1704803-05	02/17/17 10:43

**Method Blank Summary  
Form 4**

Client	: Vertex Environmental Services, Inc.	Lab Number	: L1704803
Project Name	: EAST BOSTON	Project Number	: 43068
Lab Sample ID	: WG979299-5	Lab File ID	: V16170220A07
Instrument ID	: VOA116		
Matrix	: WATER	Analysis Date	: 02/20/17 06:45

Client Sample No.	Lab Sample ID	Analysis Date
WG979299-3LCS	WG979299-3	02/20/17 05:30
WG979299-4LCSD	WG979299-4	02/20/17 05:55
VES-135 (MW)	L1704803-03	02/20/17 07:36

**Continuing Calibration**  
**Form 7**

Client	: Vertex Environmental Services, Inc.	Lab Number	: L1704803
Project Name	: EAST BOSTON	Project Number	: 43068
Instrument ID	: QUIMBY	Calibration Date	: 02/17/17 03:54
Lab File ID	: VQ170217A01	Init. Calib. Date(s)	: 01/30/17
Sample No	: WG978759-2	Init. Calib. Times	: 09:04
Channel	:		01/30/17 12:43

Compound	Ave. RRF	RRF	Min RRF	%D	Max %D	Area%	Dev(min)
Fluorobenzene	1	1	-	0	20	112	0
Dichlorodifluoromethane	0.503	0.51	-	-1.4	20	103	0
Chloromethane	0.631	0.509	-	19.3	20	89	0
Vinyl chloride	0.559	0.601	-	-7.5	20	109	0
Bromomethane	10	8.883	-	11.2	20	115	0
Chloroethane	0.348	0.365	-	-4.9	20	111	0
Trichlorofluoromethane	0.574	0.586	-	-2.1	20	109	0
Ethyl ether	0.155	0.178	-	-14.8	20	121	0
1,1-Dichloroethene	0.338	0.343	-	-1.5	20	109	0
Carbon disulfide	1.059	0.999	-	5.7	20	106	0
Freon-113	0.315	0.34	-	-7.9	20	114	0
Methylene chloride	0.411	0.439	-	-6.8	20	116	0
Acetone	10	10.808	-	-8.1	20	117	0
trans-1,2-Dichloroethene	0.389	0.39	-	-0.3	20	110	0
Methyl tert-butyl ether	0.749	0.822	-	-9.7	20	122	0
tert-Butyl alcohol	0.011	0.012*	-	-9.1	20	121	0
Diisopropyl ether	1.331	1.432	-	-7.6	20	117	0
1,1-Dichloroethane	0.778	0.761	-	2.2	20	107	0
Ethyl tert-butyl ether	1.054	1.165	-	-10.5	20	123	0
cis-1,2-Dichloroethene	0.412	0.415	-	-0.7	20	109	0
2,2-Dichloropropane	10	8.822	-	11.8	20	111	0
Bromochloromethane	0.151	0.164	-	-8.6	20	119	0
Chloroform	0.689	0.672	-	2.5	20	106	0
Carbon tetrachloride	10	8.365	-	16.3	20	104	0
Tetrahydrofuran	0.059	0.063	-	-6.8	20	117	0
Dibromofluoromethane	0.21	0.204	-	2.9	20	109	0
1,1,1-Trichloroethane	0.632	0.605	-	4.3	20	106	0
2-Butanone	10	10.701	-	-7	20	121	-02
1,1-Dichloropropene	0.606	0.601	-	0.8	20	108	0
Benzene	1.714	1.754	-	-2.3	20	112	0
tert-Amyl methyl ether	0.802	0.895	-	-11.6	20	125	0
1,2-Dichloroethane-d4	0.238	0.225	-	5.5	20	105	0
1,2-Dichloroethane	0.495	0.503	-	-1.6	20	109	0
Trichloroethene	0.447	0.437	-	2.2	20	108	0
Dibromomethane	0.175	0.183	-	-4.6	20	113	0
1,2-Dichloropropane	0.427	0.429	-	-0.5	20	110	0
2-Chloroethyl vinyl ether	0.194	0.18	-	7.2	20	104	0
Bromodichloromethane	0.495	0.464	-	6.3	20	105	0
1,4-Dioxane	0.00158	0.00158*	-	0	20	111	0
cis-1,3-Dichloropropene	10	8.666	-	13.3	20	106	0
Chlorobenzene-d5	1	1	-	0	20	118	.01
Toluene-d8	1.284	1.291	-	-0.5	20	116	0
Toluene	1.445	1.473	-	-1.9	20	113	0
4-Methyl-2-pentanone	0.093	0.101	-	-8.6	20	127	0
Tetrachloroethene	0.548	0.573	-	-4.6	20	120	0

\* Value outside of QC limits.



# Continuing Calibration

## Form 7

Client : Vertex Environmental Services, Inc.      Lab Number : L1704803  
 Project Name : EAST BOSTON      Project Number : 43068  
 Instrument ID : QUIMBY      Calibration Date : 02/17/17 03:54  
 Lab File ID : VQ170217A01      Init. Calib. Date(s) : 01/30/17      01/30/17  
 Sample No : WG978759-2      Init. Calib. Times : 09:04      12:43  
 Channel :

Compound	Ave. RRF	RRF	Min RRF	%D	Max %D	Area%	Dev(min)
trans-1,3-Dichloropropene	10	8.657	-	13.4	20	111	0
1,1,2-Trichloroethane	0.253	0.264	-	-4.3	20	118	0
Chlorodibromomethane	0.338	0.311	-	8	20	108	0
1,3-Dichloropropane	0.569	0.575	-	-1.1	20	115	0
1,2-Dibromoethane	0.287	0.297	-	-3.5	20	119	0
2-Hexanone	0.154	0.165	-	-7.1	20	126	0
Chlorobenzene	1.54	1.528	-	0.8	20	112	0
Ethylbenzene	2.868	2.574	-	10.3	20	103	.01
1,1,1,2-Tetrachloroethane	0.436	0.411	-	5.7	20	111	0
p/m Xylene	0.941	0.75	-	20.3*	20	95	.02
o Xylene	0.866	0.691	-	20.2*	20	94	.01
Styrene	1.41	1.168	-	17.2	20	96	.01
1,4-Dichlorobenzene-d4	1	1	-	0	20	98	.01
Bromoform	10	10.054	-	-0.5	20	110	0
Isopropylbenzene	6.841	7.24	-	-5.8	20	97	.01
4-Bromofluorobenzene	1.26	1.443	-	-14.5	20	110	0
Bromobenzene	1.437	1.654	-	-15.1	20	106	.01
n-Propylbenzene	7.306	6.972	-	4.6	20	88	.01
1,1,2,2-Tetrachloroethane	0.921	1.194	-	-29.6*	20	117	0
2-Chlorotoluene	4.784	4.596	-	3.9	20	89	.01
1,3,5-Trimethylbenzene	3.558	2.765	-	22.3*	20	74	0
1,2,3-Trichloropropane	0.74	0.956	-	-29.2*	20	117	0
4-Chlorotoluene	4.168	3.893	-	6.6	20	88	.01
tert-Butylbenzene	4.306	4.088	-	5.1	20	88	0
1,2,4-Trimethylbenzene	3.397	2.632	-	22.5*	20	72	0
sec-Butylbenzene	6.45	6.167	-	4.4	20	86	.01
p-Isopropyltoluene	4.434	3.898	-	12.1	20	79	.01
1,3-Dichlorobenzene	2.477	2.408	-	2.8	20	91	.01
1,4-Dichlorobenzene	2.309	2.208	-	4.4	20	89	.01
n-Butylbenzene	4.424	3.781	-	14.5	20	74	.01
1,2-Dichlorobenzene	2.116	2.106	-	0.5	20	92	.01
1,2-Dibromo-3-chloropropan	10	11.694	-	-16.9	20	111	0
Hexachlorobutadiene	0.697	0.782	-	-12.2	20	102	0
1,2,4-Trichlorobenzene	0.844	0.727	-	13.9	20	76	0
Naphthalene	1.311	1.125	-	14.2	20	75	.01
1,2,3-Trichlorobenzene	0.713	0.642	-	10	20	78	0

\* Value outside of QC limits.



# Continuing Calibration Form 7

Client : Vertex Environmental Services, Inc.      Lab Number : L1704803  
 Project Name : EAST BOSTON      Project Number : 43068  
 Instrument ID : VOA116      Calibration Date : 02/20/17 05:30  
 Lab File ID : V16170220A04      Init. Calib. Date(s) : 01/30/17      01/30/17  
 Sample No : WG979299-2      Init. Calib. Times : 08:54      11:50  
 Channel :

Compound	Ave. RRF	RRF	Min RRF	%D	Max %D	Area%	Dev(min)
Fluorobenzene	1	1	-	0	20	72	0
Dichlorodifluoromethane	0.489	0.514	-	-5.1	20	71	0
Chloromethane	0.517	0.553	-	-7	20	73	0
Vinyl chloride	0.5	0.522	-	-4.4	20	73	0
Bromomethane	0.2	0.186	-	7	20	66	0
Chloroethane	0.245	0.246	-	-0.4	20	67	0
Trichlorofluoromethane	0.574	0.732	-	-27.5*	20	85	0
Ethyl ether	0.134	0.133	-	0.7	20	69	-.01
1,1-Dichloroethene	0.339	0.362	-	-6.8	20	75	0
Carbon disulfide	1.056	1.141	-	-8	20	77	0
Freon-113	0.336	0.408	-	-21.4*	20	80	0
Methylene chloride	0.39	0.412	-	-5.6	20	74	0
Acetone	10	10.674	-	-6.7	20	68	0
trans-1,2-Dichloroethene	0.373	0.39	-	-4.6	20	73	0
Methyl tert-butyl ether	0.693	0.678	-	2.2	20	72	0
tert-Butyl alcohol	0.015	0.015*	-	0	20	71	0
Diisopropyl ether	1.239	1.119	-	9.7	20	67	0
1,1-Dichloroethane	0.791	0.863	-	-9.1	20	74	-.01
Ethyl tert-butyl ether	1.001	0.974	-	2.7	20	71	0
cis-1,2-Dichloroethene	0.404	0.424	-	-5	20	73	0
2,2-Dichloropropane	0.577	0.669	-	-15.9	20	82	0
Bromochloromethane	0.175	0.202	-	-15.4	20	76	0
Chloroform	0.703	0.793	-	-12.8	20	77	0
Carbon tetrachloride	0.575	0.714	-	-24.2*	20	86	0
Tetrahydrofuran	0.075	0.074	-	1.3	20	69	0
Dibromofluoromethane	0.44	0.457	-	-3.9	20	74	0
1,1,1-Trichloroethane	0.626	0.752	-	-20.1*	20	83	0
2-Butanone	0.084	0.085*	-	-1.2	20	69	-.01
1,1-Dichloropropene	0.501	0.529	-	-5.6	20	75	0
Benzene	1.52	1.609	-	-5.9	20	72	0
tert-Amyl methyl ether	0.708	0.663	-	6.4	20	73	0
1,2-Dichloroethane-d4	0.474	0.492	-	-3.8	20	75	0
1,2-Dichloroethane	0.475	0.545	-	-14.7	20	79	0
Trichloroethene	0.418	0.47	-	-12.4	20	78	0
Dibromomethane	0.194	0.213	-	-9.8	20	77	0
1,2-Dichloropropane	0.413	0.421	-	-1.9	20	70	0
2-Chloroethyl vinyl ether	10	6.771	-	32.3*	20	60	0
Bromodichloromethane	0.517	0.557	-	-7.7	20	78	0
1,4-Dioxane	0.00125	0.00115*	-	8	20	70	0
cis-1,3-Dichloropropene	0.438	0.449	-	-2.5	20	73	0
Chlorobenzene-d5	1	1	-	0	20	75	0
Toluene-d8	1.278	1.228	-	3.9	20	71	0
Toluene	0.81	0.835	-	-3.1	20	75	0
4-Methyl-2-pentanone	10	8.203	-	18	20	67	0
Tetrachloroethene	0.378	0.417	-	-10.3	20	81	0

\* Value outside of QC limits.



# Continuing Calibration

## Form 7

Client : Vertex Environmental Services, Inc.      Lab Number : L1704803  
 Project Name : EAST BOSTON      Project Number : 43068  
 Instrument ID : VOA116      Calibration Date : 02/20/17 05:30  
 Lab File ID : V16170220A04      Init. Calib. Date(s) : 01/30/17      01/30/17  
 Sample No : WG979299-2      Init. Calib. Times : 08:54      11:50  
 Channel :

Compound	Ave. RRF	RRF	Min RRF	%D	Max %D	Area%	Dev(min)
trans-1,3-Dichloropropene	0.374	0.367	-	1.9	20	75	0
1,1,2-Trichloroethane	0.193	0.195	-	-1	20	73	0
Chlorodibromomethane	0.286	0.304	-	-6.3	20	78	0
1,3-Dichloropropane	0.381	0.376	-	1.3	20	72	0
1,2-Dibromoethane	0.209	0.217	-	-3.8	20	74	0
2-Hexanone	10	7.464	-	25.4*	20	64	0
Chlorobenzene	0.874	0.89	-	-1.8	20	75	0
Ethylbenzene	1.505	1.545	-	-2.7	20	74	0
1,1,1,2-Tetrachloroethane	0.321	0.357	-	-11.2	20	80	0
p/m Xylene	20	21.011	-	-5.1	20	77	0
o Xylene	20	19.595	-	2	20	75	0
Styrene	20	18.96	-	5.2	20	73	0
1,4-Dichlorobenzene-d4	1	1	-	0	20	85	0
Bromoform	0.329	0.305	-	7.3	20	80	0
Isopropylbenzene	10	8.5	-	15	20	78	0
4-Bromofluorobenzene	0.827	0.76	-	8.1	20	80	0
Bromobenzene	0.667	0.625	-	6.3	20	77	0
n-Propylbenzene	3.447	3.205	-	7	20	76	0
1,1,2,2-Tetrachloroethane	0.477	0.433	-	9.2	20	74	0
2-Chlorotoluene	2.351	2.289	-	2.6	20	78	0
1,3,5-Trimethylbenzene	10	9.283	-	7.2	20	79	0
1,2,3-Trichloropropane	0.376	0.344	-	8.5	20	76	0
4-Chlorotoluene	1.991	1.875	-	5.8	20	76	0
tert-Butylbenzene	10	8.595	-	14	20	78	0
1,2,4-Trimethylbenzene	10	9.088	-	9.1	20	78	0
sec-Butylbenzene	2.307	2.709	-	-17.4	20	92	-01
p-Isopropyltoluene	10	8.792	-	12.1	20	79	0
1,3-Dichlorobenzene	1.357	1.343	-	1	20	80	0
1,4-Dichlorobenzene	1.333	1.29	-	3.2	20	79	0
n-Butylbenzene	10	9.143	-	8.6	20	77	0
1,2-Dichlorobenzene	1.186	1.127	-	5	20	78	0
1,2-Dibromo-3-chloropropan	10	9.071	-	9.3	20	78	0
Hexachlorobutadiene	0.294	0.29	-	1.4	20	85	0
1,2,4-Trichlorobenzene	10	8.157	-	18.4	20	80	0
Naphthalene	10	7.091	-	29.1*	20	76	0
1,2,3-Trichlorobenzene	0.56	0.504	-	10	20	80	0

\* Value outside of QC limits.





## ANALYTICAL REPORT

Lab Number:	L1704816
Client:	Vertex Environmental Services, Inc. 400 Libbey Pkwy Weymouth, MA 02184
ATTN:	Bill Gibbons
Phone:	(617) 830-1540
Project Name:	E. BOSTON
Project Number:	43068
Report Date:	02/20/17

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Certifications & Approvals: MA (M-MA086), NH NELAP (2064), NJ NELAP (MA935), CT (PH-0574), IL (200077), ME (MA00086), MD (348), NH (2003), NY (11148), NC (25700/666), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #P330-14-00197).

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Eight Walkup Drive, Westborough, MA 01581-1019  
508-898-9220 (Fax) 508-898-9193 800-624-9220 - [www.alphalab.com](http://www.alphalab.com)



**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704816  
**Report Date:** 02/20/17

<b>Alpha Sample ID</b>	<b>Client ID</b>	<b>Matrix</b>	<b>Sample Location</b>	<b>Collection Date/Time</b>	<b>Receive Date</b>
L1704816-01	VES-113 (2-4)	SOIL	E. BOSTON	02/15/17 14:25	02/15/17
L1704816-02	VES-117 (2-4)	SOIL	E. BOSTON	02/15/17 14:00	02/15/17
L1704816-03	VES-122 (3-5)	SOIL	E. BOSTON	02/15/17 13:30	02/15/17
L1704816-04	VES-126 (3-5)	SOIL	E. BOSTON	02/15/17 12:55	02/15/17
L1704816-05	VES-114 (0-2)	SOIL	E. BOSTON	02/15/17 11:00	02/15/17
L1704816-06	VES-114 (2-4)	SOIL	E. BOSTON	02/15/17 11:05	02/15/17
L1704816-07	VES-115 (0-2)	SOIL	E. BOSTON	02/15/17 10:30	02/15/17
L1704816-08	VES-115 (2-4)	SOIL	E. BOSTON	02/15/17 10:35	02/15/17
L1704816-09	VES-118 (22-24)	SOIL	E. BOSTON	02/15/17 09:35	02/15/17
L1704816-10	VES-118 (0-2)	SOIL	E. BOSTON	02/15/17 09:05	02/15/17
L1704816-11	VES-118 (2-4)	SOIL	E. BOSTON	02/15/17 09:10	02/15/17
L1704816-12	VES-127 (18-20)	SOIL	E. BOSTON	02/15/17 08:40	02/15/17
L1704816-13	VES-127 (0-2)	SOIL	E. BOSTON	02/15/17 08:25	02/15/17
L1704816-14	VES-127 (2-4)	SOIL	E. BOSTON	02/15/17 08:30	02/15/17
L1704816-15	VES-106 (10-12)	SOIL	E. BOSTON	02/15/17 10:00	02/15/17

**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704816  
**Report Date:** 02/20/17

### MADEP MCP Response Action Analytical Report Certification

This form provides certifications for all samples performed by MCP methods. Please refer to the Sample Results and Container Information sections of this report for specification of MCP methods used for each analysis. The following questions pertain only to MCP Analytical Methods.

<b>An affirmative response to questions A through F is required for "Presumptive Certainty" status</b>		
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
B	Were the analytical method(s) and all associated QC requirements specified in the selected CAM protocol(s) followed?	YES
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
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
E a.	VPH, EPH, and APH Methods only: Was each method conducted without significant modification(s)? (Refer to the individual method(s) for a list of significant modifications).	YES
E b.	APH and TO-15 Methods only: Was the complete analyte list reported for each method?	N/A
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

<b>A response to questions G, H and I is required for "Presumptive Certainty" status</b>		
G	Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocol(s)?	NO
H	Were all QC performance standards specified in the CAM protocol(s) achieved?	NO
I	Were results reported for the complete analyte list specified in the selected CAM protocol(s)?	NO

**For any questions answered "No", please refer to the case narrative section on the following page(s).**

Please note that sample matrix information is located in the Sample Results section of this report.



**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704816  
**Report Date:** 02/20/17

### Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively. When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. All specific QC information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated usability implications. Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances the specific failure is not narrated but noted in the associated QC table. The information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated usability implications.

Please see the associated ADEX data file for a comparison of laboratory reporting limits that were achieved with the regulatory Numerical Standards requested on the Chain of Custody.

#### HOLD POLICY

For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Client Service Representative and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Client Services at 800-624-9220 with any questions.

**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704816  
**Report Date:** 02/20/17

### Case Narrative (continued)

#### MCP Related Narratives

##### Sample Receipt

In reference to question H:

A Matrix Spike was not submitted for the analysis of Metals.

#### Volatile Organics

L1704816-09 was analyzed as a High Level Methanol in order to quantitate the sample within the calibration range. The result should be considered estimated, and is qualified with an E flag, for the compound that exceeded the calibration on the initial Low Level analysis. This analyte was not present in the high-level analysis. The results of both analyses are reported.

In reference to question H:

The initial calibration, associated with L1704816-01 through -04, -06, -08, -09, -11, -12, -14, and -15, did not meet the method required minimum response factor on the lowest calibration standard for 1,4-dioxane (0.0020), as well as the average response factor for 1,4-dioxane.

The continuing calibration standards, associated with L1704816-01 through -04, -06, -08, -09, -11, -12, -14, and -15, are outside the acceptance criteria for several compounds; however, they are within overall method allowances. Copies of the continuing calibration standards are included as an addendum to this report.

#### Semivolatile Organics

L1704816-08: The sample has elevated detection limits due to the dilution required by the sample matrix.

#### VPH

In reference to question I:

All samples were analyzed for a subset of MCP analytes per the Chain of Custody.

#### Pesticides

A copy of the Degradation Standards for 4,4'-DDT and Endrin breakdown products is included as an addendum.

**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704816  
**Report Date:** 02/20/17

### Case Narrative (continued)

In reference to question G:

One or more of the target analytes did not achieve the requested CAM reporting limits.

Metals

In reference to question I:

All samples were analyzed for a subset of MCP analytes per the Chain of Custody.

Non-MCP Related Narratives

Specific Conductance @ 25 C

The WG978308-2 Laboratory Duplicate RPD (34%), performed on L1704816-01, is outside the acceptance criteria. The elevated RPD has been attributed to the non-homogeneous nature of the native sample.

The WG978309-2 Laboratory Duplicate RPD (43%), performed on L1704816-15, is outside the acceptance criteria. The elevated RPD has been attributed to the non-homogeneous nature of the native sample.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature:

 Kelly Stenstrom

Title: Technical Director/Representative

Date: 02/20/17

# ORGANICS

# VOLATILES



**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704816  
**Report Date:** 02/20/17

**SAMPLE RESULTS**

Lab ID: L1704816-01  
Client ID: VES-113 (2-4)  
Sample Location: E. BOSTON  
Matrix: Soil  
Analytical Method: 97,8260C  
Analytical Date: 02/17/17 01:06  
Analyst: JC  
Percent Solids: 83%

Date Collected: 02/15/17 14:25  
Date Received: 02/15/17  
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics by 8260/5035 - Westborough Lab</b>						
Methylene chloride	ND	ug/kg	9.3	--	--	1
1,1-Dichloroethane	ND	ug/kg	1.4	--	--	1
Chloroform	ND	ug/kg	1.4	--	--	1
Carbon tetrachloride	ND	ug/kg	0.93	--	--	1
1,2-Dichloropropane	ND	ug/kg	3.2	--	--	1
Dibromochloromethane	ND	ug/kg	0.93	--	--	1
1,1,2-Trichloroethane	ND	ug/kg	1.4	--	--	1
Tetrachloroethene	ND	ug/kg	0.93	--	--	1
Chlorobenzene	ND	ug/kg	0.93	--	--	1
Trichlorofluoromethane	ND	ug/kg	3.7	--	--	1
1,2-Dichloroethane	ND	ug/kg	0.93	--	--	1
1,1,1-Trichloroethane	ND	ug/kg	0.93	--	--	1
Bromodichloromethane	ND	ug/kg	0.93	--	--	1
trans-1,3-Dichloropropene	ND	ug/kg	0.93	--	--	1
cis-1,3-Dichloropropene	ND	ug/kg	0.93	--	--	1
1,3-Dichloropropene, Total	ND	ug/kg	0.93	--	--	1
1,1-Dichloropropene	ND	ug/kg	3.7	--	--	1
Bromoform	ND	ug/kg	3.7	--	--	1
1,1,2,2-Tetrachloroethane	ND	ug/kg	0.93	--	--	1
Benzene	ND	ug/kg	0.93	--	--	1
Toluene	ND	ug/kg	1.4	--	--	1
Ethylbenzene	ND	ug/kg	0.93	--	--	1
Chloromethane	ND	ug/kg	3.7	--	--	1
Bromomethane	ND	ug/kg	1.8	--	--	1
Vinyl chloride	ND	ug/kg	1.8	--	--	1
Chloroethane	ND	ug/kg	1.8	--	--	1
1,1-Dichloroethene	ND	ug/kg	0.93	--	--	1
trans-1,2-Dichloroethene	ND	ug/kg	1.4	--	--	1
Trichloroethene	ND	ug/kg	0.93	--	--	1
1,2-Dichlorobenzene	ND	ug/kg	3.7	--	--	1



Project Name: E. BOSTON

Lab Number: L1704816

Project Number: 43068

Report Date: 02/20/17

**SAMPLE RESULTS**

Lab ID:	L1704816-01	Date Collected:	02/15/17 14:25		
Client ID:	VES-113 (2-4)	Date Received:	02/15/17		
Sample Location:	E. BOSTON	Field Prep:	Not Specified		
Parameter	Result	Qualifier	Units	RL	MDL
<b>MCP Volatile Organics by 8260/5035 - Westborough Lab</b>					
1,3-Dichlorobenzene	ND	ug/kg	3.7	--	1
1,4-Dichlorobenzene	ND	ug/kg	3.7	--	1
Methyl tert butyl ether	ND	ug/kg	1.8	--	1
p/m-Xylene	ND	ug/kg	1.8	--	1
o-Xylene	ND	ug/kg	1.8	--	1
Xylenes, Total	ND	ug/kg	1.8	--	1
cis-1,2-Dichloroethene	ND	ug/kg	0.93	--	1
1,2-Dichloroethene, Total	ND	ug/kg	0.93	--	1
Dibromomethane	ND	ug/kg	3.7	--	1
1,2,3-Trichloropropane	ND	ug/kg	3.7	--	1
Styrene	ND	ug/kg	1.8	--	1
Dichlorodifluoromethane	ND	ug/kg	9.3	--	1
Acetone	41	ug/kg	33	--	1
Carbon disulfide	ND	ug/kg	3.7	--	1
Methyl ethyl ketone	ND	ug/kg	9.3	--	1
Methyl isobutyl ketone	ND	ug/kg	9.3	--	1
2-Hexanone	ND	ug/kg	9.3	--	1
Bromochloromethane	ND	ug/kg	3.7	--	1
Tetrahydrofuran	ND	ug/kg	3.7	--	1
2,2-Dichloropropane	ND	ug/kg	4.6	--	1
1,2-Dibromoethane	ND	ug/kg	3.7	--	1
1,3-Dichloropropane	ND	ug/kg	3.7	--	1
1,1,1,2-Tetrachloroethane	ND	ug/kg	0.93	--	1
Bromobenzene	ND	ug/kg	4.6	--	1
n-Butylbenzene	ND	ug/kg	0.93	--	1
sec-Butylbenzene	ND	ug/kg	0.93	--	1
tert-Butylbenzene	ND	ug/kg	3.7	--	1
o-Chlorotoluene	ND	ug/kg	3.7	--	1
p-Chlorotoluene	ND	ug/kg	3.7	--	1
1,2-Dibromo-3-chloropropane	ND	ug/kg	3.7	--	1
Hexachlorobutadiene	ND	ug/kg	3.7	--	1
Isopropylbenzene	ND	ug/kg	0.93	--	1
p-Isopropyltoluene	ND	ug/kg	0.93	--	1
Naphthalene	ND	ug/kg	3.7	--	1
n-Propylbenzene	ND	ug/kg	0.93	--	1
1,2,3-Trichlorobenzene	ND	ug/kg	3.7	--	1
1,2,4-Trichlorobenzene	ND	ug/kg	3.7	--	1
1,3,5-Trimethylbenzene	ND	ug/kg	3.7	--	1
1,2,4-Trimethylbenzene	ND	ug/kg	3.7	--	1



Project Name: E. BOSTON

Lab Number: L1704816

Project Number: 43068

Report Date: 02/20/17

**SAMPLE RESULTS**

Lab ID: L1704816-01  
 Client ID: VES-113 (2-4)  
 Sample Location: E. BOSTON

Date Collected: 02/15/17 14:25  
 Date Received: 02/15/17  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics by 8260/5035 - Westborough Lab						
Diethyl ether	ND		ug/kg	4.6	--	1
Diisopropyl Ether	ND		ug/kg	3.7	--	1
Ethyl-Tert-Butyl-Ether	ND		ug/kg	3.7	--	1
Tertiary-Amyl Methyl Ether	ND		ug/kg	3.7	--	1
1,4-Dioxane	ND		ug/kg	37	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	110		70-130
Toluene-d8	100		70-130
4-Bromofluorobenzene	115		70-130
Dibromofluoromethane	98		70-130

**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704816  
**Report Date:** 02/20/17

**SAMPLE RESULTS**

Lab ID: L1704816-02  
Client ID: VES-117 (2-4)  
Sample Location: E. BOSTON  
Matrix: Soil  
Analytical Method: 97,8260C  
Analytical Date: 02/17/17 01:31  
Analyst: JC  
Percent Solids: 73%

Date Collected: 02/15/17 14:00  
Date Received: 02/15/17  
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics by 8260/5035 - Westborough Lab</b>						
Methylene chloride	ND	ug/kg	13	--	--	1
1,1-Dichloroethane	ND	ug/kg	1.9	--	--	1
Chloroform	ND	ug/kg	1.9	--	--	1
Carbon tetrachloride	ND	ug/kg	1.3	--	--	1
1,2-Dichloropropane	ND	ug/kg	4.5	--	--	1
Dibromochloromethane	ND	ug/kg	1.3	--	--	1
1,1,2-Trichloroethane	ND	ug/kg	1.9	--	--	1
Tetrachloroethene	ND	ug/kg	1.3	--	--	1
Chlorobenzene	ND	ug/kg	1.3	--	--	1
Trichlorofluoromethane	ND	ug/kg	5.1	--	--	1
1,2-Dichloroethane	ND	ug/kg	1.3	--	--	1
1,1,1-Trichloroethane	ND	ug/kg	1.3	--	--	1
Bromodichloromethane	ND	ug/kg	1.3	--	--	1
trans-1,3-Dichloropropene	ND	ug/kg	1.3	--	--	1
cis-1,3-Dichloropropene	ND	ug/kg	1.3	--	--	1
1,3-Dichloropropene, Total	ND	ug/kg	1.3	--	--	1
1,1-Dichloropropene	ND	ug/kg	5.1	--	--	1
Bromoform	ND	ug/kg	5.1	--	--	1
1,1,2,2-Tetrachloroethane	ND	ug/kg	1.3	--	--	1
Benzene	ND	ug/kg	1.3	--	--	1
Toluene	ND	ug/kg	1.9	--	--	1
Ethylbenzene	ND	ug/kg	1.3	--	--	1
Chloromethane	ND	ug/kg	5.1	--	--	1
Bromomethane	ND	ug/kg	2.6	--	--	1
Vinyl chloride	ND	ug/kg	2.6	--	--	1
Chloroethane	ND	ug/kg	2.6	--	--	1
1,1-Dichloroethene	ND	ug/kg	1.3	--	--	1
trans-1,2-Dichloroethene	ND	ug/kg	1.9	--	--	1
Trichloroethene	ND	ug/kg	1.3	--	--	1
1,2-Dichlorobenzene	ND	ug/kg	5.1	--	--	1



**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704816  
**Report Date:** 02/20/17

**SAMPLE RESULTS**

Lab ID:	L1704816-02	Date Collected:	02/15/17 14:00		
Client ID:	VES-117 (2-4)	Date Received:	02/15/17		
Sample Location:	E. BOSTON	Field Prep:	Not Specified		
Parameter	Result	Qualifier	Units	RL	MDL
<b>MCP Volatile Organics by 8260/5035 - Westborough Lab</b>					
1,3-Dichlorobenzene	ND	ug/kg	5.1	--	1
1,4-Dichlorobenzene	ND	ug/kg	5.1	--	1
Methyl tert butyl ether	ND	ug/kg	2.6	--	1
p/m-Xylene	ND	ug/kg	2.6	--	1
o-Xylene	ND	ug/kg	2.6	--	1
Xylenes, Total	ND	ug/kg	2.6	--	1
cis-1,2-Dichloroethene	ND	ug/kg	1.3	--	1
1,2-Dichloroethene, Total	ND	ug/kg	1.3	--	1
Dibromomethane	ND	ug/kg	5.1	--	1
1,2,3-Trichloropropane	ND	ug/kg	5.1	--	1
Styrene	ND	ug/kg	2.6	--	1
Dichlorodifluoromethane	ND	ug/kg	13	--	1
Acetone	160	ug/kg	46	--	1
Carbon disulfide	ND	ug/kg	5.1	--	1
Methyl ethyl ketone	40	ug/kg	13	--	1
Methyl isobutyl ketone	ND	ug/kg	13	--	1
2-Hexanone	ND	ug/kg	13	--	1
Bromochloromethane	ND	ug/kg	5.1	--	1
Tetrahydrofuran	ND	ug/kg	5.1	--	1
2,2-Dichloropropane	ND	ug/kg	6.4	--	1
1,2-Dibromoethane	ND	ug/kg	5.1	--	1
1,3-Dichloropropane	ND	ug/kg	5.1	--	1
1,1,1,2-Tetrachloroethane	ND	ug/kg	1.3	--	1
Bromobenzene	ND	ug/kg	6.4	--	1
n-Butylbenzene	ND	ug/kg	1.3	--	1
sec-Butylbenzene	ND	ug/kg	1.3	--	1
tert-Butylbenzene	ND	ug/kg	5.1	--	1
o-Chlorotoluene	ND	ug/kg	5.1	--	1
p-Chlorotoluene	ND	ug/kg	5.1	--	1
1,2-Dibromo-3-chloropropane	ND	ug/kg	5.1	--	1
Hexachlorobutadiene	ND	ug/kg	5.1	--	1
Isopropylbenzene	ND	ug/kg	1.3	--	1
p-Isopropyltoluene	ND	ug/kg	1.3	--	1
Naphthalene	ND	ug/kg	5.1	--	1
n-Propylbenzene	ND	ug/kg	1.3	--	1
1,2,3-Trichlorobenzene	ND	ug/kg	5.1	--	1
1,2,4-Trichlorobenzene	ND	ug/kg	5.1	--	1
1,3,5-Trimethylbenzene	ND	ug/kg	5.1	--	1
1,2,4-Trimethylbenzene	ND	ug/kg	5.1	--	1



Project Name: E. BOSTON

Lab Number: L1704816

Project Number: 43068

Report Date: 02/20/17

**SAMPLE RESULTS**

Lab ID: L1704816-02  
 Client ID: VES-117 (2-4)  
 Sample Location: E. BOSTON

Date Collected: 02/15/17 14:00  
 Date Received: 02/15/17  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics by 8260/5035 - Westborough Lab						
Diethyl ether	ND	ug/kg	6.4	--	--	1
Diisopropyl Ether	ND	ug/kg	5.1	--	--	1
Ethyl-Tert-Butyl-Ether	ND	ug/kg	5.1	--	--	1
Tertiary-Amyl Methyl Ether	ND	ug/kg	5.1	--	--	1
1,4-Dioxane	ND	ug/kg	51	--	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	112		70-130
Toluene-d8	101		70-130
4-Bromofluorobenzene	120		70-130
Dibromofluoromethane	102		70-130

**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704816  
**Report Date:** 02/20/17

**SAMPLE RESULTS**

Lab ID: L1704816-03  
Client ID: VES-122 (3-5)  
Sample Location: E. BOSTON  
Matrix: Soil  
Analytical Method: 97,8260C  
Analytical Date: 02/17/17 01:57  
Analyst: JC  
Percent Solids: 77%

Date Collected: 02/15/17 13:30  
Date Received: 02/15/17  
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics by 8260/5035 - Westborough Lab</b>						
Methylene chloride	ND	ug/kg	10	--	--	1
1,1-Dichloroethane	ND	ug/kg	1.5	--	--	1
Chloroform	ND	ug/kg	1.5	--	--	1
Carbon tetrachloride	ND	ug/kg	1.0	--	--	1
1,2-Dichloropropane	ND	ug/kg	3.5	--	--	1
Dibromochloromethane	ND	ug/kg	1.0	--	--	1
1,1,2-Trichloroethane	ND	ug/kg	1.5	--	--	1
Tetrachloroethene	ND	ug/kg	1.0	--	--	1
Chlorobenzene	ND	ug/kg	1.0	--	--	1
Trichlorofluoromethane	ND	ug/kg	4.0	--	--	1
1,2-Dichloroethane	ND	ug/kg	1.0	--	--	1
1,1,1-Trichloroethane	ND	ug/kg	1.0	--	--	1
Bromodichloromethane	ND	ug/kg	1.0	--	--	1
trans-1,3-Dichloropropene	ND	ug/kg	1.0	--	--	1
cis-1,3-Dichloropropene	ND	ug/kg	1.0	--	--	1
1,3-Dichloropropene, Total	ND	ug/kg	1.0	--	--	1
1,1-Dichloropropene	ND	ug/kg	4.0	--	--	1
Bromoform	ND	ug/kg	4.0	--	--	1
1,1,2,2-Tetrachloroethane	ND	ug/kg	1.0	--	--	1
Benzene	ND	ug/kg	1.0	--	--	1
Toluene	ND	ug/kg	1.5	--	--	1
Ethylbenzene	ND	ug/kg	1.0	--	--	1
Chloromethane	ND	ug/kg	4.0	--	--	1
Bromomethane	ND	ug/kg	2.0	--	--	1
Vinyl chloride	ND	ug/kg	2.0	--	--	1
Chloroethane	ND	ug/kg	2.0	--	--	1
1,1-Dichloroethene	ND	ug/kg	1.0	--	--	1
trans-1,2-Dichloroethene	ND	ug/kg	1.5	--	--	1
Trichloroethene	ND	ug/kg	1.0	--	--	1
1,2-Dichlorobenzene	ND	ug/kg	4.0	--	--	1



Project Name: E. BOSTON

Lab Number: L1704816

Project Number: 43068

Report Date: 02/20/17

**SAMPLE RESULTS**

Lab ID:	L1704816-03	Date Collected:	02/15/17 13:30		
Client ID:	VES-122 (3-5)	Date Received:	02/15/17		
Sample Location:	E. BOSTON	Field Prep:	Not Specified		
Parameter	Result	Qualifier	Units	RL	MDL
<b>MCP Volatile Organics by 8260/5035 - Westborough Lab</b>					
1,3-Dichlorobenzene	ND	ug/kg	4.0	--	1
1,4-Dichlorobenzene	ND	ug/kg	4.0	--	1
Methyl tert butyl ether	ND	ug/kg	2.0	--	1
p/m-Xylene	ND	ug/kg	2.0	--	1
o-Xylene	ND	ug/kg	2.0	--	1
Xylenes, Total	ND	ug/kg	2.0	--	1
cis-1,2-Dichloroethene	ND	ug/kg	1.0	--	1
1,2-Dichloroethene, Total	ND	ug/kg	1.0	--	1
Dibromomethane	ND	ug/kg	4.0	--	1
1,2,3-Trichloropropane	ND	ug/kg	4.0	--	1
Styrene	ND	ug/kg	2.0	--	1
Dichlorodifluoromethane	ND	ug/kg	10	--	1
Acetone	ND	ug/kg	36	--	1
Carbon disulfide	ND	ug/kg	4.0	--	1
Methyl ethyl ketone	ND	ug/kg	10	--	1
Methyl isobutyl ketone	ND	ug/kg	10	--	1
2-Hexanone	ND	ug/kg	10	--	1
Bromochloromethane	ND	ug/kg	4.0	--	1
Tetrahydrofuran	ND	ug/kg	4.0	--	1
2,2-Dichloropropane	ND	ug/kg	5.0	--	1
1,2-Dibromoethane	ND	ug/kg	4.0	--	1
1,3-Dichloropropane	ND	ug/kg	4.0	--	1
1,1,1,2-Tetrachloroethane	ND	ug/kg	1.0	--	1
Bromobenzene	ND	ug/kg	5.0	--	1
n-Butylbenzene	ND	ug/kg	1.0	--	1
sec-Butylbenzene	ND	ug/kg	1.0	--	1
tert-Butylbenzene	ND	ug/kg	4.0	--	1
o-Chlorotoluene	ND	ug/kg	4.0	--	1
p-Chlorotoluene	ND	ug/kg	4.0	--	1
1,2-Dibromo-3-chloropropane	ND	ug/kg	4.0	--	1
Hexachlorobutadiene	ND	ug/kg	4.0	--	1
Isopropylbenzene	ND	ug/kg	1.0	--	1
p-Isopropyltoluene	ND	ug/kg	1.0	--	1
Naphthalene	ND	ug/kg	4.0	--	1
n-Propylbenzene	ND	ug/kg	1.0	--	1
1,2,3-Trichlorobenzene	ND	ug/kg	4.0	--	1
1,2,4-Trichlorobenzene	ND	ug/kg	4.0	--	1
1,3,5-Trimethylbenzene	ND	ug/kg	4.0	--	1
1,2,4-Trimethylbenzene	ND	ug/kg	4.0	--	1



Project Name: E. BOSTON

Lab Number: L1704816

Project Number: 43068

Report Date: 02/20/17

**SAMPLE RESULTS**

Lab ID: L1704816-03  
 Client ID: VES-122 (3-5)  
 Sample Location: E. BOSTON

Date Collected: 02/15/17 13:30  
 Date Received: 02/15/17  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics by 8260/5035 - Westborough Lab						
Diethyl ether	ND		ug/kg	5.0	--	1
Diisopropyl Ether	ND		ug/kg	4.0	--	1
Ethyl-Tert-Butyl-Ether	ND		ug/kg	4.0	--	1
Tertiary-Amyl Methyl Ether	ND		ug/kg	4.0	--	1
1,4-Dioxane	ND		ug/kg	40	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	113		70-130
Toluene-d8	103		70-130
4-Bromofluorobenzene	120		70-130
Dibromofluoromethane	103		70-130

**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704816  
**Report Date:** 02/20/17

**SAMPLE RESULTS**

Lab ID: L1704816-04  
Client ID: VES-126 (3-5)  
Sample Location: E. BOSTON  
Matrix: Soil  
Analytical Method: 97,8260C  
Analytical Date: 02/17/17 02:22  
Analyst: JC  
Percent Solids: 76%

Date Collected: 02/15/17 12:55  
Date Received: 02/15/17  
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics by 8260/5035 - Westborough Lab</b>						
Methylene chloride	ND	ug/kg	13	--	--	1
1,1-Dichloroethane	ND	ug/kg	1.9	--	--	1
Chloroform	ND	ug/kg	1.9	--	--	1
Carbon tetrachloride	ND	ug/kg	1.3	--	--	1
1,2-Dichloropropane	ND	ug/kg	4.4	--	--	1
Dibromochloromethane	ND	ug/kg	1.3	--	--	1
1,1,2-Trichloroethane	ND	ug/kg	1.9	--	--	1
Tetrachloroethene	ND	ug/kg	1.3	--	--	1
Chlorobenzene	ND	ug/kg	1.3	--	--	1
Trichlorofluoromethane	ND	ug/kg	5.1	--	--	1
1,2-Dichloroethane	ND	ug/kg	1.3	--	--	1
1,1,1-Trichloroethane	ND	ug/kg	1.3	--	--	1
Bromodichloromethane	ND	ug/kg	1.3	--	--	1
trans-1,3-Dichloropropene	ND	ug/kg	1.3	--	--	1
cis-1,3-Dichloropropene	ND	ug/kg	1.3	--	--	1
1,3-Dichloropropene, Total	ND	ug/kg	1.3	--	--	1
1,1-Dichloropropene	ND	ug/kg	5.1	--	--	1
Bromoform	ND	ug/kg	5.1	--	--	1
1,1,2,2-Tetrachloroethane	ND	ug/kg	1.3	--	--	1
Benzene	ND	ug/kg	1.3	--	--	1
Toluene	ND	ug/kg	1.9	--	--	1
Ethylbenzene	ND	ug/kg	1.3	--	--	1
Chloromethane	ND	ug/kg	5.1	--	--	1
Bromomethane	ND	ug/kg	2.5	--	--	1
Vinyl chloride	ND	ug/kg	2.5	--	--	1
Chloroethane	ND	ug/kg	2.5	--	--	1
1,1-Dichloroethene	ND	ug/kg	1.3	--	--	1
trans-1,2-Dichloroethene	ND	ug/kg	1.9	--	--	1
Trichloroethene	ND	ug/kg	1.3	--	--	1
1,2-Dichlorobenzene	ND	ug/kg	5.1	--	--	1



Project Name: E. BOSTON

Lab Number: L1704816

Project Number: 43068

Report Date: 02/20/17

**SAMPLE RESULTS**

Lab ID:	L1704816-04	Date Collected:	02/15/17 12:55		
Client ID:	VES-126 (3-5)	Date Received:	02/15/17		
Sample Location:	E. BOSTON	Field Prep:	Not Specified		
Parameter	Result	Qualifier	Units	RL	MDL
<b>MCP Volatile Organics by 8260/5035 - Westborough Lab</b>					
1,3-Dichlorobenzene	ND	ug/kg	5.1	--	1
1,4-Dichlorobenzene	ND	ug/kg	5.1	--	1
Methyl tert butyl ether	ND	ug/kg	2.5	--	1
p/m-Xylene	ND	ug/kg	2.5	--	1
o-Xylene	ND	ug/kg	2.5	--	1
Xylenes, Total	ND	ug/kg	2.5	--	1
cis-1,2-Dichloroethene	ND	ug/kg	1.3	--	1
1,2-Dichloroethene, Total	ND	ug/kg	1.3	--	1
Dibromomethane	ND	ug/kg	5.1	--	1
1,2,3-Trichloropropane	ND	ug/kg	5.1	--	1
Styrene	ND	ug/kg	2.5	--	1
Dichlorodifluoromethane	ND	ug/kg	13	--	1
Acetone	ND	ug/kg	46	--	1
Carbon disulfide	ND	ug/kg	5.1	--	1
Methyl ethyl ketone	ND	ug/kg	13	--	1
Methyl isobutyl ketone	ND	ug/kg	13	--	1
2-Hexanone	ND	ug/kg	13	--	1
Bromochloromethane	ND	ug/kg	5.1	--	1
Tetrahydrofuran	ND	ug/kg	5.1	--	1
2,2-Dichloropropane	ND	ug/kg	6.4	--	1
1,2-Dibromoethane	ND	ug/kg	5.1	--	1
1,3-Dichloropropane	ND	ug/kg	5.1	--	1
1,1,1,2-Tetrachloroethane	ND	ug/kg	1.3	--	1
Bromobenzene	ND	ug/kg	6.4	--	1
n-Butylbenzene	ND	ug/kg	1.3	--	1
sec-Butylbenzene	ND	ug/kg	1.3	--	1
tert-Butylbenzene	ND	ug/kg	5.1	--	1
o-Chlorotoluene	ND	ug/kg	5.1	--	1
p-Chlorotoluene	ND	ug/kg	5.1	--	1
1,2-Dibromo-3-chloropropane	ND	ug/kg	5.1	--	1
Hexachlorobutadiene	ND	ug/kg	5.1	--	1
Isopropylbenzene	ND	ug/kg	1.3	--	1
p-Isopropyltoluene	ND	ug/kg	1.3	--	1
Naphthalene	ND	ug/kg	5.1	--	1
n-Propylbenzene	ND	ug/kg	1.3	--	1
1,2,3-Trichlorobenzene	ND	ug/kg	5.1	--	1
1,2,4-Trichlorobenzene	ND	ug/kg	5.1	--	1
1,3,5-Trimethylbenzene	ND	ug/kg	5.1	--	1
1,2,4-Trimethylbenzene	ND	ug/kg	5.1	--	1



Project Name: E. BOSTON

Lab Number: L1704816

Project Number: 43068

Report Date: 02/20/17

**SAMPLE RESULTS**

Lab ID: L1704816-04  
 Client ID: VES-126 (3-5)  
 Sample Location: E. BOSTON

Date Collected: 02/15/17 12:55  
 Date Received: 02/15/17  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics by 8260/5035 - Westborough Lab						
Diethyl ether	ND	ug/kg	6.4	--	--	1
Diisopropyl Ether	ND	ug/kg	5.1	--	--	1
Ethyl-Tert-Butyl-Ether	ND	ug/kg	5.1	--	--	1
Tertiary-Amyl Methyl Ether	ND	ug/kg	5.1	--	--	1
1,4-Dioxane	ND	ug/kg	51	--	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	109		70-130
Toluene-d8	101		70-130
4-Bromofluorobenzene	115		70-130
Dibromofluoromethane	100		70-130

**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704816  
**Report Date:** 02/20/17

**SAMPLE RESULTS**

Lab ID: L1704816-06  
Client ID: VES-114 (2-4)  
Sample Location: E. BOSTON  
Matrix: Soil  
Analytical Method: 97,8260C  
Analytical Date: 02/17/17 02:48  
Analyst: JC  
Percent Solids: 71%

Date Collected: 02/15/17 11:05  
Date Received: 02/15/17  
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics by 8260/5035 - Westborough Lab</b>						
Methylene chloride	ND	ug/kg	10	--	--	1
1,1-Dichloroethane	ND	ug/kg	1.5	--	--	1
Chloroform	ND	ug/kg	1.5	--	--	1
Carbon tetrachloride	ND	ug/kg	1.0	--	--	1
1,2-Dichloropropane	ND	ug/kg	3.5	--	--	1
Dibromochloromethane	ND	ug/kg	1.0	--	--	1
1,1,2-Trichloroethane	ND	ug/kg	1.5	--	--	1
Tetrachloroethene	ND	ug/kg	1.0	--	--	1
Chlorobenzene	ND	ug/kg	1.0	--	--	1
Trichlorofluoromethane	ND	ug/kg	4.0	--	--	1
1,2-Dichloroethane	ND	ug/kg	1.0	--	--	1
1,1,1-Trichloroethane	ND	ug/kg	1.0	--	--	1
Bromodichloromethane	ND	ug/kg	1.0	--	--	1
trans-1,3-Dichloropropene	ND	ug/kg	1.0	--	--	1
cis-1,3-Dichloropropene	ND	ug/kg	1.0	--	--	1
1,3-Dichloropropene, Total	ND	ug/kg	1.0	--	--	1
1,1-Dichloropropene	ND	ug/kg	4.0	--	--	1
Bromoform	ND	ug/kg	4.0	--	--	1
1,1,2,2-Tetrachloroethane	ND	ug/kg	1.0	--	--	1
Benzene	ND	ug/kg	1.0	--	--	1
Toluene	ND	ug/kg	1.5	--	--	1
Ethylbenzene	ND	ug/kg	1.0	--	--	1
Chloromethane	ND	ug/kg	4.0	--	--	1
Bromomethane	ND	ug/kg	2.0	--	--	1
Vinyl chloride	ND	ug/kg	2.0	--	--	1
Chloroethane	ND	ug/kg	2.0	--	--	1
1,1-Dichloroethene	ND	ug/kg	1.0	--	--	1
trans-1,2-Dichloroethene	ND	ug/kg	1.5	--	--	1
Trichloroethene	ND	ug/kg	1.0	--	--	1
1,2-Dichlorobenzene	ND	ug/kg	4.0	--	--	1



**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704816  
**Report Date:** 02/20/17

**SAMPLE RESULTS**

Lab ID:	L1704816-06	Date Collected:	02/15/17 11:05		
Client ID:	VES-114 (2-4)	Date Received:	02/15/17		
Sample Location:	E. BOSTON	Field Prep:	Not Specified		
Parameter	Result	Qualifier	Units	RL	MDL
<b>MCP Volatile Organics by 8260/5035 - Westborough Lab</b>					
1,3-Dichlorobenzene	ND	ug/kg	4.0	--	1
1,4-Dichlorobenzene	ND	ug/kg	4.0	--	1
Methyl tert butyl ether	ND	ug/kg	2.0	--	1
p/m-Xylene	ND	ug/kg	2.0	--	1
o-Xylene	ND	ug/kg	2.0	--	1
Xylenes, Total	ND	ug/kg	2.0	--	1
cis-1,2-Dichloroethene	ND	ug/kg	1.0	--	1
1,2-Dichloroethene, Total	ND	ug/kg	1.0	--	1
Dibromomethane	ND	ug/kg	4.0	--	1
1,2,3-Trichloropropane	ND	ug/kg	4.0	--	1
Styrene	ND	ug/kg	2.0	--	1
Dichlorodifluoromethane	ND	ug/kg	10	--	1
Acetone	ND	ug/kg	36	--	1
Carbon disulfide	ND	ug/kg	4.0	--	1
Methyl ethyl ketone	ND	ug/kg	10	--	1
Methyl isobutyl ketone	ND	ug/kg	10	--	1
2-Hexanone	ND	ug/kg	10	--	1
Bromochloromethane	ND	ug/kg	4.0	--	1
Tetrahydrofuran	ND	ug/kg	4.0	--	1
2,2-Dichloropropane	ND	ug/kg	5.0	--	1
1,2-Dibromoethane	ND	ug/kg	4.0	--	1
1,3-Dichloropropane	ND	ug/kg	4.0	--	1
1,1,1,2-Tetrachloroethane	ND	ug/kg	1.0	--	1
Bromobenzene	ND	ug/kg	5.0	--	1
n-Butylbenzene	ND	ug/kg	1.0	--	1
sec-Butylbenzene	ND	ug/kg	1.0	--	1
tert-Butylbenzene	ND	ug/kg	4.0	--	1
o-Chlorotoluene	ND	ug/kg	4.0	--	1
p-Chlorotoluene	ND	ug/kg	4.0	--	1
1,2-Dibromo-3-chloropropane	ND	ug/kg	4.0	--	1
Hexachlorobutadiene	ND	ug/kg	4.0	--	1
Isopropylbenzene	ND	ug/kg	1.0	--	1
p-Isopropyltoluene	ND	ug/kg	1.0	--	1
Naphthalene	ND	ug/kg	4.0	--	1
n-Propylbenzene	ND	ug/kg	1.0	--	1
1,2,3-Trichlorobenzene	ND	ug/kg	4.0	--	1
1,2,4-Trichlorobenzene	ND	ug/kg	4.0	--	1
1,3,5-Trimethylbenzene	ND	ug/kg	4.0	--	1
1,2,4-Trimethylbenzene	ND	ug/kg	4.0	--	1



Project Name: E. BOSTON

Lab Number: L1704816

Project Number: 43068

Report Date: 02/20/17

**SAMPLE RESULTS**

Lab ID: L1704816-06  
 Client ID: VES-114 (2-4)  
 Sample Location: E. BOSTON

Date Collected: 02/15/17 11:05  
 Date Received: 02/15/17  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics by 8260/5035 - Westborough Lab						
Diethyl ether	ND		ug/kg	5.0	--	1
Diisopropyl Ether	ND		ug/kg	4.0	--	1
Ethyl-Tert-Butyl-Ether	ND		ug/kg	4.0	--	1
Tertiary-Amyl Methyl Ether	ND		ug/kg	4.0	--	1
1,4-Dioxane	ND		ug/kg	40	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	110		70-130
Toluene-d8	102		70-130
4-Bromofluorobenzene	113		70-130
Dibromofluoromethane	101		70-130

**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704816  
**Report Date:** 02/20/17

**SAMPLE RESULTS**

Lab ID: L1704816-08  
Client ID: VES-115 (2-4)  
Sample Location: E. BOSTON  
Matrix: Soil  
Analytical Method: 97,8260C  
Analytical Date: 02/17/17 03:14  
Analyst: JC  
Percent Solids: 65%

Date Collected: 02/15/17 10:35  
Date Received: 02/15/17  
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics by 8260/5035 - Westborough Lab</b>						
Methylene chloride	ND	ug/kg	9.7	--	--	1
1,1-Dichloroethane	ND	ug/kg	1.5	--	--	1
Chloroform	ND	ug/kg	1.5	--	--	1
Carbon tetrachloride	ND	ug/kg	0.97	--	--	1
1,2-Dichloropropane	ND	ug/kg	3.4	--	--	1
Dibromochloromethane	ND	ug/kg	0.97	--	--	1
1,1,2-Trichloroethane	ND	ug/kg	1.5	--	--	1
Tetrachloroethene	ND	ug/kg	0.97	--	--	1
Chlorobenzene	ND	ug/kg	0.97	--	--	1
Trichlorofluoromethane	ND	ug/kg	3.9	--	--	1
1,2-Dichloroethane	ND	ug/kg	0.97	--	--	1
1,1,1-Trichloroethane	ND	ug/kg	0.97	--	--	1
Bromodichloromethane	ND	ug/kg	0.97	--	--	1
trans-1,3-Dichloropropene	ND	ug/kg	0.97	--	--	1
cis-1,3-Dichloropropene	ND	ug/kg	0.97	--	--	1
1,3-Dichloropropene, Total	ND	ug/kg	0.97	--	--	1
1,1-Dichloropropene	ND	ug/kg	3.9	--	--	1
Bromoform	ND	ug/kg	3.9	--	--	1
1,1,2,2-Tetrachloroethane	ND	ug/kg	0.97	--	--	1
Benzene	ND	ug/kg	0.97	--	--	1
Toluene	ND	ug/kg	1.5	--	--	1
Ethylbenzene	ND	ug/kg	0.97	--	--	1
Chloromethane	ND	ug/kg	3.9	--	--	1
Bromomethane	ND	ug/kg	1.9	--	--	1
Vinyl chloride	ND	ug/kg	1.9	--	--	1
Chloroethane	ND	ug/kg	1.9	--	--	1
1,1-Dichloroethene	ND	ug/kg	0.97	--	--	1
trans-1,2-Dichloroethene	ND	ug/kg	1.5	--	--	1
Trichloroethene	ND	ug/kg	0.97	--	--	1
1,2-Dichlorobenzene	ND	ug/kg	3.9	--	--	1



**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704816  
**Report Date:** 02/20/17

**SAMPLE RESULTS**

Lab ID:	L1704816-08	Date Collected:	02/15/17 10:35			
Client ID:	VES-115 (2-4)	Date Received:	02/15/17			
Sample Location:	E. BOSTON	Field Prep:	Not Specified			
Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics by 8260/5035 - Westborough Lab</b>						
1,3-Dichlorobenzene	ND	ug/kg	3.9	--	1	
1,4-Dichlorobenzene	ND	ug/kg	3.9	--	1	
Methyl tert butyl ether	ND	ug/kg	1.9	--	1	
p/m-Xylene	ND	ug/kg	1.9	--	1	
o-Xylene	ND	ug/kg	1.9	--	1	
Xylenes, Total	ND	ug/kg	1.9	--	1	
cis-1,2-Dichloroethene	ND	ug/kg	0.97	--	1	
1,2-Dichloroethene, Total	ND	ug/kg	0.97	--	1	
Dibromomethane	ND	ug/kg	3.9	--	1	
1,2,3-Trichloropropane	ND	ug/kg	3.9	--	1	
Styrene	ND	ug/kg	1.9	--	1	
Dichlorodifluoromethane	ND	ug/kg	9.7	--	1	
Acetone	ND	ug/kg	35	--	1	
Carbon disulfide	ND	ug/kg	3.9	--	1	
Methyl ethyl ketone	ND	ug/kg	9.7	--	1	
Methyl isobutyl ketone	ND	ug/kg	9.7	--	1	
2-Hexanone	ND	ug/kg	9.7	--	1	
Bromochloromethane	ND	ug/kg	3.9	--	1	
Tetrahydrofuran	ND	ug/kg	3.9	--	1	
2,2-Dichloropropane	ND	ug/kg	4.9	--	1	
1,2-Dibromoethane	ND	ug/kg	3.9	--	1	
1,3-Dichloropropane	ND	ug/kg	3.9	--	1	
1,1,1,2-Tetrachloroethane	ND	ug/kg	0.97	--	1	
Bromobenzene	ND	ug/kg	4.9	--	1	
n-Butylbenzene	ND	ug/kg	0.97	--	1	
sec-Butylbenzene	ND	ug/kg	0.97	--	1	
tert-Butylbenzene	ND	ug/kg	3.9	--	1	
o-Chlorotoluene	ND	ug/kg	3.9	--	1	
p-Chlorotoluene	ND	ug/kg	3.9	--	1	
1,2-Dibromo-3-chloropropane	ND	ug/kg	3.9	--	1	
Hexachlorobutadiene	ND	ug/kg	3.9	--	1	
Isopropylbenzene	ND	ug/kg	0.97	--	1	
p-Isopropyltoluene	ND	ug/kg	0.97	--	1	
Naphthalene	ND	ug/kg	3.9	--	1	
n-Propylbenzene	ND	ug/kg	0.97	--	1	
1,2,3-Trichlorobenzene	ND	ug/kg	3.9	--	1	
1,2,4-Trichlorobenzene	ND	ug/kg	3.9	--	1	
1,3,5-Trimethylbenzene	ND	ug/kg	3.9	--	1	
1,2,4-Trimethylbenzene	ND	ug/kg	3.9	--	1	



Project Name: E. BOSTON

Lab Number: L1704816

Project Number: 43068

Report Date: 02/20/17

**SAMPLE RESULTS**

Lab ID: L1704816-08  
 Client ID: VES-115 (2-4)  
 Sample Location: E. BOSTON

Date Collected: 02/15/17 10:35  
 Date Received: 02/15/17  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics by 8260/5035 - Westborough Lab						
Diethyl ether	ND		ug/kg	4.9	--	1
Diisopropyl Ether	ND		ug/kg	3.9	--	1
Ethyl-Tert-Butyl-Ether	ND		ug/kg	3.9	--	1
Tertiary-Amyl Methyl Ether	ND		ug/kg	3.9	--	1
1,4-Dioxane	ND		ug/kg	39	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	112		70-130
Toluene-d8	100		70-130
4-Bromofluorobenzene	114		70-130
Dibromofluoromethane	101		70-130

Project Name: E. BOSTON

Lab Number: L1704816

Project Number: 43068

Report Date: 02/20/17

**SAMPLE RESULTS**

Lab ID: L1704816-09  
 Client ID: VES-118 (22-24)  
 Sample Location: E. BOSTON  
 Matrix: Soil  
 Analytical Method: 97,8260C  
 Analytical Date: 02/17/17 03:40  
 Analyst: JC  
 Percent Solids: 45%

Date Collected: 02/15/17 09:35  
 Date Received: 02/15/17  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics by 8260/5035 - Westborough Lab</b>						
Methylene chloride	ND	ug/kg	19	--	--	1
1,1-Dichloroethane	ND	ug/kg	2.8	--	--	1
Chloroform	ND	ug/kg	2.8	--	--	1
Carbon tetrachloride	ND	ug/kg	1.9	--	--	1
1,2-Dichloropropane	ND	ug/kg	6.7	--	--	1
Dibromochloromethane	ND	ug/kg	1.9	--	--	1
1,1,2-Trichloroethane	ND	ug/kg	2.8	--	--	1
Tetrachloroethene	ND	ug/kg	1.9	--	--	1
Chlorobenzene	ND	ug/kg	1.9	--	--	1
Trichlorofluoromethane	ND	ug/kg	7.6	--	--	1
1,2-Dichloroethane	ND	ug/kg	1.9	--	--	1
1,1,1-Trichloroethane	ND	ug/kg	1.9	--	--	1
Bromodichloromethane	ND	ug/kg	1.9	--	--	1
trans-1,3-Dichloropropene	ND	ug/kg	1.9	--	--	1
cis-1,3-Dichloropropene	ND	ug/kg	1.9	--	--	1
1,3-Dichloropropene, Total	ND	ug/kg	1.9	--	--	1
1,1-Dichloropropene	ND	ug/kg	7.6	--	--	1
Bromoform	ND	ug/kg	7.6	--	--	1
1,1,2,2-Tetrachloroethane	ND	ug/kg	1.9	--	--	1
Benzene	ND	ug/kg	1.9	--	--	1
Toluene	ND	ug/kg	2.8	--	--	1
Ethylbenzene	ND	ug/kg	1.9	--	--	1
Chloromethane	ND	ug/kg	7.6	--	--	1
Bromomethane	ND	ug/kg	3.8	--	--	1
Vinyl chloride	ND	ug/kg	3.8	--	--	1
Chloroethane	ND	ug/kg	3.8	--	--	1
1,1-Dichloroethene	ND	ug/kg	1.9	--	--	1
trans-1,2-Dichloroethene	ND	ug/kg	2.8	--	--	1
Trichloroethene	ND	ug/kg	1.9	--	--	1
1,2-Dichlorobenzene	ND	ug/kg	7.6	--	--	1



Project Name: E. BOSTON

Lab Number: L1704816

Project Number: 43068

Report Date: 02/20/17

**SAMPLE RESULTS**

Lab ID:	L1704816-09		Date Collected:	02/15/17 09:35		
Client ID:	VES-118 (22-24)		Date Received:	02/15/17		
Sample Location:	E. BOSTON		Field Prep:	Not Specified		
Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics by 8260/5035 - Westborough Lab</b>						
1,3-Dichlorobenzene	ND		ug/kg	7.6	--	1
1,4-Dichlorobenzene	ND		ug/kg	7.6	--	1
Methyl tert butyl ether	ND		ug/kg	3.8	--	1
p/m-Xylene	ND		ug/kg	3.8	--	1
o-Xylene	ND		ug/kg	3.8	--	1
Xylenes, Total	ND		ug/kg	3.8	--	1
cis-1,2-Dichloroethene	ND		ug/kg	1.9	--	1
1,2-Dichloroethene, Total	ND		ug/kg	1.9	--	1
Dibromomethane	ND		ug/kg	7.6	--	1
1,2,3-Trichloropropane	ND		ug/kg	7.6	--	1
Styrene	ND		ug/kg	3.8	--	1
Dichlorodifluoromethane	ND		ug/kg	19	--	1
Acetone	1300	E	ug/kg	68	--	1
Carbon disulfide	9.5		ug/kg	7.6	--	1
Methyl ethyl ketone	440		ug/kg	19	--	1
Methyl isobutyl ketone	ND		ug/kg	19	--	1
2-Hexanone	ND		ug/kg	19	--	1
Bromochloromethane	ND		ug/kg	7.6	--	1
Tetrahydrofuran	ND		ug/kg	7.6	--	1
2,2-Dichloropropane	ND		ug/kg	9.5	--	1
1,2-Dibromoethane	ND		ug/kg	7.6	--	1
1,3-Dichloropropane	ND		ug/kg	7.6	--	1
1,1,1,2-Tetrachloroethane	ND		ug/kg	1.9	--	1
Bromobenzene	ND		ug/kg	9.5	--	1
n-Butylbenzene	ND		ug/kg	1.9	--	1
sec-Butylbenzene	ND		ug/kg	1.9	--	1
tert-Butylbenzene	ND		ug/kg	7.6	--	1
o-Chlorotoluene	ND		ug/kg	7.6	--	1
p-Chlorotoluene	ND		ug/kg	7.6	--	1
1,2-Dibromo-3-chloropropane	ND		ug/kg	7.6	--	1
Hexachlorobutadiene	ND		ug/kg	7.6	--	1
Isopropylbenzene	ND		ug/kg	1.9	--	1
p-Isopropyltoluene	ND		ug/kg	1.9	--	1
Naphthalene	ND		ug/kg	7.6	--	1
n-Propylbenzene	ND		ug/kg	1.9	--	1
1,2,3-Trichlorobenzene	ND		ug/kg	7.6	--	1
1,2,4-Trichlorobenzene	ND		ug/kg	7.6	--	1
1,3,5-Trimethylbenzene	ND		ug/kg	7.6	--	1
1,2,4-Trimethylbenzene	ND		ug/kg	7.6	--	1



Project Name: E. BOSTON

Lab Number: L1704816

Project Number: 43068

Report Date: 02/20/17

**SAMPLE RESULTS**

Lab ID: L1704816-09  
 Client ID: VES-118 (22-24)  
 Sample Location: E. BOSTON

Date Collected: 02/15/17 09:35  
 Date Received: 02/15/17  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics by 8260/5035 - Westborough Lab						
Diethyl ether	ND	ug/kg	9.5	--	--	1
Diisopropyl Ether	ND	ug/kg	7.6	--	--	1
Ethyl-Tert-Butyl-Ether	ND	ug/kg	7.6	--	--	1
Tertiary-Amyl Methyl Ether	ND	ug/kg	7.6	--	--	1
1,4-Dioxane	ND	ug/kg	76	--	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	109		70-130
Toluene-d8	105		70-130
4-Bromofluorobenzene	123		70-130
Dibromofluoromethane	101		70-130

Project Name: E. BOSTON

Lab Number: L1704816

Project Number: 43068

Report Date: 02/20/17

**SAMPLE RESULTS**

Lab ID: L1704816-09  
 Client ID: VES-118 (22-24)  
 Sample Location: E. BOSTON  
 Matrix: Soil  
 Analytical Method: 97,8260C  
 Analytical Date: 02/17/17 19:35  
 Analyst: BD  
 Percent Solids: 45%

Date Collected: 02/15/17 09:35  
 Date Received: 02/15/17  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics by 5035 High - Westborough Lab</b>						
Methylene chloride	ND	ug/kg	1700	--	--	1
1,1-Dichloroethane	ND	ug/kg	250	--	--	1
Chloroform	ND	ug/kg	250	--	--	1
Carbon tetrachloride	ND	ug/kg	170	--	--	1
1,2-Dichloropropane	ND	ug/kg	590	--	--	1
Dibromochloromethane	ND	ug/kg	170	--	--	1
1,1,2-Trichloroethane	ND	ug/kg	250	--	--	1
Tetrachloroethene	ND	ug/kg	170	--	--	1
Chlorobenzene	ND	ug/kg	170	--	--	1
Trichlorofluoromethane	ND	ug/kg	670	--	--	1
1,2-Dichloroethane	ND	ug/kg	170	--	--	1
1,1,1-Trichloroethane	ND	ug/kg	170	--	--	1
Bromodichloromethane	ND	ug/kg	170	--	--	1
trans-1,3-Dichloropropene	ND	ug/kg	170	--	--	1
cis-1,3-Dichloropropene	ND	ug/kg	170	--	--	1
1,3-Dichloropropene, Total	ND	ug/kg	170	--	--	1
1,1-Dichloropropene	ND	ug/kg	670	--	--	1
Bromoform	ND	ug/kg	670	--	--	1
1,1,2,2-Tetrachloroethane	ND	ug/kg	170	--	--	1
Benzene	ND	ug/kg	170	--	--	1
Toluene	ND	ug/kg	250	--	--	1
Ethylbenzene	ND	ug/kg	170	--	--	1
Chloromethane	ND	ug/kg	670	--	--	1
Bromomethane	ND	ug/kg	340	--	--	1
Vinyl chloride	ND	ug/kg	340	--	--	1
Chloroethane	ND	ug/kg	340	--	--	1
1,1-Dichloroethene	ND	ug/kg	170	--	--	1
trans-1,2-Dichloroethene	ND	ug/kg	250	--	--	1
Trichloroethene	ND	ug/kg	170	--	--	1
1,2-Dichlorobenzene	ND	ug/kg	670	--	--	1



Project Name: E. BOSTON

Lab Number: L1704816

Project Number: 43068

Report Date: 02/20/17

**SAMPLE RESULTS**

Lab ID:	L1704816-09	Date Collected:	02/15/17 09:35		
Client ID:	VES-118 (22-24)	Date Received:	02/15/17		
Sample Location:	E. BOSTON	Field Prep:	Not Specified		
Parameter	Result	Qualifier	Units	RL	MDL
<b>MCP Volatile Organics by 5035 High - Westborough Lab</b>					
1,3-Dichlorobenzene	ND	ug/kg	670	--	1
1,4-Dichlorobenzene	ND	ug/kg	670	--	1
Methyl tert butyl ether	ND	ug/kg	340	--	1
p/m-Xylene	ND	ug/kg	340	--	1
o-Xylene	ND	ug/kg	340	--	1
Xylenes, Total	ND	ug/kg	340	--	1
cis-1,2-Dichloroethene	ND	ug/kg	170	--	1
1,2-Dichloroethene, Total	ND	ug/kg	170	--	1
Dibromomethane	ND	ug/kg	670	--	1
1,2,3-Trichloropropane	ND	ug/kg	670	--	1
Styrene	ND	ug/kg	340	--	1
Dichlorodifluoromethane	ND	ug/kg	1700	--	1
Acetone	ND	ug/kg	6100	--	1
Carbon disulfide	ND	ug/kg	670	--	1
Methyl ethyl ketone	ND	ug/kg	1700	--	1
Methyl isobutyl ketone	ND	ug/kg	1700	--	1
2-Hexanone	ND	ug/kg	1700	--	1
Bromochloromethane	ND	ug/kg	670	--	1
Tetrahydrofuran	ND	ug/kg	670	--	1
2,2-Dichloropropane	ND	ug/kg	840	--	1
1,2-Dibromoethane	ND	ug/kg	670	--	1
1,3-Dichloropropane	ND	ug/kg	670	--	1
1,1,1,2-Tetrachloroethane	ND	ug/kg	170	--	1
Bromobenzene	ND	ug/kg	840	--	1
n-Butylbenzene	ND	ug/kg	170	--	1
sec-Butylbenzene	ND	ug/kg	170	--	1
tert-Butylbenzene	ND	ug/kg	670	--	1
o-Chlorotoluene	ND	ug/kg	670	--	1
p-Chlorotoluene	ND	ug/kg	670	--	1
1,2-Dibromo-3-chloropropane	ND	ug/kg	670	--	1
Hexachlorobutadiene	ND	ug/kg	670	--	1
Isopropylbenzene	ND	ug/kg	170	--	1
p-Isopropyltoluene	ND	ug/kg	170	--	1
Naphthalene	ND	ug/kg	670	--	1
n-Propylbenzene	ND	ug/kg	170	--	1
1,2,3-Trichlorobenzene	ND	ug/kg	670	--	1
1,2,4-Trichlorobenzene	ND	ug/kg	670	--	1
1,3,5-Trimethylbenzene	ND	ug/kg	670	--	1
1,2,4-Trimethylbenzene	ND	ug/kg	670	--	1



Project Name: E. BOSTON

Lab Number: L1704816

Project Number: 43068

Report Date: 02/20/17

**SAMPLE RESULTS**

Lab ID: L1704816-09  
 Client ID: VES-118 (22-24)  
 Sample Location: E. BOSTON

Date Collected: 02/15/17 09:35  
 Date Received: 02/15/17  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics by 5035 High - Westborough Lab						
Diethyl ether	ND	ug/kg	840	--	--	1
Diisopropyl Ether	ND	ug/kg	670	--	--	1
Ethyl-Tert-Butyl-Ether	ND	ug/kg	670	--	--	1
Tertiary-Amyl Methyl Ether	ND	ug/kg	670	--	--	1
1,4-Dioxane	ND	ug/kg	17000	--	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	108		70-130
Toluene-d8	100		70-130
4-Bromofluorobenzene	109		70-130
Dibromofluoromethane	95		70-130

**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704816  
**Report Date:** 02/20/17

**SAMPLE RESULTS**

Lab ID: L1704816-11  
Client ID: VES-118 (2-4)  
Sample Location: E. BOSTON  
Matrix: Soil  
Analytical Method: 97,8260C  
Analytical Date: 02/17/17 04:05  
Analyst: JC  
Percent Solids: 80%

Date Collected: 02/15/17 09:10  
Date Received: 02/15/17  
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics by 8260/5035 - Westborough Lab</b>						
Methylene chloride	ND	ug/kg	8.4	--	--	1
1,1-Dichloroethane	ND	ug/kg	1.3	--	--	1
Chloroform	ND	ug/kg	1.3	--	--	1
Carbon tetrachloride	ND	ug/kg	0.84	--	--	1
1,2-Dichloropropane	ND	ug/kg	3.0	--	--	1
Dibromochloromethane	ND	ug/kg	0.84	--	--	1
1,1,2-Trichloroethane	ND	ug/kg	1.3	--	--	1
Tetrachloroethene	ND	ug/kg	0.84	--	--	1
Chlorobenzene	ND	ug/kg	0.84	--	--	1
Trichlorofluoromethane	ND	ug/kg	3.4	--	--	1
1,2-Dichloroethane	ND	ug/kg	0.84	--	--	1
1,1,1-Trichloroethane	ND	ug/kg	0.84	--	--	1
Bromodichloromethane	ND	ug/kg	0.84	--	--	1
trans-1,3-Dichloropropene	ND	ug/kg	0.84	--	--	1
cis-1,3-Dichloropropene	ND	ug/kg	0.84	--	--	1
1,3-Dichloropropene, Total	ND	ug/kg	0.84	--	--	1
1,1-Dichloropropene	ND	ug/kg	3.4	--	--	1
Bromoform	ND	ug/kg	3.4	--	--	1
1,1,2,2-Tetrachloroethane	ND	ug/kg	0.84	--	--	1
Benzene	ND	ug/kg	0.84	--	--	1
Toluene	ND	ug/kg	1.3	--	--	1
Ethylbenzene	ND	ug/kg	0.84	--	--	1
Chloromethane	ND	ug/kg	3.4	--	--	1
Bromomethane	ND	ug/kg	1.7	--	--	1
Vinyl chloride	ND	ug/kg	1.7	--	--	1
Chloroethane	ND	ug/kg	1.7	--	--	1
1,1-Dichloroethene	ND	ug/kg	0.84	--	--	1
trans-1,2-Dichloroethene	ND	ug/kg	1.3	--	--	1
Trichloroethene	ND	ug/kg	0.84	--	--	1
1,2-Dichlorobenzene	ND	ug/kg	3.4	--	--	1



Project Name: E. BOSTON

Lab Number: L1704816

Project Number: 43068

Report Date: 02/20/17

**SAMPLE RESULTS**

Lab ID:	L1704816-11	Date Collected:	02/15/17 09:10		
Client ID:	VES-118 (2-4)	Date Received:	02/15/17		
Sample Location:	E. BOSTON	Field Prep:	Not Specified		
Parameter	Result	Qualifier	Units	RL	MDL
<b>MCP Volatile Organics by 8260/5035 - Westborough Lab</b>					
1,3-Dichlorobenzene	ND	ug/kg	3.4	--	1
1,4-Dichlorobenzene	ND	ug/kg	3.4	--	1
Methyl tert butyl ether	ND	ug/kg	1.7	--	1
p/m-Xylene	ND	ug/kg	1.7	--	1
o-Xylene	ND	ug/kg	1.7	--	1
Xylenes, Total	ND	ug/kg	1.7	--	1
cis-1,2-Dichloroethene	ND	ug/kg	0.84	--	1
1,2-Dichloroethene, Total	ND	ug/kg	0.84	--	1
Dibromomethane	ND	ug/kg	3.4	--	1
1,2,3-Trichloropropane	ND	ug/kg	3.4	--	1
Styrene	ND	ug/kg	1.7	--	1
Dichlorodifluoromethane	ND	ug/kg	8.4	--	1
Acetone	ND	ug/kg	30	--	1
Carbon disulfide	ND	ug/kg	3.4	--	1
Methyl ethyl ketone	ND	ug/kg	8.4	--	1
Methyl isobutyl ketone	ND	ug/kg	8.4	--	1
2-Hexanone	ND	ug/kg	8.4	--	1
Bromochloromethane	ND	ug/kg	3.4	--	1
Tetrahydrofuran	ND	ug/kg	3.4	--	1
2,2-Dichloropropane	ND	ug/kg	4.2	--	1
1,2-Dibromoethane	ND	ug/kg	3.4	--	1
1,3-Dichloropropane	ND	ug/kg	3.4	--	1
1,1,1,2-Tetrachloroethane	ND	ug/kg	0.84	--	1
Bromobenzene	ND	ug/kg	4.2	--	1
n-Butylbenzene	ND	ug/kg	0.84	--	1
sec-Butylbenzene	ND	ug/kg	0.84	--	1
tert-Butylbenzene	ND	ug/kg	3.4	--	1
o-Chlorotoluene	ND	ug/kg	3.4	--	1
p-Chlorotoluene	ND	ug/kg	3.4	--	1
1,2-Dibromo-3-chloropropane	ND	ug/kg	3.4	--	1
Hexachlorobutadiene	ND	ug/kg	3.4	--	1
Isopropylbenzene	ND	ug/kg	0.84	--	1
p-Isopropyltoluene	ND	ug/kg	0.84	--	1
Naphthalene	ND	ug/kg	3.4	--	1
n-Propylbenzene	ND	ug/kg	0.84	--	1
1,2,3-Trichlorobenzene	ND	ug/kg	3.4	--	1
1,2,4-Trichlorobenzene	ND	ug/kg	3.4	--	1
1,3,5-Trimethylbenzene	ND	ug/kg	3.4	--	1
1,2,4-Trimethylbenzene	ND	ug/kg	3.4	--	1



Project Name: E. BOSTON

Lab Number: L1704816

Project Number: 43068

Report Date: 02/20/17

**SAMPLE RESULTS**

Lab ID: L1704816-11  
 Client ID: VES-118 (2-4)  
 Sample Location: E. BOSTON

Date Collected: 02/15/17 09:10  
 Date Received: 02/15/17  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics by 8260/5035 - Westborough Lab						
Diethyl ether	ND	ug/kg	4.2	--	--	1
Diisopropyl Ether	ND	ug/kg	3.4	--	--	1
Ethyl-Tert-Butyl-Ether	ND	ug/kg	3.4	--	--	1
Tertiary-Amyl Methyl Ether	ND	ug/kg	3.4	--	--	1
1,4-Dioxane	ND	ug/kg	34	--	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	114		70-130
Toluene-d8	100		70-130
4-Bromofluorobenzene	112		70-130
Dibromofluoromethane	102		70-130

Project Name: E. BOSTON

Lab Number: L1704816

Project Number: 43068

Report Date: 02/20/17

**SAMPLE RESULTS**

Lab ID: L1704816-12  
 Client ID: VES-127 (18-20)  
 Sample Location: E. BOSTON  
 Matrix: Soil  
 Analytical Method: 97,8260C  
 Analytical Date: 02/17/17 04:31  
 Analyst: JC  
 Percent Solids: 72%

Date Collected: 02/15/17 08:40  
 Date Received: 02/15/17  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics by 8260/5035 - Westborough Lab</b>						
Methylene chloride	ND	ug/kg	6.1	--	--	1
1,1-Dichloroethane	ND	ug/kg	0.92	--	--	1
Chloroform	ND	ug/kg	0.92	--	--	1
Carbon tetrachloride	ND	ug/kg	0.61	--	--	1
1,2-Dichloropropane	ND	ug/kg	2.1	--	--	1
Dibromochloromethane	ND	ug/kg	0.61	--	--	1
1,1,2-Trichloroethane	ND	ug/kg	0.92	--	--	1
Tetrachloroethene	ND	ug/kg	0.61	--	--	1
Chlorobenzene	ND	ug/kg	0.61	--	--	1
Trichlorofluoromethane	ND	ug/kg	2.4	--	--	1
1,2-Dichloroethane	ND	ug/kg	0.61	--	--	1
1,1,1-Trichloroethane	ND	ug/kg	0.61	--	--	1
Bromodichloromethane	ND	ug/kg	0.61	--	--	1
trans-1,3-Dichloropropene	ND	ug/kg	0.61	--	--	1
cis-1,3-Dichloropropene	ND	ug/kg	0.61	--	--	1
1,3-Dichloropropene, Total	ND	ug/kg	0.61	--	--	1
1,1-Dichloropropene	ND	ug/kg	2.4	--	--	1
Bromoform	ND	ug/kg	2.4	--	--	1
1,1,2,2-Tetrachloroethane	ND	ug/kg	0.61	--	--	1
Benzene	ND	ug/kg	0.61	--	--	1
Toluene	ND	ug/kg	0.92	--	--	1
Ethylbenzene	ND	ug/kg	0.61	--	--	1
Chloromethane	ND	ug/kg	2.4	--	--	1
Bromomethane	ND	ug/kg	1.2	--	--	1
Vinyl chloride	ND	ug/kg	1.2	--	--	1
Chloroethane	ND	ug/kg	1.2	--	--	1
1,1-Dichloroethene	ND	ug/kg	0.61	--	--	1
trans-1,2-Dichloroethene	ND	ug/kg	0.92	--	--	1
Trichloroethene	ND	ug/kg	0.61	--	--	1
1,2-Dichlorobenzene	ND	ug/kg	2.4	--	--	1



Project Name: E. BOSTON

Lab Number: L1704816

Project Number: 43068

Report Date: 02/20/17

**SAMPLE RESULTS**

Lab ID:	L1704816-12	Date Collected:	02/15/17 08:40		
Client ID:	VES-127 (18-20)	Date Received:	02/15/17		
Sample Location:	E. BOSTON	Field Prep:	Not Specified		
Parameter	Result	Qualifier	Units	RL	MDL
<b>MCP Volatile Organics by 8260/5035 - Westborough Lab</b>					
1,3-Dichlorobenzene	ND	ug/kg	2.4	--	1
1,4-Dichlorobenzene	ND	ug/kg	2.4	--	1
Methyl tert butyl ether	ND	ug/kg	1.2	--	1
p/m-Xylene	ND	ug/kg	1.2	--	1
o-Xylene	ND	ug/kg	1.2	--	1
Xylenes, Total	ND	ug/kg	1.2	--	1
cis-1,2-Dichloroethene	ND	ug/kg	0.61	--	1
1,2-Dichloroethene, Total	ND	ug/kg	0.61	--	1
Dibromomethane	ND	ug/kg	2.4	--	1
1,2,3-Trichloropropane	ND	ug/kg	2.4	--	1
Styrene	ND	ug/kg	1.2	--	1
Dichlorodifluoromethane	ND	ug/kg	6.1	--	1
Acetone	ND	ug/kg	22	--	1
Carbon disulfide	15	ug/kg	2.4	--	1
Methyl ethyl ketone	ND	ug/kg	6.1	--	1
Methyl isobutyl ketone	ND	ug/kg	6.1	--	1
2-Hexanone	ND	ug/kg	6.1	--	1
Bromochloromethane	ND	ug/kg	2.4	--	1
Tetrahydrofuran	ND	ug/kg	2.4	--	1
2,2-Dichloropropane	ND	ug/kg	3.1	--	1
1,2-Dibromoethane	ND	ug/kg	2.4	--	1
1,3-Dichloropropane	ND	ug/kg	2.4	--	1
1,1,1,2-Tetrachloroethane	ND	ug/kg	0.61	--	1
Bromobenzene	ND	ug/kg	3.1	--	1
n-Butylbenzene	ND	ug/kg	0.61	--	1
sec-Butylbenzene	ND	ug/kg	0.61	--	1
tert-Butylbenzene	ND	ug/kg	2.4	--	1
o-Chlorotoluene	ND	ug/kg	2.4	--	1
p-Chlorotoluene	ND	ug/kg	2.4	--	1
1,2-Dibromo-3-chloropropane	ND	ug/kg	2.4	--	1
Hexachlorobutadiene	ND	ug/kg	2.4	--	1
Isopropylbenzene	ND	ug/kg	0.61	--	1
p-Isopropyltoluene	ND	ug/kg	0.61	--	1
Naphthalene	ND	ug/kg	2.4	--	1
n-Propylbenzene	ND	ug/kg	0.61	--	1
1,2,3-Trichlorobenzene	ND	ug/kg	2.4	--	1
1,2,4-Trichlorobenzene	ND	ug/kg	2.4	--	1
1,3,5-Trimethylbenzene	ND	ug/kg	2.4	--	1
1,2,4-Trimethylbenzene	ND	ug/kg	2.4	--	1



Project Name: E. BOSTON

Lab Number: L1704816

Project Number: 43068

Report Date: 02/20/17

**SAMPLE RESULTS**

Lab ID: L1704816-12  
 Client ID: VES-127 (18-20)  
 Sample Location: E. BOSTON

Date Collected: 02/15/17 08:40  
 Date Received: 02/15/17  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics by 8260/5035 - Westborough Lab						
Diethyl ether	ND	ug/kg	3.1	--	--	1
Diisopropyl Ether	ND	ug/kg	2.4	--	--	1
Ethyl-Tert-Butyl-Ether	ND	ug/kg	2.4	--	--	1
Tertiary-Amyl Methyl Ether	ND	ug/kg	2.4	--	--	1
1,4-Dioxane	ND	ug/kg	24	--	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	114		70-130
Toluene-d8	99		70-130
4-Bromofluorobenzene	113		70-130
Dibromofluoromethane	105		70-130

**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704816  
**Report Date:** 02/20/17

**SAMPLE RESULTS**

Lab ID: L1704816-14  
Client ID: VES-127 (2-4)  
Sample Location: E. BOSTON  
Matrix: Soil  
Analytical Method: 97,8260C  
Analytical Date: 02/17/17 04:56  
Analyst: JC  
Percent Solids: 72%

Date Collected: 02/15/17 08:30  
Date Received: 02/15/17  
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics by 8260/5035 - Westborough Lab</b>						
Methylene chloride	ND	ug/kg	10	--	--	1
1,1-Dichloroethane	ND	ug/kg	1.5	--	--	1
Chloroform	ND	ug/kg	1.5	--	--	1
Carbon tetrachloride	ND	ug/kg	1.0	--	--	1
1,2-Dichloropropane	ND	ug/kg	3.5	--	--	1
Dibromochloromethane	ND	ug/kg	1.0	--	--	1
1,1,2-Trichloroethane	ND	ug/kg	1.5	--	--	1
Tetrachloroethene	ND	ug/kg	1.0	--	--	1
Chlorobenzene	ND	ug/kg	1.0	--	--	1
Trichlorofluoromethane	ND	ug/kg	4.0	--	--	1
1,2-Dichloroethane	ND	ug/kg	1.0	--	--	1
1,1,1-Trichloroethane	ND	ug/kg	1.0	--	--	1
Bromodichloromethane	ND	ug/kg	1.0	--	--	1
trans-1,3-Dichloropropene	ND	ug/kg	1.0	--	--	1
cis-1,3-Dichloropropene	ND	ug/kg	1.0	--	--	1
1,3-Dichloropropene, Total	ND	ug/kg	1.0	--	--	1
1,1-Dichloropropene	ND	ug/kg	4.0	--	--	1
Bromoform	ND	ug/kg	4.0	--	--	1
1,1,2,2-Tetrachloroethane	ND	ug/kg	1.0	--	--	1
Benzene	ND	ug/kg	1.0	--	--	1
Toluene	ND	ug/kg	1.5	--	--	1
Ethylbenzene	ND	ug/kg	1.0	--	--	1
Chloromethane	ND	ug/kg	4.0	--	--	1
Bromomethane	ND	ug/kg	2.0	--	--	1
Vinyl chloride	ND	ug/kg	2.0	--	--	1
Chloroethane	ND	ug/kg	2.0	--	--	1
1,1-Dichloroethene	ND	ug/kg	1.0	--	--	1
trans-1,2-Dichloroethene	ND	ug/kg	1.5	--	--	1
Trichloroethene	ND	ug/kg	1.0	--	--	1
1,2-Dichlorobenzene	ND	ug/kg	4.0	--	--	1



Project Name: E. BOSTON

Lab Number: L1704816

Project Number: 43068

Report Date: 02/20/17

**SAMPLE RESULTS**

Lab ID:	L1704816-14	Date Collected:	02/15/17 08:30			
Client ID:	VES-127 (2-4)	Date Received:	02/15/17			
Sample Location:	E. BOSTON	Field Prep:	Not Specified			
Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics by 8260/5035 - Westborough Lab</b>						
1,3-Dichlorobenzene	ND	ug/kg	4.0	--	1	
1,4-Dichlorobenzene	ND	ug/kg	4.0	--	1	
Methyl tert butyl ether	ND	ug/kg	2.0	--	1	
p/m-Xylene	ND	ug/kg	2.0	--	1	
o-Xylene	ND	ug/kg	2.0	--	1	
Xylenes, Total	ND	ug/kg	2.0	--	1	
cis-1,2-Dichloroethene	ND	ug/kg	1.0	--	1	
1,2-Dichloroethene, Total	ND	ug/kg	1.0	--	1	
Dibromomethane	ND	ug/kg	4.0	--	1	
1,2,3-Trichloropropane	ND	ug/kg	4.0	--	1	
Styrene	ND	ug/kg	2.0	--	1	
Dichlorodifluoromethane	ND	ug/kg	10	--	1	
Acetone	ND	ug/kg	36	--	1	
Carbon disulfide	ND	ug/kg	4.0	--	1	
Methyl ethyl ketone	ND	ug/kg	10	--	1	
Methyl isobutyl ketone	ND	ug/kg	10	--	1	
2-Hexanone	ND	ug/kg	10	--	1	
Bromochloromethane	ND	ug/kg	4.0	--	1	
Tetrahydrofuran	ND	ug/kg	4.0	--	1	
2,2-Dichloropropane	ND	ug/kg	5.0	--	1	
1,2-Dibromoethane	ND	ug/kg	4.0	--	1	
1,3-Dichloropropane	ND	ug/kg	4.0	--	1	
1,1,1,2-Tetrachloroethane	ND	ug/kg	1.0	--	1	
Bromobenzene	ND	ug/kg	5.0	--	1	
n-Butylbenzene	ND	ug/kg	1.0	--	1	
sec-Butylbenzene	ND	ug/kg	1.0	--	1	
tert-Butylbenzene	ND	ug/kg	4.0	--	1	
o-Chlorotoluene	ND	ug/kg	4.0	--	1	
p-Chlorotoluene	ND	ug/kg	4.0	--	1	
1,2-Dibromo-3-chloropropane	ND	ug/kg	4.0	--	1	
Hexachlorobutadiene	ND	ug/kg	4.0	--	1	
Isopropylbenzene	ND	ug/kg	1.0	--	1	
p-Isopropyltoluene	ND	ug/kg	1.0	--	1	
Naphthalene	ND	ug/kg	4.0	--	1	
n-Propylbenzene	ND	ug/kg	1.0	--	1	
1,2,3-Trichlorobenzene	ND	ug/kg	4.0	--	1	
1,2,4-Trichlorobenzene	ND	ug/kg	4.0	--	1	
1,3,5-Trimethylbenzene	ND	ug/kg	4.0	--	1	
1,2,4-Trimethylbenzene	ND	ug/kg	4.0	--	1	



Project Name: E. BOSTON

Lab Number: L1704816

Project Number: 43068

Report Date: 02/20/17

**SAMPLE RESULTS**

Lab ID: L1704816-14  
 Client ID: VES-127 (2-4)  
 Sample Location: E. BOSTON

Date Collected: 02/15/17 08:30  
 Date Received: 02/15/17  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics by 8260/5035 - Westborough Lab						
Diethyl ether	ND		ug/kg	5.0	--	1
Diisopropyl Ether	ND		ug/kg	4.0	--	1
Ethyl-Tert-Butyl-Ether	ND		ug/kg	4.0	--	1
Tertiary-Amyl Methyl Ether	ND		ug/kg	4.0	--	1
1,4-Dioxane	ND		ug/kg	40	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	113		70-130
Toluene-d8	103		70-130
4-Bromofluorobenzene	117		70-130
Dibromofluoromethane	102		70-130

Project Name: E. BOSTON

Lab Number: L1704816

Project Number: 43068

Report Date: 02/20/17

**SAMPLE RESULTS**

Lab ID: L1704816-15  
 Client ID: VES-106 (10-12)  
 Sample Location: E. BOSTON  
 Matrix: Soil  
 Analytical Method: 97,8260C  
 Analytical Date: 02/17/17 05:22  
 Analyst: JC  
 Percent Solids: 56%

Date Collected: 02/15/17 10:00  
 Date Received: 02/15/17  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics by 8260/5035 - Westborough Lab</b>						
Methylene chloride	ND	ug/kg	14	--	--	1
1,1-Dichloroethane	ND	ug/kg	2.1	--	--	1
Chloroform	ND	ug/kg	2.1	--	--	1
Carbon tetrachloride	ND	ug/kg	1.4	--	--	1
1,2-Dichloropropane	ND	ug/kg	4.8	--	--	1
Dibromochloromethane	ND	ug/kg	1.4	--	--	1
1,1,2-Trichloroethane	ND	ug/kg	2.1	--	--	1
Tetrachloroethene	ND	ug/kg	1.4	--	--	1
Chlorobenzene	ND	ug/kg	1.4	--	--	1
Trichlorofluoromethane	ND	ug/kg	5.5	--	--	1
1,2-Dichloroethane	ND	ug/kg	1.4	--	--	1
1,1,1-Trichloroethane	ND	ug/kg	1.4	--	--	1
Bromodichloromethane	ND	ug/kg	1.4	--	--	1
trans-1,3-Dichloropropene	ND	ug/kg	1.4	--	--	1
cis-1,3-Dichloropropene	ND	ug/kg	1.4	--	--	1
1,3-Dichloropropene, Total	ND	ug/kg	1.4	--	--	1
1,1-Dichloropropene	ND	ug/kg	5.5	--	--	1
Bromoform	ND	ug/kg	5.5	--	--	1
1,1,2,2-Tetrachloroethane	ND	ug/kg	1.4	--	--	1
Benzene	ND	ug/kg	1.4	--	--	1
Toluene	ND	ug/kg	2.1	--	--	1
Ethylbenzene	ND	ug/kg	1.4	--	--	1
Chloromethane	ND	ug/kg	5.5	--	--	1
Bromomethane	ND	ug/kg	2.8	--	--	1
Vinyl chloride	ND	ug/kg	2.8	--	--	1
Chloroethane	ND	ug/kg	2.8	--	--	1
1,1-Dichloroethene	ND	ug/kg	1.4	--	--	1
trans-1,2-Dichloroethene	ND	ug/kg	2.1	--	--	1
Trichloroethene	ND	ug/kg	1.4	--	--	1
1,2-Dichlorobenzene	ND	ug/kg	5.5	--	--	1



Project Name: E. BOSTON

Lab Number: L1704816

Project Number: 43068

Report Date: 02/20/17

**SAMPLE RESULTS**

Lab ID:	L1704816-15	Date Collected:	02/15/17 10:00		
Client ID:	VES-106 (10-12)	Date Received:	02/15/17		
Sample Location:	E. BOSTON	Field Prep:	Not Specified		
Parameter	Result	Qualifier	Units	RL	MDL
<b>MCP Volatile Organics by 8260/5035 - Westborough Lab</b>					
1,3-Dichlorobenzene	ND	ug/kg	5.5	--	1
1,4-Dichlorobenzene	ND	ug/kg	5.5	--	1
Methyl tert butyl ether	ND	ug/kg	2.8	--	1
p/m-Xylene	ND	ug/kg	2.8	--	1
o-Xylene	ND	ug/kg	2.8	--	1
Xylenes, Total	ND	ug/kg	2.8	--	1
cis-1,2-Dichloroethene	ND	ug/kg	1.4	--	1
1,2-Dichloroethene, Total	ND	ug/kg	1.4	--	1
Dibromomethane	ND	ug/kg	5.5	--	1
1,2,3-Trichloropropane	ND	ug/kg	5.5	--	1
Styrene	ND	ug/kg	2.8	--	1
Dichlorodifluoromethane	ND	ug/kg	14	--	1
Acetone	67	ug/kg	50	--	1
Carbon disulfide	24	ug/kg	5.5	--	1
Methyl ethyl ketone	ND	ug/kg	14	--	1
Methyl isobutyl ketone	ND	ug/kg	14	--	1
2-Hexanone	ND	ug/kg	14	--	1
Bromochloromethane	ND	ug/kg	5.5	--	1
Tetrahydrofuran	ND	ug/kg	5.5	--	1
2,2-Dichloropropane	ND	ug/kg	6.9	--	1
1,2-Dibromoethane	ND	ug/kg	5.5	--	1
1,3-Dichloropropane	ND	ug/kg	5.5	--	1
1,1,1,2-Tetrachloroethane	ND	ug/kg	1.4	--	1
Bromobenzene	ND	ug/kg	6.9	--	1
n-Butylbenzene	ND	ug/kg	1.4	--	1
sec-Butylbenzene	ND	ug/kg	1.4	--	1
tert-Butylbenzene	ND	ug/kg	5.5	--	1
o-Chlorotoluene	ND	ug/kg	5.5	--	1
p-Chlorotoluene	ND	ug/kg	5.5	--	1
1,2-Dibromo-3-chloropropane	ND	ug/kg	5.5	--	1
Hexachlorobutadiene	ND	ug/kg	5.5	--	1
Isopropylbenzene	ND	ug/kg	1.4	--	1
p-Isopropyltoluene	ND	ug/kg	1.4	--	1
Naphthalene	ND	ug/kg	5.5	--	1
n-Propylbenzene	ND	ug/kg	1.4	--	1
1,2,3-Trichlorobenzene	ND	ug/kg	5.5	--	1
1,2,4-Trichlorobenzene	ND	ug/kg	5.5	--	1
1,3,5-Trimethylbenzene	ND	ug/kg	5.5	--	1
1,2,4-Trimethylbenzene	ND	ug/kg	5.5	--	1



Project Name: E. BOSTON

Lab Number: L1704816

Project Number: 43068

Report Date: 02/20/17

**SAMPLE RESULTS**

Lab ID: L1704816-15  
 Client ID: VES-106 (10-12)  
 Sample Location: E. BOSTON

Date Collected: 02/15/17 10:00  
 Date Received: 02/15/17  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics by 8260/5035 - Westborough Lab						
Diethyl ether	ND	ug/kg	6.9	--	--	1
Diisopropyl Ether	ND	ug/kg	5.5	--	--	1
Ethyl-Tert-Butyl-Ether	ND	ug/kg	5.5	--	--	1
Tertiary-Amyl Methyl Ether	ND	ug/kg	5.5	--	--	1
1,4-Dioxane	ND	ug/kg	55	--	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	115		70-130
Toluene-d8	99		70-130
4-Bromofluorobenzene	113		70-130
Dibromofluoromethane	103		70-130

**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704816  
**Report Date:** 02/20/17

### Method Blank Analysis Batch Quality Control

Analytical Method: 97,8260C  
Analytical Date: 02/16/17 21:16  
Analyst: BD

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics by 8260/5035 - Westborough Lab for sample(s):	01-04,06,08-09,11-12,14-15				
Batch: WG978809-5					
Methylene chloride	ND		ug/kg	10	--
1,1-Dichloroethane	ND		ug/kg	1.5	--
Chloroform	ND		ug/kg	1.5	--
Carbon tetrachloride	ND		ug/kg	1.0	--
1,2-Dichloropropane	ND		ug/kg	3.5	--
Dibromochloromethane	ND		ug/kg	1.0	--
1,1,2-Trichloroethane	ND		ug/kg	1.5	--
Tetrachloroethene	ND		ug/kg	1.0	--
Chlorobenzene	ND		ug/kg	1.0	--
Trichlorofluoromethane	ND		ug/kg	4.0	--
1,2-Dichloroethane	ND		ug/kg	1.0	--
1,1,1-Trichloroethane	ND		ug/kg	1.0	--
Bromodichloromethane	ND		ug/kg	1.0	--
trans-1,3-Dichloropropene	ND		ug/kg	1.0	--
cis-1,3-Dichloropropene	ND		ug/kg	1.0	--
1,3-Dichloropropene, Total	ND		ug/kg	1.0	--
1,1-Dichloropropene	ND		ug/kg	4.0	--
Bromoform	ND		ug/kg	4.0	--
1,1,2,2-Tetrachloroethane	ND		ug/kg	1.0	--
Benzene	ND		ug/kg	1.0	--
Toluene	ND		ug/kg	1.5	--
Ethylbenzene	ND		ug/kg	1.0	--
Chloromethane	ND		ug/kg	4.0	--
Bromomethane	ND		ug/kg	2.0	--
Vinyl chloride	ND		ug/kg	2.0	--
Chloroethane	ND		ug/kg	2.0	--
1,1-Dichloroethene	ND		ug/kg	1.0	--
trans-1,2-Dichloroethene	ND		ug/kg	1.5	--
Trichloroethene	ND		ug/kg	1.0	--



**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704816  
**Report Date:** 02/20/17

### Method Blank Analysis Batch Quality Control

Analytical Method: 97,8260C  
Analytical Date: 02/16/17 21:16  
Analyst: BD

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics by 8260/5035 - Westborough Lab for sample(s):	01-04,06,08-09,11-12,14-15				
Batch: WG978809-5					
1,2-Dichlorobenzene	ND		ug/kg	4.0	--
1,3-Dichlorobenzene	ND		ug/kg	4.0	--
1,4-Dichlorobenzene	ND		ug/kg	4.0	--
Methyl tert butyl ether	ND		ug/kg	2.0	--
p/m-Xylene	ND		ug/kg	2.0	--
o-Xylene	ND		ug/kg	2.0	--
Xylenes, Total	ND		ug/kg	2.0	--
cis-1,2-Dichloroethene	ND		ug/kg	1.0	--
1,2-Dichloroethene, Total	ND		ug/kg	1.0	--
Dibromomethane	ND		ug/kg	4.0	--
1,2,3-Trichloropropane	ND		ug/kg	4.0	--
Styrene	ND		ug/kg	2.0	--
Dichlorodifluoromethane	ND		ug/kg	10	--
Acetone	ND		ug/kg	36	--
Carbon disulfide	ND		ug/kg	4.0	--
Methyl ethyl ketone	ND		ug/kg	10	--
Methyl isobutyl ketone	ND		ug/kg	10	--
2-Hexanone	ND		ug/kg	10	--
Bromochloromethane	ND		ug/kg	4.0	--
Tetrahydrofuran	ND		ug/kg	4.0	--
2,2-Dichloropropane	ND		ug/kg	5.0	--
1,2-Dibromoethane	ND		ug/kg	4.0	--
1,3-Dichloropropane	ND		ug/kg	4.0	--
1,1,1,2-Tetrachloroethane	ND		ug/kg	1.0	--
Bromobenzene	ND		ug/kg	5.0	--
n-Butylbenzene	ND		ug/kg	1.0	--
sec-Butylbenzene	ND		ug/kg	1.0	--
tert-Butylbenzene	ND		ug/kg	4.0	--
o-Chlorotoluene	ND		ug/kg	4.0	--



**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704816  
**Report Date:** 02/20/17

### Method Blank Analysis Batch Quality Control

Analytical Method: 97,8260C  
Analytical Date: 02/16/17 21:16  
Analyst: BD

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics by 8260/5035 - Westborough Lab for sample(s): 01-04,06,08-09,11-12,14-15					
Batch: WG978809-5					
p-Chlorotoluene	ND		ug/kg	4.0	--
1,2-Dibromo-3-chloropropane	ND		ug/kg	4.0	--
Hexachlorobutadiene	ND		ug/kg	4.0	--
Isopropylbenzene	ND		ug/kg	1.0	--
p-Isopropyltoluene	ND		ug/kg	1.0	--
Naphthalene	ND		ug/kg	4.0	--
n-Propylbenzene	ND		ug/kg	1.0	--
1,2,3-Trichlorobenzene	ND		ug/kg	4.0	--
1,2,4-Trichlorobenzene	ND		ug/kg	4.0	--
1,3,5-Trimethylbenzene	ND		ug/kg	4.0	--
1,2,4-Trimethylbenzene	ND		ug/kg	4.0	--
Diethyl ether	ND		ug/kg	5.0	--
Diisopropyl Ether	ND		ug/kg	4.0	--
Ethyl-Tert-Butyl-Ether	ND		ug/kg	4.0	--
Tertiary-Amyl Methyl Ether	ND		ug/kg	4.0	--
1,4-Dioxane	ND		ug/kg	40	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	103		70-130
Toluene-d8	101		70-130
4-Bromofluorobenzene	109		70-130
Dibromofluoromethane	93		70-130

**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704816  
**Report Date:** 02/20/17

### Method Blank Analysis Batch Quality Control

Analytical Method: 97,8260C  
Analytical Date: 02/17/17 10:13  
Analyst: MV

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics by 5035 High - Westborough Lab for sample(s):	09			Batch:	WG979055-5
Methylene chloride	ND		ug/kg	500	--
1,1-Dichloroethane	ND		ug/kg	75	--
Chloroform	ND		ug/kg	75	--
Carbon tetrachloride	ND		ug/kg	50	--
1,2-Dichloropropane	ND		ug/kg	180	--
Dibromochloromethane	ND		ug/kg	50	--
1,1,2-Trichloroethane	ND		ug/kg	75	--
Tetrachloroethene	ND		ug/kg	50	--
Chlorobenzene	ND		ug/kg	50	--
Trichlorofluoromethane	ND		ug/kg	200	--
1,2-Dichloroethane	ND		ug/kg	50	--
1,1,1-Trichloroethane	ND		ug/kg	50	--
Bromodichloromethane	ND		ug/kg	50	--
trans-1,3-Dichloropropene	ND		ug/kg	50	--
cis-1,3-Dichloropropene	ND		ug/kg	50	--
1,3-Dichloropropene, Total	ND		ug/kg	50	--
1,1-Dichloropropene	ND		ug/kg	200	--
Bromoform	ND		ug/kg	200	--
1,1,2,2-Tetrachloroethane	ND		ug/kg	50	--
Benzene	ND		ug/kg	50	--
Toluene	ND		ug/kg	75	--
Ethylbenzene	ND		ug/kg	50	--
Chloromethane	ND		ug/kg	200	--
Bromomethane	ND		ug/kg	100	--
Vinyl chloride	ND		ug/kg	100	--
Chloroethane	ND		ug/kg	100	--
1,1-Dichloroethene	ND		ug/kg	50	--
trans-1,2-Dichloroethene	ND		ug/kg	75	--
Trichloroethene	ND		ug/kg	50	--



**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704816  
**Report Date:** 02/20/17

### Method Blank Analysis Batch Quality Control

Analytical Method: 97,8260C  
Analytical Date: 02/17/17 10:13  
Analyst: MV

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics by 5035 High - Westborough Lab for sample(s):	09			Batch:	WG979055-5
1,2-Dichlorobenzene	ND		ug/kg	200	--
1,3-Dichlorobenzene	ND		ug/kg	200	--
1,4-Dichlorobenzene	ND		ug/kg	200	--
Methyl tert butyl ether	ND		ug/kg	100	--
p/m-Xylene	ND		ug/kg	100	--
o-Xylene	ND		ug/kg	100	--
Xylenes, Total	ND		ug/kg	100	--
cis-1,2-Dichloroethene	ND		ug/kg	50	--
1,2-Dichloroethene, Total	ND		ug/kg	50	--
Dibromomethane	ND		ug/kg	200	--
1,2,3-Trichloropropane	ND		ug/kg	200	--
Styrene	ND		ug/kg	100	--
Dichlorodifluoromethane	ND		ug/kg	500	--
Acetone	ND		ug/kg	1800	--
Carbon disulfide	ND		ug/kg	200	--
Methyl ethyl ketone	ND		ug/kg	500	--
Methyl isobutyl ketone	ND		ug/kg	500	--
2-Hexanone	ND		ug/kg	500	--
Bromochloromethane	ND		ug/kg	200	--
Tetrahydrofuran	ND		ug/kg	200	--
2,2-Dichloropropane	ND		ug/kg	250	--
1,2-Dibromoethane	ND		ug/kg	200	--
1,3-Dichloropropane	ND		ug/kg	200	--
1,1,1,2-Tetrachloroethane	ND		ug/kg	50	--
Bromobenzene	ND		ug/kg	250	--
n-Butylbenzene	ND		ug/kg	50	--
sec-Butylbenzene	ND		ug/kg	50	--
tert-Butylbenzene	ND		ug/kg	200	--
o-Chlorotoluene	ND		ug/kg	200	--



**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704816  
**Report Date:** 02/20/17

### **Method Blank Analysis**

#### **Batch Quality Control**

Analytical Method: 97,8260C  
Analytical Date: 02/17/17 10:13  
Analyst: MV

<b>Parameter</b>	<b>Result</b>	<b>Qualifier</b>	<b>Units</b>	<b>RL</b>	<b>MDL</b>
MCP Volatile Organics by 5035 High - Westborough Lab for sample(s):	09			Batch:	WG979055-5
p-Chlorotoluene	ND		ug/kg	200	--
1,2-Dibromo-3-chloropropane	ND		ug/kg	200	--
Hexachlorobutadiene	ND		ug/kg	200	--
Isopropylbenzene	ND		ug/kg	50	--
p-Isopropyltoluene	ND		ug/kg	50	--
Naphthalene	ND		ug/kg	200	--
n-Propylbenzene	ND		ug/kg	50	--
1,2,3-Trichlorobenzene	ND		ug/kg	200	--
1,2,4-Trichlorobenzene	ND		ug/kg	200	--
1,3,5-Trimethylbenzene	ND		ug/kg	200	--
1,2,4-Trimethylbenzene	ND		ug/kg	200	--
Diethyl ether	ND		ug/kg	250	--
Diisopropyl Ether	ND		ug/kg	200	--
Ethyl-Tert-Butyl-Ether	ND		ug/kg	200	--
Tertiary-Amyl Methyl Ether	ND		ug/kg	200	--
1,4-Dioxane	ND		ug/kg	5000	--

<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Acceptance Criteria</b>
1,2-Dichloroethane-d4	106		70-130
Toluene-d8	100		70-130
4-Bromofluorobenzene	111		70-130
Dibromofluoromethane	95		70-130

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704816  
**Report Date:** 02/20/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics by 8260/5035 - Westborough Lab Associated sample(s): 01-04,06,08-09,11-12,14-15 Batch: WG978809-3 WG978809-4								
Methylene chloride	108		107		70-130	1		20
1,1-Dichloroethane	105		103		70-130	2		20
Chloroform	104		101		70-130	3		20
Carbon tetrachloride	91		89		70-130	2		20
1,2-Dichloropropane	104		103		70-130	1		20
Dibromochloromethane	88		89		70-130	1		20
1,1,2-Trichloroethane	99		99		70-130	0		20
Tetrachloroethene	86		83		70-130	4		20
Chlorobenzene	95		92		70-130	3		20
Trichlorofluoromethane	94		90		70-130	4		20
1,2-Dichloroethane	105		105		70-130	0		20
1,1,1-Trichloroethane	98		96		70-130	2		20
Bromodichloromethane	99		98		70-130	1		20
trans-1,3-Dichloropropene	98		97		70-130	1		20
cis-1,3-Dichloropropene	101		100		70-130	1		20
1,1-Dichloropropene	100		96		70-130	4		20
Bromoform	84		86		70-130	2		20
1,1,2,2-Tetrachloroethane	97		98		70-130	1		20
Benzene	103		100		70-130	3		20
Toluene	97		93		70-130	4		20
Ethylbenzene	98		95		70-130	3		20

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704816  
**Report Date:** 02/20/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics by 8260/5035 - Westborough Lab Associated sample(s): 01-04,06,08-09,11-12,14-15 Batch: WG978809-3 WG978809-4								
Chloromethane	103		102		70-130	1		20
Bromomethane	94		89		70-130	5		20
Vinyl chloride	93		89		70-130	4		20
Chloroethane	104		100		70-130	4		20
1,1-Dichloroethene	93		90		70-130	3		20
trans-1,2-Dichloroethene	98		96		70-130	2		20
Trichloroethene	99		96		70-130	3		20
1,2-Dichlorobenzene	92		91		70-130	1		20
1,3-Dichlorobenzene	94		92		70-130	2		20
1,4-Dichlorobenzene	93		92		70-130	1		20
Methyl tert butyl ether	101		101		70-130	0		20
p/m-Xylene	96		92		70-130	4		20
o-Xylene	96		94		70-130	2		20
cis-1,2-Dichloroethene	100		98		70-130	2		20
Dibromomethane	101		98		70-130	3		20
1,2,3-Trichloropropane	102		102		70-130	0		20
Styrene	95		94		70-130	1		20
Dichlorodifluoromethane	81		78		70-130	4		20
Acetone	101		103		70-130	2		20
Carbon disulfide	93		91		70-130	2		20
Methyl ethyl ketone	96		101		70-130	5		20

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704816  
**Report Date:** 02/20/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics by 8260/5035 - Westborough Lab Associated sample(s): 01-04,06,08-09,11-12,14-15 Batch: WG978809-3 WG978809-4								
Methyl isobutyl ketone	89		90		70-130	1		20
2-Hexanone	97		101		70-130	4		20
Bromochloromethane	93		92		70-130	1		20
Tetrahydrofuran	112		114		70-130	2		20
2,2-Dichloropropane	103		100		70-130	3		20
1,2-Dibromoethane	94		93		70-130	1		20
1,3-Dichloropropane	100		98		70-130	2		20
1,1,1,2-Tetrachloroethane	92		91		70-130	1		20
Bromobenzene	92		90		70-130	2		20
n-Butylbenzene	105		102		70-130	3		20
sec-Butylbenzene	98		95		70-130	3		20
tert-Butylbenzene	95		92		70-130	3		20
o-Chlorotoluene	104		98		70-130	6		20
p-Chlorotoluene	104		101		70-130	3		20
1,2-Dibromo-3-chloropropane	81		81		70-130	0		20
Hexachlorobutadiene	84		81		70-130	4		20
Isopropylbenzene	98		94		70-130	4		20
p-Isopropyltoluene	98		94		70-130	4		20
Naphthalene	94		96		70-130	2		20
n-Propylbenzene	102		98		70-130	4		20
1,2,3-Trichlorobenzene	88		89		70-130	1		20

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704816  
**Report Date:** 02/20/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics by 8260/5035 - Westborough Lab Associated sample(s): 01-04,06,08-09,11-12,14-15 Batch: WG978809-3 WG978809-4								
1,2,4-Trichlorobenzene	91		90		70-130	1		20
1,3,5-Trimethylbenzene	99		97		70-130	2		20
1,2,4-Trimethylbenzene	100		96		70-130	4		20
Diethyl ether	102		102		70-130	0		20
Diisopropyl Ether	111		110		70-130	1		20
Ethyl-Tert-Butyl-Ether	104		103		70-130	1		20
Tertiary-Amyl Methyl Ether	100		100		70-130	0		20
1,4-Dioxane	98		108		70-130	10		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	105		106		70-130
Toluene-d8	100		100		70-130
4-Bromofluorobenzene	106		108		70-130
Dibromofluoromethane	98		99		70-130

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704816  
**Report Date:** 02/20/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics by 5035 High - Westborough Lab Associated sample(s): 09 Batch: WG979055-3 WG979055-4								
Methylene chloride	110		116		70-130	5		20
1,1-Dichloroethane	104		108		70-130	4		20
Chloroform	102		106		70-130	4		20
Carbon tetrachloride	96		102		70-130	6		20
1,2-Dichloropropane	104		107		70-130	3		20
Dibromochloromethane	91		93		70-130	2		20
1,1,2-Trichloroethane	99		102		70-130	3		20
Tetrachloroethene	87		89		70-130	2		20
Chlorobenzene	92		94		70-130	2		20
Trichlorofluoromethane	101		106		70-130	5		20
1,2-Dichloroethane	110		110		70-130	0		20
1,1,1-Trichloroethane	103		105		70-130	2		20
Bromodichloromethane	100		102		70-130	2		20
trans-1,3-Dichloropropene	100		103		70-130	3		20
cis-1,3-Dichloropropene	100		104		70-130	4		20
1,1-Dichloropropene	104		108		70-130	4		20
Bromoform	84		89		70-130	6		20
1,1,2,2-Tetrachloroethane	102		105		70-130	3		20
Benzene	101		104		70-130	3		20
Toluene	94		97		70-130	3		20
Ethylbenzene	96		98		70-130	2		20

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704816  
**Report Date:** 02/20/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics by 5035 High - Westborough Lab Associated sample(s): 09 Batch: WG979055-3 WG979055-4								
Chloromethane	104		107		70-130	3		20
Bromomethane	81		86		70-130	6		20
Vinyl chloride	95		98		70-130	3		20
Chloroethane	103		104		70-130	1		20
1,1-Dichloroethene	98		102		70-130	4		20
trans-1,2-Dichloroethene	98		102		70-130	4		20
Trichloroethene	99		102		70-130	3		20
1,2-Dichlorobenzene	90		95		70-130	5		20
1,3-Dichlorobenzene	92		95		70-130	3		20
1,4-Dichlorobenzene	92		95		70-130	3		20
Methyl tert butyl ether	104		105		70-130	1		20
p/m-Xylene	93		96		70-130	3		20
o-Xylene	93		96		70-130	3		20
cis-1,2-Dichloroethene	98		101		70-130	3		20
Dibromomethane	101		104		70-130	3		20
1,2,3-Trichloropropane	105		107		70-130	2		20
Styrene	94		95		70-130	1		20
Dichlorodifluoromethane	88		91		70-130	3		20
Acetone	117		120		70-130	3		20
Carbon disulfide	100		125		70-130	22	Q	20
Methyl ethyl ketone	112		129		70-130	14		20

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704816  
**Report Date:** 02/20/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics by 5035 High - Westborough Lab Associated sample(s): 09 Batch: WG979055-3 WG979055-4								
Methyl isobutyl ketone	99		100		70-130	1		20
2-Hexanone	112		112		70-130	0		20
Bromochloromethane	93		96		70-130	3		20
Tetrahydrofuran	124		125		70-130	1		20
2,2-Dichloropropane	105		109		70-130	4		20
1,2-Dibromoethane	95		96		70-130	1		20
1,3-Dichloropropane	101		102		70-130	1		20
1,1,1,2-Tetrachloroethane	91		94		70-130	3		20
Bromobenzene	90		93		70-130	3		20
n-Butylbenzene	104		108		70-130	4		20
sec-Butylbenzene	97		102		70-130	5		20
tert-Butylbenzene	94		99		70-130	5		20
o-Chlorotoluene	100		104		70-130	4		20
p-Chlorotoluene	100		104		70-130	4		20
1,2-Dibromo-3-chloropropane	82		88		70-130	7		20
Hexachlorobutadiene	81		85		70-130	5		20
Isopropylbenzene	96		100		70-130	4		20
p-Isopropyltoluene	96		100		70-130	4		20
Naphthalene	97		99		70-130	2		20
n-Propylbenzene	100		105		70-130	5		20
1,2,3-Trichlorobenzene	90		91		70-130	1		20

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704816  
**Report Date:** 02/20/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics by 5035 High - Westborough Lab Associated sample(s): 09 Batch: WG979055-3 WG979055-4								
1,2,4-Trichlorobenzene	90		91		70-130	1		20
1,3,5-Trimethylbenzene	98		101		70-130	3		20
1,2,4-Trimethylbenzene	97		102		70-130	5		20
Diethyl ether	103		106		70-130	3		20
Diisopropyl Ether	112		115		70-130	3		20
Ethyl-Tert-Butyl-Ether	105		108		70-130	3		20
Tertiary-Amyl Methyl Ether	103		106		70-130	3		20
1,4-Dioxane	106		101		70-130	5		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	110		107		70-130
Toluene-d8	99		100		70-130
4-Bromofluorobenzene	108		109		70-130
Dibromofluoromethane	100		100		70-130

# **SEMIVOLATILES**



**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704816  
**Report Date:** 02/20/17

**SAMPLE RESULTS**

Lab ID: L1704816-01  
Client ID: VES-113 (2-4)  
Sample Location: E. BOSTON  
Matrix: Soil  
Analytical Method: 97,8270D  
Analytical Date: 02/17/17 03:35  
Analyst: SZ  
Percent Solids: 83%

Date Collected: 02/15/17 14:25  
Date Received: 02/15/17  
Field Prep: Not Specified  
Extraction Method: EPA 3546  
Extraction Date: 02/15/17 21:36

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Semivolatile Organics - Westborough Lab</b>						
Acenaphthene	480		ug/kg	160	--	1
1,2,4-Trichlorobenzene	ND		ug/kg	200	--	1
Hexachlorobenzene	ND		ug/kg	120	--	1
Bis(2-chloroethyl)ether	ND		ug/kg	180	--	1
2-Chloronaphthalene	ND		ug/kg	200	--	1
1,2-Dichlorobenzene	ND		ug/kg	200	--	1
1,3-Dichlorobenzene	ND		ug/kg	200	--	1
1,4-Dichlorobenzene	ND		ug/kg	200	--	1
3,3'-Dichlorobenzidine	ND		ug/kg	200	--	1
2,4-Dinitrotoluene	ND		ug/kg	200	--	1
2,6-Dinitrotoluene	ND		ug/kg	200	--	1
Azobenzene	ND		ug/kg	200	--	1
Fluoranthene	22000	E	ug/kg	120	--	1
4-Bromophenyl phenyl ether	ND		ug/kg	200	--	1
Bis(2-chloroisopropyl)ether	ND		ug/kg	240	--	1
Bis(2-chloroethoxy)methane	ND		ug/kg	220	--	1
Hexachlorobutadiene	ND		ug/kg	200	--	1
Hexachloroethane	ND		ug/kg	160	--	1
Isophorone	ND		ug/kg	180	--	1
Naphthalene	ND		ug/kg	200	--	1
Nitrobenzene	ND		ug/kg	180	--	1
Bis(2-ethylhexyl)phthalate	ND		ug/kg	200	--	1
Butyl benzyl phthalate	ND		ug/kg	200	--	1
Di-n-butylphthalate	ND		ug/kg	200	--	1
Di-n-octylphthalate	ND		ug/kg	200	--	1
Diethyl phthalate	ND		ug/kg	200	--	1
Dimethyl phthalate	ND		ug/kg	200	--	1
Benzo(a)anthracene	9200	E	ug/kg	120	--	1
Benzo(a)pyrene	8300	E	ug/kg	160	--	1
Benzo(b)fluoranthene	11000	E	ug/kg	120	--	1



Project Name: E. BOSTON

Lab Number: L1704816

Project Number: 43068

Report Date: 02/20/17

**SAMPLE RESULTS**

Lab ID:	L1704816-01	Date Collected:	02/15/17 14:25
Client ID:	VES-113 (2-4)	Date Received:	02/15/17
Sample Location:	E. BOSTON	Field Prep:	Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Semivolatile Organics - Westborough Lab</b>						
Benzo(k)fluoranthene	2700		ug/kg	120	--	1
Chrysene	9100	E	ug/kg	120	--	1
Acenaphthylene	ND		ug/kg	160	--	1
Anthracene	3100		ug/kg	120	--	1
Benzo(ghi)perylene	4600		ug/kg	160	--	1
Fluorene	580		ug/kg	200	--	1
Phenanthrene	13000	E	ug/kg	120	--	1
Dibenzo(a,h)anthracene	1100		ug/kg	120	--	1
Indeno(1,2,3-cd)pyrene	5000		ug/kg	160	--	1
Pyrene	18000	E	ug/kg	120	--	1
Aniline	ND		ug/kg	240	--	1
4-Chloroaniline	ND		ug/kg	200	--	1
Dibenzofuran	370		ug/kg	200	--	1
2-Methylnaphthalene	ND		ug/kg	240	--	1
Acetophenone	ND		ug/kg	200	--	1
2,4,6-Trichlorophenol	ND		ug/kg	120	--	1
2-Chlorophenol	ND		ug/kg	200	--	1
2,4-Dichlorophenol	ND		ug/kg	180	--	1
2,4-Dimethylphenol	ND		ug/kg	200	--	1
2-Nitrophenol	ND		ug/kg	430	--	1
4-Nitrophenol	ND		ug/kg	280	--	1
2,4-Dinitrophenol	ND		ug/kg	960	--	1
Pentachlorophenol	ND		ug/kg	400	--	1
Phenol	ND		ug/kg	200	--	1
2-Methylphenol	ND		ug/kg	200	--	1
3-Methylphenol/4-Methylphenol	ND		ug/kg	290	--	1
2,4,5-Trichlorophenol	ND		ug/kg	200	--	1
Pyridine	ND		ug/kg	220	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	52		30-130
Phenol-d6	56		30-130
Nitrobenzene-d5	62		30-130
2-Fluorobiphenyl	56		30-130
2,4,6-Tribromophenol	48		30-130
4-Terphenyl-d14	49		30-130

**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704816  
**Report Date:** 02/20/17

**SAMPLE RESULTS**

Lab ID:	L1704816-01	D	Date Collected:	02/15/17 14:25
Client ID:	VES-113 (2-4)		Date Received:	02/15/17
Sample Location:	E. BOSTON		Field Prep:	Not Specified
Matrix:	Soil		Extraction Method:	EPA 3546
Analytical Method:	97,8270D		Extraction Date:	02/15/17 21:36
Analytical Date:	02/17/17 17:32			
Analyst:	PS			
Percent Solids:	83%			

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Semivolatile Organics - Westborough Lab</b>						
Fluoranthene	27000		ug/kg	600	--	5
Benzo(a)anthracene	12000		ug/kg	600	--	5
Benzo(a)pyrene	9200		ug/kg	800	--	5
Benzo(b)fluoranthene	12000		ug/kg	600	--	5
Chrysene	12000		ug/kg	600	--	5
Phenanthrene	17000		ug/kg	600	--	5
Pyrene	22000		ug/kg	600	--	5

**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704816  
**Report Date:** 02/20/17

**SAMPLE RESULTS**

Lab ID: L1704816-02  
Client ID: VES-117 (2-4)  
Sample Location: E. BOSTON  
Matrix: Soil  
Analytical Method: 97,8270D  
Analytical Date: 02/17/17 04:01  
Analyst: SZ  
Percent Solids: 73%

Date Collected: 02/15/17 14:00  
Date Received: 02/15/17  
Field Prep: Not Specified  
Extraction Method: EPA 3546  
Extraction Date: 02/15/17 21:36

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Semivolatile Organics - Westborough Lab</b>						
Acenaphthene	ND	ug/kg	180	--	--	1
1,2,4-Trichlorobenzene	ND	ug/kg	220	--	--	1
Hexachlorobenzene	ND	ug/kg	130	--	--	1
Bis(2-chloroethyl)ether	ND	ug/kg	200	--	--	1
2-Chloronaphthalene	ND	ug/kg	220	--	--	1
1,2-Dichlorobenzene	ND	ug/kg	220	--	--	1
1,3-Dichlorobenzene	ND	ug/kg	220	--	--	1
1,4-Dichlorobenzene	ND	ug/kg	220	--	--	1
3,3'-Dichlorobenzidine	ND	ug/kg	220	--	--	1
2,4-Dinitrotoluene	ND	ug/kg	220	--	--	1
2,6-Dinitrotoluene	ND	ug/kg	220	--	--	1
Azobenzene	ND	ug/kg	220	--	--	1
Fluoranthene	1700	ug/kg	130	--	--	1
4-Bromophenyl phenyl ether	ND	ug/kg	220	--	--	1
Bis(2-chloroisopropyl)ether	ND	ug/kg	260	--	--	1
Bis(2-chloroethoxy)methane	ND	ug/kg	240	--	--	1
Hexachlorobutadiene	ND	ug/kg	220	--	--	1
Hexachloroethane	ND	ug/kg	180	--	--	1
Isophorone	ND	ug/kg	200	--	--	1
Naphthalene	220	ug/kg	220	--	--	1
Nitrobenzene	ND	ug/kg	200	--	--	1
Bis(2-ethylhexyl)phthalate	ND	ug/kg	220	--	--	1
Butyl benzyl phthalate	ND	ug/kg	220	--	--	1
Di-n-butylphthalate	ND	ug/kg	220	--	--	1
Di-n-octylphthalate	ND	ug/kg	220	--	--	1
Diethyl phthalate	ND	ug/kg	220	--	--	1
Dimethyl phthalate	ND	ug/kg	220	--	--	1
Benzo(a)anthracene	1100	ug/kg	130	--	--	1
Benzo(a)pyrene	1400	ug/kg	180	--	--	1
Benzo(b)fluoranthene	1600	ug/kg	130	--	--	1



Project Name: E. BOSTON

Lab Number: L1704816

Project Number: 43068

Report Date: 02/20/17

**SAMPLE RESULTS**

Lab ID:	L1704816-02	Date Collected:	02/15/17 14:00
Client ID:	VES-117 (2-4)	Date Received:	02/15/17
Sample Location:	E. BOSTON	Field Prep:	Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Semivolatile Organics - Westborough Lab</b>						
Benzo(k)fluoranthene	500	ug/kg	130	--	--	1
Chrysene	1200	ug/kg	130	--	--	1
Acenaphthylene	ND	ug/kg	180	--	--	1
Anthracene	260	ug/kg	130	--	--	1
Benzo(ghi)perylene	1000	ug/kg	180	--	--	1
Fluorene	ND	ug/kg	220	--	--	1
Phenanthrene	750	ug/kg	130	--	--	1
Dibenzo(a,h)anthracene	320	ug/kg	130	--	--	1
Indeno(1,2,3-cd)pyrene	880	ug/kg	180	--	--	1
Pyrene	1800	ug/kg	130	--	--	1
Aniline	ND	ug/kg	260	--	--	1
4-Chloroaniline	ND	ug/kg	220	--	--	1
Dibenzofuran	ND	ug/kg	220	--	--	1
2-Methylnaphthalene	ND	ug/kg	260	--	--	1
Acetophenone	ND	ug/kg	220	--	--	1
2,4,6-Trichlorophenol	ND	ug/kg	130	--	--	1
2-Chlorophenol	ND	ug/kg	220	--	--	1
2,4-Dichlorophenol	ND	ug/kg	200	--	--	1
2,4-Dimethylphenol	ND	ug/kg	220	--	--	1
2-Nitrophenol	ND	ug/kg	480	--	--	1
4-Nitrophenol	ND	ug/kg	310	--	--	1
2,4-Dinitrophenol	ND	ug/kg	1100	--	--	1
Pentachlorophenol	ND	ug/kg	440	--	--	1
Phenol	ND	ug/kg	220	--	--	1
2-Methylphenol	ND	ug/kg	220	--	--	1
3-Methylphenol/4-Methylphenol	ND	ug/kg	320	--	--	1
2,4,5-Trichlorophenol	ND	ug/kg	220	--	--	1
Pyridine	ND	ug/kg	240	--	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	50		30-130
Phenol-d6	53		30-130
Nitrobenzene-d5	59		30-130
2-Fluorobiphenyl	55		30-130
2,4,6-Tribromophenol	50		30-130
4-Terphenyl-d14	47		30-130

**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704816  
**Report Date:** 02/20/17

**SAMPLE RESULTS**

Lab ID: L1704816-03  
Client ID: VES-122 (3-5)  
Sample Location: E. BOSTON  
Matrix: Soil  
Analytical Method: 97,8270D  
Analytical Date: 02/17/17 04:26  
Analyst: ALS  
Percent Solids: 77%

Date Collected: 02/15/17 13:30  
Date Received: 02/15/17  
Field Prep: Not Specified  
Extraction Method: EPA 3546  
Extraction Date: 02/15/17 21:36

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Semivolatile Organics - Westborough Lab</b>						
Acenaphthene	ND	ug/kg	170	--	--	1
1,2,4-Trichlorobenzene	ND	ug/kg	210	--	--	1
Hexachlorobenzene	ND	ug/kg	130	--	--	1
Bis(2-chloroethyl)ether	ND	ug/kg	190	--	--	1
2-Chloronaphthalene	ND	ug/kg	210	--	--	1
1,2-Dichlorobenzene	ND	ug/kg	210	--	--	1
1,3-Dichlorobenzene	ND	ug/kg	210	--	--	1
1,4-Dichlorobenzene	ND	ug/kg	210	--	--	1
3,3'-Dichlorobenzidine	ND	ug/kg	210	--	--	1
2,4-Dinitrotoluene	ND	ug/kg	210	--	--	1
2,6-Dinitrotoluene	ND	ug/kg	210	--	--	1
Azobenzene	ND	ug/kg	210	--	--	1
Fluoranthene	160	ug/kg	130	--	--	1
4-Bromophenyl phenyl ether	ND	ug/kg	210	--	--	1
Bis(2-chloroisopropyl)ether	ND	ug/kg	260	--	--	1
Bis(2-chloroethoxy)methane	ND	ug/kg	230	--	--	1
Hexachlorobutadiene	ND	ug/kg	210	--	--	1
Hexachloroethane	ND	ug/kg	170	--	--	1
Isophorone	ND	ug/kg	190	--	--	1
Naphthalene	ND	ug/kg	210	--	--	1
Nitrobenzene	ND	ug/kg	190	--	--	1
Bis(2-ethylhexyl)phthalate	ND	ug/kg	210	--	--	1
Butyl benzyl phthalate	ND	ug/kg	210	--	--	1
Di-n-butylphthalate	ND	ug/kg	210	--	--	1
Di-n-octylphthalate	ND	ug/kg	210	--	--	1
Diethyl phthalate	ND	ug/kg	210	--	--	1
Dimethyl phthalate	ND	ug/kg	210	--	--	1
Benzo(a)anthracene	ND	ug/kg	130	--	--	1
Benzo(a)pyrene	ND	ug/kg	170	--	--	1
Benzo(b)fluoranthene	170	ug/kg	130	--	--	1



Project Name: E. BOSTON

Lab Number: L1704816

Project Number: 43068

Report Date: 02/20/17

**SAMPLE RESULTS**

Lab ID:	L1704816-03	Date Collected:	02/15/17 13:30
Client ID:	VES-122 (3-5)	Date Received:	02/15/17
Sample Location:	E. BOSTON	Field Prep:	Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Semivolatile Organics - Westborough Lab</b>						
Benzo(k)fluoranthene	ND	ug/kg	130	--	--	1
Chrysene	140	ug/kg	130	--	--	1
Acenaphthylene	ND	ug/kg	170	--	--	1
Anthracene	ND	ug/kg	130	--	--	1
Benzo(ghi)perylene	ND	ug/kg	170	--	--	1
Fluorene	ND	ug/kg	210	--	--	1
Phenanthrene	ND	ug/kg	130	--	--	1
Dibenzo(a,h)anthracene	ND	ug/kg	130	--	--	1
Indeno(1,2,3-cd)pyrene	ND	ug/kg	170	--	--	1
Pyrene	170	ug/kg	130	--	--	1
Aniline	ND	ug/kg	260	--	--	1
4-Chloroaniline	ND	ug/kg	210	--	--	1
Dibenzofuran	ND	ug/kg	210	--	--	1
2-Methylnaphthalene	ND	ug/kg	260	--	--	1
Acetophenone	ND	ug/kg	210	--	--	1
2,4,6-Trichlorophenol	ND	ug/kg	130	--	--	1
2-Chlorophenol	ND	ug/kg	210	--	--	1
2,4-Dichlorophenol	ND	ug/kg	190	--	--	1
2,4-Dimethylphenol	ND	ug/kg	210	--	--	1
2-Nitrophenol	ND	ug/kg	460	--	--	1
4-Nitrophenol	ND	ug/kg	300	--	--	1
2,4-Dinitrophenol	ND	ug/kg	1000	--	--	1
Pentachlorophenol	ND	ug/kg	430	--	--	1
Phenol	ND	ug/kg	210	--	--	1
2-Methylphenol	ND	ug/kg	210	--	--	1
3-Methylphenol/4-Methylphenol	ND	ug/kg	310	--	--	1
2,4,5-Trichlorophenol	ND	ug/kg	210	--	--	1
Pyridine	ND	ug/kg	230	--	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	43		30-130
Phenol-d6	45		30-130
Nitrobenzene-d5	56		30-130
2-Fluorobiphenyl	53		30-130
2,4,6-Tribromophenol	47		30-130
4-Terphenyl-d14	44		30-130

**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704816  
**Report Date:** 02/20/17

**SAMPLE RESULTS**

Lab ID: L1704816-04  
Client ID: VES-126 (3-5)  
Sample Location: E. BOSTON  
Matrix: Soil  
Analytical Method: 97,8270D  
Analytical Date: 02/17/17 04:51  
Analyst: ALS  
Percent Solids: 76%

Date Collected: 02/15/17 12:55  
Date Received: 02/15/17  
Field Prep: Not Specified  
Extraction Method: EPA 3546  
Extraction Date: 02/15/17 21:36

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Semivolatile Organics - Westborough Lab</b>						
Acenaphthene	ND	ug/kg	170	--	--	1
1,2,4-Trichlorobenzene	ND	ug/kg	220	--	--	1
Hexachlorobenzene	ND	ug/kg	130	--	--	1
Bis(2-chloroethyl)ether	ND	ug/kg	190	--	--	1
2-Chloronaphthalene	ND	ug/kg	220	--	--	1
1,2-Dichlorobenzene	ND	ug/kg	220	--	--	1
1,3-Dichlorobenzene	ND	ug/kg	220	--	--	1
1,4-Dichlorobenzene	ND	ug/kg	220	--	--	1
3,3'-Dichlorobenzidine	ND	ug/kg	220	--	--	1
2,4-Dinitrotoluene	ND	ug/kg	220	--	--	1
2,6-Dinitrotoluene	ND	ug/kg	220	--	--	1
Azobenzene	ND	ug/kg	220	--	--	1
Fluoranthene	330	ug/kg	130	--	--	1
4-Bromophenyl phenyl ether	ND	ug/kg	220	--	--	1
Bis(2-chloroisopropyl)ether	ND	ug/kg	260	--	--	1
Bis(2-chloroethoxy)methane	ND	ug/kg	230	--	--	1
Hexachlorobutadiene	ND	ug/kg	220	--	--	1
Hexachloroethane	ND	ug/kg	170	--	--	1
Isophorone	ND	ug/kg	190	--	--	1
Naphthalene	ND	ug/kg	220	--	--	1
Nitrobenzene	ND	ug/kg	190	--	--	1
Bis(2-ethylhexyl)phthalate	ND	ug/kg	220	--	--	1
Butyl benzyl phthalate	ND	ug/kg	220	--	--	1
Di-n-butylphthalate	ND	ug/kg	220	--	--	1
Di-n-octylphthalate	ND	ug/kg	220	--	--	1
Diethyl phthalate	ND	ug/kg	220	--	--	1
Dimethyl phthalate	ND	ug/kg	220	--	--	1
Benzo(a)anthracene	260	ug/kg	130	--	--	1
Benzo(a)pyrene	240	ug/kg	170	--	--	1
Benzo(b)fluoranthene	300	ug/kg	130	--	--	1



Project Name: E. BOSTON

Lab Number: L1704816

Project Number: 43068

Report Date: 02/20/17

**SAMPLE RESULTS**

Lab ID:	L1704816-04	Date Collected:	02/15/17 12:55
Client ID:	VES-126 (3-5)	Date Received:	02/15/17
Sample Location:	E. BOSTON	Field Prep:	Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Semivolatile Organics - Westborough Lab</b>						
Benzo(k)fluoranthene	ND	ug/kg	130	--	--	1
Chrysene	280	ug/kg	130	--	--	1
Acenaphthylene	ND	ug/kg	170	--	--	1
Anthracene	ND	ug/kg	130	--	--	1
Benzo(ghi)perylene	ND	ug/kg	170	--	--	1
Fluorene	ND	ug/kg	220	--	--	1
Phenanthrene	ND	ug/kg	130	--	--	1
Dibenzo(a,h)anthracene	ND	ug/kg	130	--	--	1
Indeno(1,2,3-cd)pyrene	ND	ug/kg	170	--	--	1
Pyrene	300	ug/kg	130	--	--	1
Aniline	ND	ug/kg	260	--	--	1
4-Chloroaniline	ND	ug/kg	220	--	--	1
Dibenzofuran	ND	ug/kg	220	--	--	1
2-Methylnaphthalene	ND	ug/kg	260	--	--	1
Acetophenone	ND	ug/kg	220	--	--	1
2,4,6-Trichlorophenol	ND	ug/kg	130	--	--	1
2-Chlorophenol	ND	ug/kg	220	--	--	1
2,4-Dichlorophenol	ND	ug/kg	190	--	--	1
2,4-Dimethylphenol	ND	ug/kg	220	--	--	1
2-Nitrophenol	ND	ug/kg	460	--	--	1
4-Nitrophenol	ND	ug/kg	300	--	--	1
2,4-Dinitrophenol	ND	ug/kg	1000	--	--	1
Pentachlorophenol	ND	ug/kg	430	--	--	1
Phenol	ND	ug/kg	220	--	--	1
2-Methylphenol	ND	ug/kg	220	--	--	1
3-Methylphenol/4-Methylphenol	ND	ug/kg	310	--	--	1
2,4,5-Trichlorophenol	ND	ug/kg	220	--	--	1
Pyridine	ND	ug/kg	230	--	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	46		30-130
Phenol-d6	49		30-130
Nitrobenzene-d5	57		30-130
2-Fluorobiphenyl	54		30-130
2,4,6-Tribromophenol	47		30-130
4-Terphenyl-d14	45		30-130

**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704816  
**Report Date:** 02/20/17

**SAMPLE RESULTS**

Lab ID: L1704816-06 D  
Client ID: VES-114 (2-4)  
Sample Location: E. BOSTON  
Matrix: Soil  
Analytical Method: 97,8270D  
Analytical Date: 02/20/17 11:33  
Analyst: RC  
Percent Solids: 71%

Date Collected: 02/15/17 11:05  
Date Received: 02/15/17  
Field Prep: Not Specified  
Extraction Method: EPA 3546  
Extraction Date: 02/15/17 21:37

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Semivolatile Organics - Westborough Lab</b>						
Acenaphthene	1000	ug/kg	370	--	2	
1,2,4-Trichlorobenzene	ND	ug/kg	460	--	2	
Hexachlorobenzene	ND	ug/kg	280	--	2	
Bis(2-chloroethyl)ether	ND	ug/kg	410	--	2	
2-Chloronaphthalene	ND	ug/kg	460	--	2	
1,2-Dichlorobenzene	ND	ug/kg	460	--	2	
1,3-Dichlorobenzene	ND	ug/kg	460	--	2	
1,4-Dichlorobenzene	ND	ug/kg	460	--	2	
3,3'-Dichlorobenzidine	ND	ug/kg	460	--	2	
2,4-Dinitrotoluene	ND	ug/kg	460	--	2	
2,6-Dinitrotoluene	ND	ug/kg	460	--	2	
Azobenzene	ND	ug/kg	460	--	2	
Fluoranthene	11000	ug/kg	280	--	2	
4-Bromophenyl phenyl ether	ND	ug/kg	460	--	2	
Bis(2-chloroisopropyl)ether	ND	ug/kg	550	--	2	
Bis(2-chloroethoxy)methane	ND	ug/kg	500	--	2	
Hexachlorobutadiene	ND	ug/kg	460	--	2	
Hexachloroethane	ND	ug/kg	370	--	2	
Isophorone	ND	ug/kg	410	--	2	
Naphthalene	1400	ug/kg	460	--	2	
Nitrobenzene	ND	ug/kg	410	--	2	
Bis(2-ethylhexyl)phthalate	ND	ug/kg	460	--	2	
Butyl benzyl phthalate	ND	ug/kg	460	--	2	
Di-n-butylphthalate	ND	ug/kg	460	--	2	
Di-n-octylphthalate	ND	ug/kg	460	--	2	
Diethyl phthalate	ND	ug/kg	460	--	2	
Dimethyl phthalate	ND	ug/kg	460	--	2	
Benzo(a)anthracene	5100	ug/kg	280	--	2	
Benzo(a)pyrene	4700	ug/kg	370	--	2	
Benzo(b)fluoranthene	6000	ug/kg	280	--	2	



Project Name: E. BOSTON

Lab Number: L1704816

Project Number: 43068

Report Date: 02/20/17

**SAMPLE RESULTS**

Lab ID:	L1704816-06	D	Date Collected:	02/15/17 11:05
Client ID:	VES-114 (2-4)		Date Received:	02/15/17
Sample Location:	E. BOSTON		Field Prep:	Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Semivolatile Organics - Westborough Lab</b>						
Benzo(k)fluoranthene	2100	ug/kg	280	--	2	
Chrysene	5100	ug/kg	280	--	2	
Acenaphthylene	ND	ug/kg	370	--	2	
Anthracene	1100	ug/kg	280	--	2	
Benzo(ghi)perylene	2700	ug/kg	370	--	2	
Fluorene	860	ug/kg	460	--	2	
Phenanthrene	7800	ug/kg	280	--	2	
Dibenzo(a,h)anthracene	660	ug/kg	280	--	2	
Indeno(1,2,3-cd)pyrene	2900	ug/kg	370	--	2	
Pyrene	9600	ug/kg	280	--	2	
Aniline	ND	ug/kg	550	--	2	
4-Chloroaniline	ND	ug/kg	460	--	2	
Dibenzofuran	910	ug/kg	460	--	2	
2-Methylnaphthalene	ND	ug/kg	550	--	2	
Acetophenone	ND	ug/kg	460	--	2	
2,4,6-Trichlorophenol	ND	ug/kg	280	--	2	
2-Chlorophenol	ND	ug/kg	460	--	2	
2,4-Dichlorophenol	ND	ug/kg	410	--	2	
2,4-Dimethylphenol	ND	ug/kg	460	--	2	
2-Nitrophenol	ND	ug/kg	990	--	2	
4-Nitrophenol	ND	ug/kg	640	--	2	
2,4-Dinitrophenol	ND	ug/kg	2200	--	2	
Pentachlorophenol	ND	ug/kg	920	--	2	
Phenol	ND	ug/kg	460	--	2	
2-Methylphenol	ND	ug/kg	460	--	2	
3-Methylphenol/4-Methylphenol	ND	ug/kg	660	--	2	
2,4,5-Trichlorophenol	ND	ug/kg	460	--	2	
Pyridine	ND	ug/kg	500	--	2	

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	56		30-130
Phenol-d6	61		30-130
Nitrobenzene-d5	71		30-130
2-Fluorobiphenyl	67		30-130
2,4,6-Tribromophenol	76		30-130
4-Terphenyl-d14	58		30-130

**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704816  
**Report Date:** 02/20/17

**SAMPLE RESULTS**

Lab ID: L1704816-08 D  
Client ID: VES-115 (2-4)  
Sample Location: E. BOSTON  
Matrix: Soil  
Analytical Method: 97,8270D  
Analytical Date: 02/17/17 23:20  
Analyst: RC  
Percent Solids: 65%

Date Collected: 02/15/17 10:35  
Date Received: 02/15/17  
Field Prep: Not Specified  
Extraction Method: EPA 3546  
Extraction Date: 02/15/17 21:37

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Semivolatile Organics - Westborough Lab</b>						
Acenaphthene	ND	ug/kg	400	--	2	
1,2,4-Trichlorobenzene	ND	ug/kg	500	--	2	
Hexachlorobenzene	ND	ug/kg	300	--	2	
Bis(2-chloroethyl)ether	ND	ug/kg	450	--	2	
2-Chloronaphthalene	ND	ug/kg	500	--	2	
1,2-Dichlorobenzene	ND	ug/kg	500	--	2	
1,3-Dichlorobenzene	ND	ug/kg	500	--	2	
1,4-Dichlorobenzene	ND	ug/kg	500	--	2	
3,3'-Dichlorobenzidine	ND	ug/kg	500	--	2	
2,4-Dinitrotoluene	ND	ug/kg	500	--	2	
2,6-Dinitrotoluene	ND	ug/kg	500	--	2	
Azobenzene	ND	ug/kg	500	--	2	
Fluoranthene	430	ug/kg	300	--	2	
4-Bromophenyl phenyl ether	ND	ug/kg	500	--	2	
Bis(2-chloroisopropyl)ether	ND	ug/kg	600	--	2	
Bis(2-chloroethoxy)methane	ND	ug/kg	540	--	2	
Hexachlorobutadiene	ND	ug/kg	500	--	2	
Hexachloroethane	ND	ug/kg	400	--	2	
Isophorone	ND	ug/kg	450	--	2	
Naphthalene	ND	ug/kg	500	--	2	
Nitrobenzene	ND	ug/kg	450	--	2	
Bis(2-ethylhexyl)phthalate	ND	ug/kg	500	--	2	
Butyl benzyl phthalate	ND	ug/kg	500	--	2	
Di-n-butylphthalate	ND	ug/kg	500	--	2	
Di-n-octylphthalate	ND	ug/kg	500	--	2	
Diethyl phthalate	ND	ug/kg	500	--	2	
Dimethyl phthalate	ND	ug/kg	500	--	2	
Benzo(a)anthracene	ND	ug/kg	300	--	2	
Benzo(a)pyrene	ND	ug/kg	400	--	2	
Benzo(b)fluoranthene	ND	ug/kg	300	--	2	



Project Name: E. BOSTON

Lab Number: L1704816

Project Number: 43068

Report Date: 02/20/17

**SAMPLE RESULTS**

Lab ID:	L1704816-08	D	Date Collected:	02/15/17 10:35
Client ID:	VES-115 (2-4)		Date Received:	02/15/17
Sample Location:	E. BOSTON		Field Prep:	Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Semivolatile Organics - Westborough Lab</b>						
Benzo(k)fluoranthene	ND	ug/kg	300	--	2	
Chrysene	ND	ug/kg	300	--	2	
Acenaphthylene	ND	ug/kg	400	--	2	
Anthracene	ND	ug/kg	300	--	2	
Benzo(ghi)perylene	ND	ug/kg	400	--	2	
Fluorene	ND	ug/kg	500	--	2	
Phenanthrene	ND	ug/kg	300	--	2	
Dibenzo(a,h)anthracene	ND	ug/kg	300	--	2	
Indeno(1,2,3-cd)pyrene	ND	ug/kg	400	--	2	
Pyrene	380	ug/kg	300	--	2	
Aniline	ND	ug/kg	600	--	2	
4-Chloroaniline	ND	ug/kg	500	--	2	
Dibenzofuran	ND	ug/kg	500	--	2	
2-Methylnaphthalene	ND	ug/kg	600	--	2	
Acetophenone	ND	ug/kg	500	--	2	
2,4,6-Trichlorophenol	ND	ug/kg	300	--	2	
2-Chlorophenol	ND	ug/kg	500	--	2	
2,4-Dichlorophenol	ND	ug/kg	450	--	2	
2,4-Dimethylphenol	ND	ug/kg	500	--	2	
2-Nitrophenol	ND	ug/kg	1100	--	2	
4-Nitrophenol	ND	ug/kg	700	--	2	
2,4-Dinitrophenol	ND	ug/kg	2400	--	2	
Pentachlorophenol	ND	ug/kg	1000	--	2	
Phenol	ND	ug/kg	500	--	2	
2-Methylphenol	ND	ug/kg	500	--	2	
3-Methylphenol/4-Methylphenol	ND	ug/kg	720	--	2	
2,4,5-Trichlorophenol	ND	ug/kg	500	--	2	
Pyridine	ND	ug/kg	540	--	2	

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	52		30-130
Phenol-d6	62		30-130
Nitrobenzene-d5	66		30-130
2-Fluorobiphenyl	61		30-130
2,4,6-Tribromophenol	57		30-130
4-Terphenyl-d14	44		30-130

Project Name: E. BOSTON

Lab Number: L1704816

Project Number: 43068

Report Date: 02/20/17

**SAMPLE RESULTS**

Lab ID: L1704816-09  
 Client ID: VES-118 (22-24)  
 Sample Location: E. BOSTON  
 Matrix: Soil  
 Analytical Method: 97,8270D  
 Analytical Date: 02/17/17 06:07  
 Analyst: ALS  
 Percent Solids: 45%

Date Collected: 02/15/17 09:35  
 Date Received: 02/15/17  
 Field Prep: Not Specified  
 Extraction Method: EPA 3546  
 Extraction Date: 02/15/17 21:37

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Semivolatile Organics - Westborough Lab</b>						
Acenaphthene	ND	ug/kg	440	--	--	1
1,2,4-Trichlorobenzene	ND	ug/kg	560	--	--	1
Hexachlorobenzene	ND	ug/kg	330	--	--	1
Bis(2-chloroethyl)ether	ND	ug/kg	500	--	--	1
2-Chloronaphthalene	ND	ug/kg	560	--	--	1
1,2-Dichlorobenzene	ND	ug/kg	560	--	--	1
1,3-Dichlorobenzene	ND	ug/kg	560	--	--	1
1,4-Dichlorobenzene	ND	ug/kg	560	--	--	1
3,3'-Dichlorobenzidine	ND	ug/kg	560	--	--	1
2,4-Dinitrotoluene	ND	ug/kg	560	--	--	1
2,6-Dinitrotoluene	ND	ug/kg	560	--	--	1
Azobenzene	ND	ug/kg	560	--	--	1
Fluoranthene	1700	ug/kg	330	--	--	1
4-Bromophenyl phenyl ether	ND	ug/kg	560	--	--	1
Bis(2-chloroisopropyl)ether	ND	ug/kg	670	--	--	1
Bis(2-chloroethoxy)methane	ND	ug/kg	600	--	--	1
Hexachlorobutadiene	ND	ug/kg	560	--	--	1
Hexachloroethane	ND	ug/kg	440	--	--	1
Isophorone	ND	ug/kg	500	--	--	1
Naphthalene	ND	ug/kg	560	--	--	1
Nitrobenzene	ND	ug/kg	500	--	--	1
Bis(2-ethylhexyl)phthalate	ND	ug/kg	560	--	--	1
Butyl benzyl phthalate	ND	ug/kg	560	--	--	1
Di-n-butylphthalate	ND	ug/kg	560	--	--	1
Di-n-octylphthalate	ND	ug/kg	560	--	--	1
Diethyl phthalate	ND	ug/kg	560	--	--	1
Dimethyl phthalate	ND	ug/kg	560	--	--	1
Benzo(a)anthracene	960	ug/kg	330	--	--	1
Benzo(a)pyrene	1100	ug/kg	440	--	--	1
Benzo(b)fluoranthene	1300	ug/kg	330	--	--	1



Project Name: E. BOSTON

Lab Number: L1704816

Project Number: 43068

Report Date: 02/20/17

**SAMPLE RESULTS**

Lab ID:	L1704816-09	Date Collected:	02/15/17 09:35
Client ID:	VES-118 (22-24)	Date Received:	02/15/17
Sample Location:	E. BOSTON	Field Prep:	Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Semivolatile Organics - Westborough Lab</b>						
Benzo(k)fluoranthene	400	ug/kg	330	--	--	1
Chrysene	1100	ug/kg	330	--	--	1
Acenaphthylene	ND	ug/kg	440	--	--	1
Anthracene	ND	ug/kg	330	--	--	1
Benzo(ghi)perylene	700	ug/kg	440	--	--	1
Fluorene	ND	ug/kg	560	--	--	1
Phenanthrene	1100	ug/kg	330	--	--	1
Dibenzo(a,h)anthracene	ND	ug/kg	330	--	--	1
Indeno(1,2,3-cd)pyrene	680	ug/kg	440	--	--	1
Pyrene	1700	ug/kg	330	--	--	1
Aniline	ND	ug/kg	670	--	--	1
4-Chloroaniline	ND	ug/kg	560	--	--	1
Dibenzofuran	ND	ug/kg	560	--	--	1
2-Methylnaphthalene	ND	ug/kg	670	--	--	1
Acetophenone	ND	ug/kg	560	--	--	1
2,4,6-Trichlorophenol	ND	ug/kg	330	--	--	1
2-Chlorophenol	ND	ug/kg	560	--	--	1
2,4-Dichlorophenol	ND	ug/kg	500	--	--	1
2,4-Dimethylphenol	ND	ug/kg	560	--	--	1
2-Nitrophenol	ND	ug/kg	1200	--	--	1
4-Nitrophenol	ND	ug/kg	780	--	--	1
2,4-Dinitrophenol	ND	ug/kg	2700	--	--	1
Pentachlorophenol	ND	ug/kg	1100	--	--	1
Phenol	ND	ug/kg	560	--	--	1
2-Methylphenol	ND	ug/kg	560	--	--	1
3-Methylphenol/4-Methylphenol	ND	ug/kg	800	--	--	1
2,4,5-Trichlorophenol	ND	ug/kg	560	--	--	1
Pyridine	ND	ug/kg	600	--	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	46		30-130
Phenol-d6	52		30-130
Nitrobenzene-d5	52		30-130
2-Fluorobiphenyl	53		30-130
2,4,6-Tribromophenol	45		30-130
4-Terphenyl-d14	46		30-130

**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704816  
**Report Date:** 02/20/17

**SAMPLE RESULTS**

Lab ID: L1704816-11  
Client ID: VES-118 (2-4)  
Sample Location: E. BOSTON  
Matrix: Soil  
Analytical Method: 97,8270D  
Analytical Date: 02/17/17 06:32  
Analyst: ALS  
Percent Solids: 80%

Date Collected: 02/15/17 09:10  
Date Received: 02/15/17  
Field Prep: Not Specified  
Extraction Method: EPA 3546  
Extraction Date: 02/15/17 21:37

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Semivolatile Organics - Westborough Lab</b>						
Acenaphthene	ND	ug/kg	160	--	--	1
1,2,4-Trichlorobenzene	ND	ug/kg	200	--	--	1
Hexachlorobenzene	ND	ug/kg	120	--	--	1
Bis(2-chloroethyl)ether	ND	ug/kg	180	--	--	1
2-Chloronaphthalene	ND	ug/kg	200	--	--	1
1,2-Dichlorobenzene	ND	ug/kg	200	--	--	1
1,3-Dichlorobenzene	ND	ug/kg	200	--	--	1
1,4-Dichlorobenzene	ND	ug/kg	200	--	--	1
3,3'-Dichlorobenzidine	ND	ug/kg	200	--	--	1
2,4-Dinitrotoluene	ND	ug/kg	200	--	--	1
2,6-Dinitrotoluene	ND	ug/kg	200	--	--	1
Azobenzene	ND	ug/kg	200	--	--	1
Fluoranthene	1700	ug/kg	120	--	--	1
4-Bromophenyl phenyl ether	ND	ug/kg	200	--	--	1
Bis(2-chloroisopropyl)ether	ND	ug/kg	240	--	--	1
Bis(2-chloroethoxy)methane	ND	ug/kg	220	--	--	1
Hexachlorobutadiene	ND	ug/kg	200	--	--	1
Hexachloroethane	ND	ug/kg	160	--	--	1
Isophorone	ND	ug/kg	180	--	--	1
Naphthalene	ND	ug/kg	200	--	--	1
Nitrobenzene	ND	ug/kg	180	--	--	1
Bis(2-ethylhexyl)phthalate	ND	ug/kg	200	--	--	1
Butyl benzyl phthalate	ND	ug/kg	200	--	--	1
Di-n-butylphthalate	ND	ug/kg	200	--	--	1
Di-n-octylphthalate	ND	ug/kg	200	--	--	1
Diethyl phthalate	ND	ug/kg	200	--	--	1
Dimethyl phthalate	ND	ug/kg	200	--	--	1
Benzo(a)anthracene	900	ug/kg	120	--	--	1
Benzo(a)pyrene	910	ug/kg	160	--	--	1
Benzo(b)fluoranthene	1100	ug/kg	120	--	--	1



Project Name: E. BOSTON

Lab Number: L1704816

Project Number: 43068

Report Date: 02/20/17

**SAMPLE RESULTS**

Lab ID:	L1704816-11	Date Collected:	02/15/17 09:10
Client ID:	VES-118 (2-4)	Date Received:	02/15/17
Sample Location:	E. BOSTON	Field Prep:	Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Semivolatile Organics - Westborough Lab</b>						
Benzo(k)fluoranthene	380	ug/kg	120	--	--	1
Chrysene	990	ug/kg	120	--	--	1
Acenaphthylene	ND	ug/kg	160	--	--	1
Anthracene	250	ug/kg	120	--	--	1
Benzo(ghi)perylene	570	ug/kg	160	--	--	1
Fluorene	ND	ug/kg	200	--	--	1
Phenanthrene	880	ug/kg	120	--	--	1
Dibenzo(a,h)anthracene	150	ug/kg	120	--	--	1
Indeno(1,2,3-cd)pyrene	570	ug/kg	160	--	--	1
Pyrene	1600	ug/kg	120	--	--	1
Aniline	ND	ug/kg	240	--	--	1
4-Chloroaniline	ND	ug/kg	200	--	--	1
Dibenzofuran	ND	ug/kg	200	--	--	1
2-Methylnaphthalene	ND	ug/kg	240	--	--	1
Acetophenone	ND	ug/kg	200	--	--	1
2,4,6-Trichlorophenol	ND	ug/kg	120	--	--	1
2-Chlorophenol	ND	ug/kg	200	--	--	1
2,4-Dichlorophenol	ND	ug/kg	180	--	--	1
2,4-Dimethylphenol	ND	ug/kg	200	--	--	1
2-Nitrophenol	ND	ug/kg	440	--	--	1
4-Nitrophenol	ND	ug/kg	290	--	--	1
2,4-Dinitrophenol	ND	ug/kg	980	--	--	1
Pentachlorophenol	ND	ug/kg	410	--	--	1
Phenol	ND	ug/kg	200	--	--	1
2-Methylphenol	ND	ug/kg	200	--	--	1
3-Methylphenol/4-Methylphenol	ND	ug/kg	290	--	--	1
2,4,5-Trichlorophenol	ND	ug/kg	200	--	--	1
Pyridine	ND	ug/kg	220	--	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	48		30-130
Phenol-d6	52		30-130
Nitrobenzene-d5	56		30-130
2-Fluorobiphenyl	54		30-130
2,4,6-Tribromophenol	51		30-130
4-Terphenyl-d14	48		30-130

Project Name: E. BOSTON

Lab Number: L1704816

Project Number: 43068

Report Date: 02/20/17

**SAMPLE RESULTS**

Lab ID: L1704816-12  
 Client ID: VES-127 (18-20)  
 Sample Location: E. BOSTON  
 Matrix: Soil  
 Analytical Method: 97,8270D  
 Analytical Date: 02/17/17 06:57  
 Analyst: ALS  
 Percent Solids: 72%

Date Collected: 02/15/17 08:40  
 Date Received: 02/15/17  
 Field Prep: Not Specified  
 Extraction Method: EPA 3546  
 Extraction Date: 02/15/17 21:37

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Semivolatile Organics - Westborough Lab</b>						
Acenaphthene	ND	ug/kg	180	--	--	1
1,2,4-Trichlorobenzene	ND	ug/kg	230	--	--	1
Hexachlorobenzene	ND	ug/kg	140	--	--	1
Bis(2-chloroethyl)ether	ND	ug/kg	200	--	--	1
2-Chloronaphthalene	ND	ug/kg	230	--	--	1
1,2-Dichlorobenzene	ND	ug/kg	230	--	--	1
1,3-Dichlorobenzene	ND	ug/kg	230	--	--	1
1,4-Dichlorobenzene	ND	ug/kg	230	--	--	1
3,3'-Dichlorobenzidine	ND	ug/kg	230	--	--	1
2,4-Dinitrotoluene	ND	ug/kg	230	--	--	1
2,6-Dinitrotoluene	ND	ug/kg	230	--	--	1
Azobenzene	ND	ug/kg	230	--	--	1
Fluoranthene	ND	ug/kg	140	--	--	1
4-Bromophenyl phenyl ether	ND	ug/kg	230	--	--	1
Bis(2-chloroisopropyl)ether	ND	ug/kg	270	--	--	1
Bis(2-chloroethoxy)methane	ND	ug/kg	240	--	--	1
Hexachlorobutadiene	ND	ug/kg	230	--	--	1
Hexachloroethane	ND	ug/kg	180	--	--	1
Isophorone	ND	ug/kg	200	--	--	1
Naphthalene	ND	ug/kg	230	--	--	1
Nitrobenzene	ND	ug/kg	200	--	--	1
Bis(2-ethylhexyl)phthalate	ND	ug/kg	230	--	--	1
Butyl benzyl phthalate	ND	ug/kg	230	--	--	1
Di-n-butylphthalate	ND	ug/kg	230	--	--	1
Di-n-octylphthalate	ND	ug/kg	230	--	--	1
Diethyl phthalate	ND	ug/kg	230	--	--	1
Dimethyl phthalate	ND	ug/kg	230	--	--	1
Benzo(a)anthracene	ND	ug/kg	140	--	--	1
Benzo(a)pyrene	ND	ug/kg	180	--	--	1
Benzo(b)fluoranthene	ND	ug/kg	140	--	--	1



Project Name: E. BOSTON

Lab Number: L1704816

Project Number: 43068

Report Date: 02/20/17

**SAMPLE RESULTS**

Lab ID: L1704816-12 Date Collected: 02/15/17 08:40  
 Client ID: VES-127 (18-20) Date Received: 02/15/17  
 Sample Location: E. BOSTON Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Semivolatile Organics - Westborough Lab</b>						
Benzo(k)fluoranthene	ND	ug/kg	140	--	--	1
Chrysene	ND	ug/kg	140	--	--	1
Acenaphthylene	ND	ug/kg	180	--	--	1
Anthracene	ND	ug/kg	140	--	--	1
Benzo(ghi)perylene	ND	ug/kg	180	--	--	1
Fluorene	ND	ug/kg	230	--	--	1
Phenanthrene	ND	ug/kg	140	--	--	1
Dibenzo(a,h)anthracene	ND	ug/kg	140	--	--	1
Indeno(1,2,3-cd)pyrene	ND	ug/kg	180	--	--	1
Pyrene	ND	ug/kg	140	--	--	1
Aniline	ND	ug/kg	270	--	--	1
4-Chloroaniline	ND	ug/kg	230	--	--	1
Dibenzofuran	ND	ug/kg	230	--	--	1
2-Methylnaphthalene	ND	ug/kg	270	--	--	1
Acetophenone	ND	ug/kg	230	--	--	1
2,4,6-Trichlorophenol	ND	ug/kg	140	--	--	1
2-Chlorophenol	ND	ug/kg	230	--	--	1
2,4-Dichlorophenol	ND	ug/kg	200	--	--	1
2,4-Dimethylphenol	ND	ug/kg	230	--	--	1
2-Nitrophenol	ND	ug/kg	490	--	--	1
4-Nitrophenol	ND	ug/kg	320	--	--	1
2,4-Dinitrophenol	ND	ug/kg	1100	--	--	1
Pentachlorophenol	ND	ug/kg	450	--	--	1
Phenol	ND	ug/kg	230	--	--	1
2-Methylphenol	ND	ug/kg	230	--	--	1
3-Methylphenol/4-Methylphenol	ND	ug/kg	330	--	--	1
2,4,5-Trichlorophenol	ND	ug/kg	230	--	--	1
Pyridine	ND	ug/kg	240	--	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	54		30-130
Phenol-d6	58		30-130
Nitrobenzene-d5	60		30-130
2-Fluorobiphenyl	59		30-130
2,4,6-Tribromophenol	54		30-130
4-Terphenyl-d14	56		30-130

**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704816  
**Report Date:** 02/20/17

**SAMPLE RESULTS**

Lab ID: L1704816-14  
Client ID: VES-127 (2-4)  
Sample Location: E. BOSTON  
Matrix: Soil  
Analytical Method: 97,8270D  
Analytical Date: 02/17/17 07:23  
Analyst: ALS  
Percent Solids: 72%

Date Collected: 02/15/17 08:30  
Date Received: 02/15/17  
Field Prep: Not Specified  
Extraction Method: EPA 3546  
Extraction Date: 02/15/17 21:37

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Semivolatile Organics - Westborough Lab</b>						
Acenaphthene	ND	ug/kg	180	--	--	1
1,2,4-Trichlorobenzene	ND	ug/kg	230	--	--	1
Hexachlorobenzene	ND	ug/kg	140	--	--	1
Bis(2-chloroethyl)ether	ND	ug/kg	200	--	--	1
2-Chloronaphthalene	ND	ug/kg	230	--	--	1
1,2-Dichlorobenzene	ND	ug/kg	230	--	--	1
1,3-Dichlorobenzene	ND	ug/kg	230	--	--	1
1,4-Dichlorobenzene	ND	ug/kg	230	--	--	1
3,3'-Dichlorobenzidine	ND	ug/kg	230	--	--	1
2,4-Dinitrotoluene	ND	ug/kg	230	--	--	1
2,6-Dinitrotoluene	ND	ug/kg	230	--	--	1
Azobenzene	ND	ug/kg	230	--	--	1
Fluoranthene	370	ug/kg	140	--	--	1
4-Bromophenyl phenyl ether	ND	ug/kg	230	--	--	1
Bis(2-chloroisopropyl)ether	ND	ug/kg	270	--	--	1
Bis(2-chloroethoxy)methane	ND	ug/kg	240	--	--	1
Hexachlorobutadiene	ND	ug/kg	230	--	--	1
Hexachloroethane	ND	ug/kg	180	--	--	1
Isophorone	ND	ug/kg	200	--	--	1
Naphthalene	ND	ug/kg	230	--	--	1
Nitrobenzene	ND	ug/kg	200	--	--	1
Bis(2-ethylhexyl)phthalate	ND	ug/kg	230	--	--	1
Butyl benzyl phthalate	ND	ug/kg	230	--	--	1
Di-n-butylphthalate	ND	ug/kg	230	--	--	1
Di-n-octylphthalate	ND	ug/kg	230	--	--	1
Diethyl phthalate	ND	ug/kg	230	--	--	1
Dimethyl phthalate	ND	ug/kg	230	--	--	1
Benzo(a)anthracene	230	ug/kg	140	--	--	1
Benzo(a)pyrene	260	ug/kg	180	--	--	1
Benzo(b)fluoranthene	320	ug/kg	140	--	--	1



Project Name: E. BOSTON

Lab Number: L1704816

Project Number: 43068

Report Date: 02/20/17

**SAMPLE RESULTS**

Lab ID:	L1704816-14	Date Collected:	02/15/17 08:30
Client ID:	VES-127 (2-4)	Date Received:	02/15/17
Sample Location:	E. BOSTON	Field Prep:	Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Semivolatile Organics - Westborough Lab</b>						
Benzo(k)fluoranthene	ND	ug/kg	140	--	--	1
Chrysene	260	ug/kg	140	--	--	1
Acenaphthylene	ND	ug/kg	180	--	--	1
Anthracene	ND	ug/kg	140	--	--	1
Benzo(ghi)perylene	ND	ug/kg	180	--	--	1
Fluorene	ND	ug/kg	230	--	--	1
Phenanthrene	200	ug/kg	140	--	--	1
Dibenzo(a,h)anthracene	ND	ug/kg	140	--	--	1
Indeno(1,2,3-cd)pyrene	ND	ug/kg	180	--	--	1
Pyrene	350	ug/kg	140	--	--	1
Aniline	ND	ug/kg	270	--	--	1
4-Chloroaniline	ND	ug/kg	230	--	--	1
Dibenzofuran	ND	ug/kg	230	--	--	1
2-Methylnaphthalene	ND	ug/kg	270	--	--	1
Acetophenone	ND	ug/kg	230	--	--	1
2,4,6-Trichlorophenol	ND	ug/kg	140	--	--	1
2-Chlorophenol	ND	ug/kg	230	--	--	1
2,4-Dichlorophenol	ND	ug/kg	200	--	--	1
2,4-Dimethylphenol	ND	ug/kg	230	--	--	1
2-Nitrophenol	ND	ug/kg	490	--	--	1
4-Nitrophenol	ND	ug/kg	320	--	--	1
2,4-Dinitrophenol	ND	ug/kg	1100	--	--	1
Pentachlorophenol	ND	ug/kg	450	--	--	1
Phenol	ND	ug/kg	230	--	--	1
2-Methylphenol	ND	ug/kg	230	--	--	1
3-Methylphenol/4-Methylphenol	ND	ug/kg	330	--	--	1
2,4,5-Trichlorophenol	ND	ug/kg	230	--	--	1
Pyridine	ND	ug/kg	240	--	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	41		30-130
Phenol-d6	43		30-130
Nitrobenzene-d5	51		30-130
2-Fluorobiphenyl	46		30-130
2,4,6-Tribromophenol	42		30-130
4-Terphenyl-d14	37		30-130

**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704816  
**Report Date:** 02/20/17

**SAMPLE RESULTS**

Lab ID: L1704816-15  
Client ID: VES-106 (10-12)  
Sample Location: E. BOSTON  
Matrix: Soil  
Analytical Method: 97,8270D  
Analytical Date: 02/17/17 07:48  
Analyst: ALS  
Percent Solids: 56%

Date Collected: 02/15/17 10:00  
Date Received: 02/15/17  
Field Prep: Not Specified  
Extraction Method: EPA 3546  
Extraction Date: 02/15/17 21:37

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Semivolatile Organics - Westborough Lab</b>						
Acenaphthene	ND		ug/kg	240	--	1
1,2,4-Trichlorobenzene	ND		ug/kg	300	--	1
Hexachlorobenzene	ND		ug/kg	180	--	1
Bis(2-chloroethyl)ether	ND		ug/kg	270	--	1
2-Chloronaphthalene	ND		ug/kg	300	--	1
1,2-Dichlorobenzene	ND		ug/kg	300	--	1
1,3-Dichlorobenzene	ND		ug/kg	300	--	1
1,4-Dichlorobenzene	ND		ug/kg	300	--	1
3,3'-Dichlorobenzidine	ND		ug/kg	300	--	1
2,4-Dinitrotoluene	ND		ug/kg	300	--	1
2,6-Dinitrotoluene	ND		ug/kg	300	--	1
Azobenzene	ND		ug/kg	300	--	1
Fluoranthene	ND		ug/kg	180	--	1
4-Bromophenyl phenyl ether	ND		ug/kg	300	--	1
Bis(2-chloroisopropyl)ether	ND		ug/kg	360	--	1
Bis(2-chloroethoxy)methane	ND		ug/kg	320	--	1
Hexachlorobutadiene	ND		ug/kg	300	--	1
Hexachloroethane	ND		ug/kg	240	--	1
Isophorone	ND		ug/kg	270	--	1
Naphthalene	ND		ug/kg	300	--	1
Nitrobenzene	ND		ug/kg	270	--	1
Bis(2-ethylhexyl)phthalate	ND		ug/kg	300	--	1
Butyl benzyl phthalate	ND		ug/kg	300	--	1
Di-n-butylphthalate	ND		ug/kg	300	--	1
Di-n-octylphthalate	ND		ug/kg	300	--	1
Diethyl phthalate	ND		ug/kg	300	--	1
Dimethyl phthalate	ND		ug/kg	300	--	1
Benzo(a)anthracene	ND		ug/kg	180	--	1
Benzo(a)pyrene	ND		ug/kg	240	--	1
Benzo(b)fluoranthene	ND		ug/kg	180	--	1



Project Name: E. BOSTON

Lab Number: L1704816

Project Number: 43068

Report Date: 02/20/17

**SAMPLE RESULTS**

Lab ID:	L1704816-15	Date Collected:	02/15/17 10:00
Client ID:	VES-106 (10-12)	Date Received:	02/15/17
Sample Location:	E. BOSTON	Field Prep:	Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Semivolatile Organics - Westborough Lab</b>						
Benzo(k)fluoranthene	ND	ug/kg	180	--	--	1
Chrysene	ND	ug/kg	180	--	--	1
Acenaphthylene	ND	ug/kg	240	--	--	1
Anthracene	ND	ug/kg	180	--	--	1
Benzo(ghi)perylene	ND	ug/kg	240	--	--	1
Fluorene	ND	ug/kg	300	--	--	1
Phenanthrene	ND	ug/kg	180	--	--	1
Dibenzo(a,h)anthracene	ND	ug/kg	180	--	--	1
Indeno(1,2,3-cd)pyrene	ND	ug/kg	240	--	--	1
Pyrene	ND	ug/kg	180	--	--	1
Aniline	ND	ug/kg	360	--	--	1
4-Chloroaniline	ND	ug/kg	300	--	--	1
Dibenzofuran	ND	ug/kg	300	--	--	1
2-Methylnaphthalene	ND	ug/kg	360	--	--	1
Acetophenone	ND	ug/kg	300	--	--	1
2,4,6-Trichlorophenol	ND	ug/kg	180	--	--	1
2-Chlorophenol	ND	ug/kg	300	--	--	1
2,4-Dichlorophenol	ND	ug/kg	270	--	--	1
2,4-Dimethylphenol	ND	ug/kg	300	--	--	1
2-Nitrophenol	ND	ug/kg	640	--	--	1
4-Nitrophenol	ND	ug/kg	420	--	--	1
2,4-Dinitrophenol	ND	ug/kg	1400	--	--	1
Pentachlorophenol	ND	ug/kg	590	--	--	1
Phenol	850	ug/kg	300	--	--	1
2-Methylphenol	ND	ug/kg	300	--	--	1
3-Methylphenol/4-Methylphenol	ND	ug/kg	430	--	--	1
2,4,5-Trichlorophenol	ND	ug/kg	300	--	--	1
Pyridine	ND	ug/kg	320	--	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	64		30-130
Phenol-d6	68		30-130
Nitrobenzene-d5	71		30-130
2-Fluorobiphenyl	70		30-130
2,4,6-Tribromophenol	65		30-130
4-Terphenyl-d14	65		30-130

**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704816  
**Report Date:** 02/20/17

### Method Blank Analysis Batch Quality Control

Analytical Method: 97,8270D  
Analytical Date: 02/16/17 22:56  
Analyst: SZ

Extraction Method: EPA 3546  
Extraction Date: 02/15/17 21:36

Parameter	Result	Qualifier	Units	RL	MDL
MCP Semivolatile Organics - Westborough Lab for sample(s): 01-04,06,08-09,11-12,14-15 Batch: WG978216-1					
Acenaphthene	ND		ug/kg	130	--
1,2,4-Trichlorobenzene	ND		ug/kg	160	--
Hexachlorobenzene	ND		ug/kg	98	--
Bis(2-chloroethyl)ether	ND		ug/kg	150	--
2-Chloronaphthalene	ND		ug/kg	160	--
1,2-Dichlorobenzene	ND		ug/kg	160	--
1,3-Dichlorobenzene	ND		ug/kg	160	--
1,4-Dichlorobenzene	ND		ug/kg	160	--
3,3'-Dichlorobenzidine	ND		ug/kg	160	--
2,4-Dinitrotoluene	ND		ug/kg	160	--
2,6-Dinitrotoluene	ND		ug/kg	160	--
Azobenzene	ND		ug/kg	160	--
Fluoranthene	ND		ug/kg	98	--
4-Bromophenyl phenyl ether	ND		ug/kg	160	--
Bis(2-chloroisopropyl)ether	ND		ug/kg	200	--
Bis(2-chloroethoxy)methane	ND		ug/kg	180	--
Hexachlorobutadiene	ND		ug/kg	160	--
Hexachloroethane	ND		ug/kg	130	--
Isophorone	ND		ug/kg	150	--
Naphthalene	ND		ug/kg	160	--
Nitrobenzene	ND		ug/kg	150	--
Bis(2-ethylhexyl)phthalate	ND		ug/kg	160	--
Butyl benzyl phthalate	ND		ug/kg	160	--
Di-n-butylphthalate	ND		ug/kg	160	--
Di-n-octylphthalate	ND		ug/kg	160	--
Diethyl phthalate	ND		ug/kg	160	--
Dimethyl phthalate	ND		ug/kg	160	--
Benzo(a)anthracene	ND		ug/kg	98	--
Benzo(a)pyrene	ND		ug/kg	130	--



**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704816  
**Report Date:** 02/20/17

### Method Blank Analysis Batch Quality Control

Analytical Method: 97,8270D  
Analytical Date: 02/16/17 22:56  
Analyst: SZ

Extraction Method: EPA 3546  
Extraction Date: 02/15/17 21:36

Parameter	Result	Qualifier	Units	RL	MDL
MCP Semivolatile Organics - Westborough Lab for sample(s): 01-04,06,08-09,11-12,14-15 Batch: WG978216-1					
Benzo(b)fluoranthene	ND		ug/kg	98	--
Benzo(k)fluoranthene	ND		ug/kg	98	--
Chrysene	ND		ug/kg	98	--
Acenaphthylene	ND		ug/kg	130	--
Anthracene	ND		ug/kg	98	--
Benzo(ghi)perylene	ND		ug/kg	130	--
Fluorene	ND		ug/kg	160	--
Phenanthrene	ND		ug/kg	98	--
Dibenzo(a,h)anthracene	ND		ug/kg	98	--
Indeno(1,2,3-cd)pyrene	ND		ug/kg	130	--
Pyrene	ND		ug/kg	98	--
Aniline	ND		ug/kg	200	--
4-Chloroaniline	ND		ug/kg	160	--
Dibenzofuran	ND		ug/kg	160	--
2-Methylnaphthalene	ND		ug/kg	200	--
Acetophenone	ND		ug/kg	160	--
2,4,6-Trichlorophenol	ND		ug/kg	98	--
2-Chlorophenol	ND		ug/kg	160	--
2,4-Dichlorophenol	ND		ug/kg	150	--
2,4-Dimethylphenol	ND		ug/kg	160	--
2-Nitrophenol	ND		ug/kg	350	--
4-Nitrophenol	ND		ug/kg	230	--
2,4-Dinitrophenol	ND		ug/kg	780	--
Pentachlorophenol	ND		ug/kg	320	--
Phenol	ND		ug/kg	160	--
2-Methylphenol	ND		ug/kg	160	--
3-Methylphenol/4-Methylphenol	ND		ug/kg	230	--
2,4,5-Trichlorophenol	ND		ug/kg	160	--
Pyridine	ND		ug/kg	180	--



**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704816  
**Report Date:** 02/20/17

### Method Blank Analysis Batch Quality Control

Analytical Method: 97,8270D  
Analytical Date: 02/16/17 22:56  
Analyst: SZ

Extraction Method: EPA 3546  
Extraction Date: 02/15/17 21:36

Parameter	Result	Qualifier	Units	RL	MDL
MCP Semivolatile Organics - Westborough Lab for sample(s): 01-04,06,08-09,11-12,14-15 Batch: WG978216-1					

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	54		30-130
Phenol-d6	57		30-130
Nitrobenzene-d5	59		30-130
2-Fluorobiphenyl	56		30-130
2,4,6-Tribromophenol	46		30-130
4-Terphenyl-d14	53		30-130

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704816  
**Report Date:** 02/20/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Semivolatile Organics - Westborough Lab Associated sample(s): 01-04,06,08-09,11-12,14-15 Batch: WG978216-2 WG978216-3								
Acenaphthene	49		48		40-140	2		30
1,2,4-Trichlorobenzene	52		49		40-140	6		30
Hexachlorobenzene	49		46		40-140	6		30
Bis(2-chloroethyl)ether	51		48		40-140	6		30
2-Chloronaphthalene	54		53		40-140	2		30
1,2-Dichlorobenzene	50		47		40-140	6		30
1,3-Dichlorobenzene	48		46		40-140	4		30
1,4-Dichlorobenzene	50		48		40-140	4		30
3,3'-Dichlorobenzidine	34	Q	32	Q	40-140	6		30
2,4-Dinitrotoluene	52		51		40-140	2		30
2,6-Dinitrotoluene	56		55		40-140	2		30
Azobenzene	53		51		40-140	4		30
Fluoranthene	52		49		40-140	6		30
4-Bromophenyl phenyl ether	52		51		40-140	2		30
Bis(2-chloroisopropyl)ether	73		68		40-140	7		30
Bis(2-chloroethoxy)methane	53		50		40-140	6		30
Hexachlorobutadiene	54		53		40-140	2		30
Hexachloroethane	51		48		40-140	6		30
Isophorone	59		56		40-140	5		30
Naphthalene	49		48		40-140	2		30
Nitrobenzene	56		53		40-140	6		30

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704816  
**Report Date:** 02/20/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Semivolatile Organics - Westborough Lab Associated sample(s): 01-04,06,08-09,11-12,14-15 Batch: WG978216-2 WG978216-3								
Bis(2-ethylhexyl)phthalate	50		47		40-140	6		30
Butyl benzyl phthalate	52		48		40-140	8		30
Di-n-butylphthalate	52		49		40-140	6		30
Di-n-octylphthalate	50		48		40-140	4		30
Diethyl phthalate	50		48		40-140	4		30
Dimethyl phthalate	56		54		40-140	4		30
Benzo(a)anthracene	49		47		40-140	4		30
Benzo(a)pyrene	51		49		40-140	4		30
Benzo(b)fluoranthene	50		49		40-140	2		30
Benzo(k)fluoranthene	48		47		40-140	2		30
Chrysene	50		48		40-140	4		30
Acenaphthylene	54		53		40-140	2		30
Anthracene	52		50		40-140	4		30
Benzo(ghi)perylene	50		48		40-140	4		30
Fluorene	51		49		40-140	4		30
Phenanthrene	50		48		40-140	4		30
Dibenz(a,h)anthracene	50		47		40-140	6		30
Indeno(1,2,3-cd)pyrene	51		48		40-140	6		30
Pyrene	52		50		40-140	4		30
Aniline	28	Q	26	Q	40-140	7		30
4-Chloroaniline	43		47		40-140	9		30

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704816  
**Report Date:** 02/20/17

<b>Parameter</b>	<i>LCS</i> <i>%Recovery</i>	<i>Qual</i>	<i>LCSD</i> <i>%Recovery</i>	<i>Qual</i>	<i>%Recovery</i> <i>Limits</i>	<i>RPD</i>	<i>Qual</i>	<i>RPD</i> <i>Limits</i>
MCP Semivolatile Organics - Westborough Lab Associated sample(s): 01-04,06,08-09,11-12,14-15 Batch: WG978216-2 WG978216-3								
Dibenzofuran	50		48		40-140	4		30
2-Methylnaphthalene	50		48		40-140	4		30
Acetophenone	56		54		40-140	4		30
2,4,6-Trichlorophenol	59		58		30-130	2		30
2-Chlorophenol	52		49		30-130	6		30
2,4-Dichlorophenol	57		55		30-130	4		30
2,4-Dimethylphenol	60		58		30-130	3		30
2-Nitrophenol	51		49		30-130	4		30
4-Nitrophenol	65		63		30-130	3		30
2,4-Dinitrophenol	25	Q	26	Q	30-130	4		30
Pentachlorophenol	44		41		30-130	7		30
Phenol	51		48		30-130	6		30
2-Methylphenol	57		54		30-130	5		30
3-Methylphenol/4-Methylphenol	55		52		30-130	6		30
2,4,5-Trichlorophenol	60		58		30-130	3		30
Pyridine	40		39		30-130	3		30

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704816  
**Report Date:** 02/20/17

<b>Parameter</b>	<i>LCS</i> <i>%Recovery</i>	<i>Qual</i>	<i>LCSD</i> <i>%Recovery</i>	<i>Qual</i>	<i>%Recovery</i> <i>Limits</i>	<i>RPD</i>	<i>Qual</i>	<i>RPD</i> <i>Limits</i>
MCP Semivolatile Organics - Westborough Lab Associated sample(s): 01-04,06,08-09,11-12,14-15 Batch: WG978216-2 WG978216-3								
<b>Surrogate</b>	<i>LCS</i> <i>%Recovery</i>	<i>Qual</i>	<i>LCSD</i> <i>%Recovery</i>	<i>Qual</i>	<i>Acceptance</i> <i>Criteria</i>			
2-Fluorophenol	53		49		30-130			
Phenol-d6	56		52		30-130			
Nitrobenzene-d5	57		53		30-130			
2-Fluorobiphenyl	55		51		30-130			
2,4,6-Tribromophenol	49		44		30-130			
4-Terphenyl-d14	51		46		30-130			

# **PETROLEUM HYDROCARBONS**



**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704816  
**Report Date:** 02/20/17

### SAMPLE RESULTS

Lab ID:	L1704816-01	Date Collected:	02/15/17 14:25
Client ID:	VES-113 (2-4)	Date Received:	02/15/17
Sample Location:	E. BOSTON	Field Prep:	Not Specified
Matrix:	Soil		
Analytical Method:	100,VPH-04-1.1		
Analytical Date:	02/16/17 15:47		
Analyst:	JM		
Percent Solids:	83%		

### Quality Control Information

Condition of sample received:	Satisfactory
Sample Temperature upon receipt:	Received on Ice
Were samples received in methanol?	Yes (Covering the Soil)
Methanol ratio:	1:1.4

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>Volatile Petroleum Hydrocarbons - Westborough Lab</b>						
C5-C8 Aliphatics	ND		mg/kg	2.81	--	1
C9-C12 Aliphatics	ND		mg/kg	2.81	--	1
C9-C10 Aromatics	ND		mg/kg	2.81	--	1
C5-C8 Aliphatics, Adjusted	ND		mg/kg	2.81	--	1
C9-C12 Aliphatics, Adjusted	ND		mg/kg	2.81	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2,5-Dibromotoluene-PID	118		70-130
2,5-Dibromotoluene-FID	121		70-130

**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704816  
**Report Date:** 02/20/17

### SAMPLE RESULTS

Lab ID:	L1704816-01	Date Collected:	02/15/17 14:25
Client ID:	VES-113 (2-4)	Date Received:	02/15/17
Sample Location:	E. BOSTON	Field Prep:	Not Specified
Matrix:	Soil	Extraction Method:	EPA 3546
Analytical Method:	98,EPH-04-1.1	Extraction Date:	02/15/17 22:04
Analytical Date:	02/19/17 10:38	Cleanup Method1:	EPH-04-1
Analyst:	EK	Cleanup Date1:	02/16/17
Percent Solids:	83%		

### Quality Control Information

Condition of sample received:	Satisfactory
Sample Temperature upon receipt:	Received on Ice
Sample Extraction method:	Extracted Per the Method

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>Extractable Petroleum Hydrocarbons - Westborough Lab</b>						
C9-C18 Aliphatics	33.9	mg/kg	7.76	--	1	
C19-C36 Aliphatics	154	mg/kg	7.76	--	1	
C11-C22 Aromatics	210	mg/kg	7.76	--	1	
C11-C22 Aromatics, Adjusted	192	mg/kg	7.76	--	1	
Naphthalene	ND	mg/kg	0.388	--	1	
2-Methylnaphthalene	ND	mg/kg	0.388	--	1	
Acenaphthylene	ND	mg/kg	0.388	--	1	
Acenaphthene	ND	mg/kg	0.388	--	1	
Fluorene	ND	mg/kg	0.388	--	1	
Phenanthrene	2.08	mg/kg	0.388	--	1	
Anthracene	0.468	mg/kg	0.388	--	1	
Fluoranthene	3.38	mg/kg	0.388	--	1	
Pyrene	2.70	mg/kg	0.388	--	1	
Benzo(a)anthracene	1.59	mg/kg	0.388	--	1	
Chrysene	1.90	mg/kg	0.388	--	1	
Benzo(b)fluoranthene	1.37	mg/kg	0.388	--	1	
Benzo(k)fluoranthene	1.38	mg/kg	0.388	--	1	
Benzo(a)pyrene	1.49	mg/kg	0.388	--	1	
Indeno(1,2,3-cd)Pyrene	1.00	mg/kg	0.388	--	1	
Dibenzo(a,h)anthracene	ND	mg/kg	0.388	--	1	
Benzo(ghi)perylene	1.02	mg/kg	0.388	--	1	



**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704816  
**Report Date:** 02/20/17

**SAMPLE RESULTS**

Lab ID:	L1704816-01	Date Collected:	02/15/17 14:25
Client ID:	VES-113 (2-4)	Date Received:	02/15/17
Sample Location:	E. BOSTON	Field Prep:	Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
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**Extractable Petroleum Hydrocarbons - Westborough Lab**

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Chloro-Octadecane	78		40-140
o-Terphenyl	114		40-140
2-Fluorobiphenyl	102		40-140
2-Bromonaphthalene	106		40-140



**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704816  
**Report Date:** 02/20/17

### SAMPLE RESULTS

Lab ID:	L1704816-02	Date Collected:	02/15/17 14:00
Client ID:	VES-117 (2-4)	Date Received:	02/15/17
Sample Location:	E. BOSTON	Field Prep:	Not Specified
Matrix:	Soil		
Analytical Method:	100,VPH-04-1.1		
Analytical Date:	02/16/17 16:27		
Analyst:	JM		
Percent Solids:	73%		

### Quality Control Information

Condition of sample received:	Satisfactory
Sample Temperature upon receipt:	Received on Ice
Were samples received in methanol?	Yes (Covering the Soil)
Methanol ratio:	1:1 +/- 25%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>Volatile Petroleum Hydrocarbons - Westborough Lab</b>						
C5-C8 Aliphatics	ND		mg/kg	4.31	--	1
C9-C12 Aliphatics	ND		mg/kg	4.31	--	1
C9-C10 Aromatics	ND		mg/kg	4.31	--	1
C5-C8 Aliphatics, Adjusted	ND		mg/kg	4.31	--	1
C9-C12 Aliphatics, Adjusted	ND		mg/kg	4.31	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2,5-Dibromotoluene-PID	85		70-130
2,5-Dibromotoluene-FID	88		70-130

**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704816  
**Report Date:** 02/20/17

### SAMPLE RESULTS

Lab ID:	L1704816-02	Date Collected:	02/15/17 14:00
Client ID:	VES-117 (2-4)	Date Received:	02/15/17
Sample Location:	E. BOSTON	Field Prep:	Not Specified
Matrix:	Soil	Extraction Method:	EPA 3546
Analytical Method:	98,EPH-04-1.1	Extraction Date:	02/15/17 22:04
Analytical Date:	02/19/17 11:09	Cleanup Method1:	EPH-04-1
Analyst:	EK	Cleanup Date1:	02/16/17
Percent Solids:	73%		

### Quality Control Information

Condition of sample received:	Satisfactory
Sample Temperature upon receipt:	Received on Ice
Sample Extraction method:	Extracted Per the Method

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>Extractable Petroleum Hydrocarbons - Westborough Lab</b>						
C9-C18 Aliphatics	30.2		mg/kg	8.82	--	1
C19-C36 Aliphatics	936		mg/kg	8.82	--	1
C11-C22 Aromatics	502		mg/kg	8.82	--	1
C11-C22 Aromatics, Adjusted	461		mg/kg	8.82	--	1
Naphthalene	ND		mg/kg	0.441	--	1
2-Methylnaphthalene	ND		mg/kg	0.441	--	1
Acenaphthylene	ND		mg/kg	0.441	--	1
Acenaphthene	ND		mg/kg	0.441	--	1
Fluorene	ND		mg/kg	0.441	--	1
Phenanthrene	2.46		mg/kg	0.441	--	1
Anthracene	0.802		mg/kg	0.441	--	1
Fluoranthene	5.51		mg/kg	0.441	--	1
Pyrene	5.65		mg/kg	0.441	--	1
Benzo(a)anthracene	3.36		mg/kg	0.441	--	1
Chrysene	4.15		mg/kg	0.441	--	1
Benzo(b)fluoranthene	3.74		mg/kg	0.441	--	1
Benzo(k)fluoranthene	3.43		mg/kg	0.441	--	1
Benzo(a)pyrene	4.19		mg/kg	0.441	--	1
Indeno(1,2,3-cd)Pyrene	2.47		mg/kg	0.441	--	1
Dibenzo(a,h)anthracene	0.873		mg/kg	0.441	--	1
Benzo(ghi)perylene	4.04		mg/kg	0.441	--	1



**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704816  
**Report Date:** 02/20/17

**SAMPLE RESULTS**

Lab ID:	L1704816-02	Date Collected:	02/15/17 14:00
Client ID:	VES-117 (2-4)	Date Received:	02/15/17
Sample Location:	E. BOSTON	Field Prep:	Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
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**Extractable Petroleum Hydrocarbons - Westborough Lab**

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Chloro-Octadecane	65		40-140
o-Terphenyl	94		40-140
2-Fluorobiphenyl	85		40-140
2-Bromonaphthalene	87		40-140



**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704816  
**Report Date:** 02/20/17

### SAMPLE RESULTS

Lab ID:	L1704816-03	Date Collected:	02/15/17 13:30
Client ID:	VES-122 (3-5)	Date Received:	02/15/17
Sample Location:	E. BOSTON	Field Prep:	Not Specified
Matrix:	Soil		
Analytical Method:	100,VPH-04-1.1		
Analytical Date:	02/16/17 17:07		
Analyst:	JM		
Percent Solids:	77%		

### Quality Control Information

Condition of sample received:	Satisfactory
Sample Temperature upon receipt:	Received on Ice
Were samples received in methanol?	Yes (Covering the Soil)
Methanol ratio:	1:1 +/- 25%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>Volatile Petroleum Hydrocarbons - Westborough Lab</b>						
C5-C8 Aliphatics	ND		mg/kg	3.80	--	1
C9-C12 Aliphatics	ND		mg/kg	3.80	--	1
C9-C10 Aromatics	ND		mg/kg	3.80	--	1
C5-C8 Aliphatics, Adjusted	ND		mg/kg	3.80	--	1
C9-C12 Aliphatics, Adjusted	ND		mg/kg	3.80	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2,5-Dibromotoluene-PID	107		70-130
2,5-Dibromotoluene-FID	110		70-130

**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704816  
**Report Date:** 02/20/17

### SAMPLE RESULTS

Lab ID:	L1704816-03	Date Collected:	02/15/17 13:30
Client ID:	VES-122 (3-5)	Date Received:	02/15/17
Sample Location:	E. BOSTON	Field Prep:	Not Specified
Matrix:	Soil	Extraction Method:	EPA 3546
Analytical Method:	98,EPH-04-1.1	Extraction Date:	02/15/17 22:04
Analytical Date:	02/19/17 09:34	Cleanup Method1:	EPH-04-1
Analyst:	EK	Cleanup Date1:	02/16/17
Percent Solids:	77%		

### Quality Control Information

Condition of sample received:	Satisfactory
Sample Temperature upon receipt:	Received on Ice
Sample Extraction method:	Extracted Per the Method

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>Extractable Petroleum Hydrocarbons - Westborough Lab</b>						
C9-C18 Aliphatics	47.0	mg/kg	8.28	--	1	
C19-C36 Aliphatics	225	mg/kg	8.28	--	1	
C11-C22 Aromatics	84.4	mg/kg	8.28	--	1	
C11-C22 Aromatics, Adjusted	80.9	mg/kg	8.28	--	1	
Naphthalene	ND	mg/kg	0.414	--	1	
2-Methylnaphthalene	ND	mg/kg	0.414	--	1	
Acenaphthylene	ND	mg/kg	0.414	--	1	
Acenaphthene	ND	mg/kg	0.414	--	1	
Fluorene	ND	mg/kg	0.414	--	1	
Phenanthrene	0.426	mg/kg	0.414	--	1	
Anthracene	ND	mg/kg	0.414	--	1	
Fluoranthene	0.747	mg/kg	0.414	--	1	
Pyrene	0.714	mg/kg	0.414	--	1	
Benzo(a)anthracene	0.499	mg/kg	0.414	--	1	
Chrysene	0.625	mg/kg	0.414	--	1	
Benzo(b)fluoranthene	ND	mg/kg	0.414	--	1	
Benzo(k)fluoranthene	ND	mg/kg	0.414	--	1	
Benzo(a)pyrene	0.487	mg/kg	0.414	--	1	
Indeno(1,2,3-cd)Pyrene	ND	mg/kg	0.414	--	1	
Dibenzo(a,h)anthracene	ND	mg/kg	0.414	--	1	
Benzo(ghi)perylene	ND	mg/kg	0.414	--	1	



**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704816  
**Report Date:** 02/20/17

**SAMPLE RESULTS**

Lab ID:	L1704816-03	Date Collected:	02/15/17 13:30
Client ID:	VES-122 (3-5)	Date Received:	02/15/17
Sample Location:	E. BOSTON	Field Prep:	Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
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**Extractable Petroleum Hydrocarbons - Westborough Lab**

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Chloro-Octadecane	76		40-140
o-Terphenyl	99		40-140
2-Fluorobiphenyl	91		40-140
2-Bromonaphthalene	94		40-140



**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704816  
**Report Date:** 02/20/17

### SAMPLE RESULTS

Lab ID:	L1704816-04	Date Collected:	02/15/17 12:55
Client ID:	VES-126 (3-5)	Date Received:	02/15/17
Sample Location:	E. BOSTON	Field Prep:	Not Specified
Matrix:	Soil		
Analytical Method:	100,VPH-04-1.1		
Analytical Date:	02/16/17 17:47		
Analyst:	JM		
Percent Solids:	76%		

### Quality Control Information

Condition of sample received:	Satisfactory
Sample Temperature upon receipt:	Received on Ice
Were samples received in methanol?	Yes (Covering the Soil)
Methanol ratio:	1:1 +/- 25%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>Volatile Petroleum Hydrocarbons - Westborough Lab</b>						
C5-C8 Aliphatics	ND		mg/kg	4.08	--	1
C9-C12 Aliphatics	ND		mg/kg	4.08	--	1
C9-C10 Aromatics	ND		mg/kg	4.08	--	1
C5-C8 Aliphatics, Adjusted	ND		mg/kg	4.08	--	1
C9-C12 Aliphatics, Adjusted	ND		mg/kg	4.08	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2,5-Dibromotoluene-PID	106		70-130
2,5-Dibromotoluene-FID	108		70-130

**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704816  
**Report Date:** 02/20/17

### SAMPLE RESULTS

Lab ID:	L1704816-04	Date Collected:	02/15/17 12:55
Client ID:	VES-126 (3-5)	Date Received:	02/15/17
Sample Location:	E. BOSTON	Field Prep:	Not Specified
Matrix:	Soil	Extraction Method:	EPA 3546
Analytical Method:	98,EPH-04-1.1	Extraction Date:	02/15/17 22:04
Analytical Date:	02/19/17 08:31	Cleanup Method1:	EPH-04-1
Analyst:	EK	Cleanup Date1:	02/16/17
Percent Solids:	76%		

### Quality Control Information

Condition of sample received:	Satisfactory
Sample Temperature upon receipt:	Received on Ice
Sample Extraction method:	Extracted Per the Method

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>Extractable Petroleum Hydrocarbons - Westborough Lab</b>						
C9-C18 Aliphatics	ND		mg/kg	8.68	--	1
C19-C36 Aliphatics	ND		mg/kg	8.68	--	1
C11-C22 Aromatics	23.1		mg/kg	8.68	--	1
C11-C22 Aromatics, Adjusted	23.1		mg/kg	8.68	--	1
Naphthalene	ND		mg/kg	0.434	--	1
2-Methylnaphthalene	ND		mg/kg	0.434	--	1
Acenaphthylene	ND		mg/kg	0.434	--	1
Acenaphthene	ND		mg/kg	0.434	--	1
Fluorene	ND		mg/kg	0.434	--	1
Phenanthrene	ND		mg/kg	0.434	--	1
Anthracene	ND		mg/kg	0.434	--	1
Fluoranthene	ND		mg/kg	0.434	--	1
Pyrene	ND		mg/kg	0.434	--	1
Benzo(a)anthracene	ND		mg/kg	0.434	--	1
Chrysene	ND		mg/kg	0.434	--	1
Benzo(b)fluoranthene	ND		mg/kg	0.434	--	1
Benzo(k)fluoranthene	ND		mg/kg	0.434	--	1
Benzo(a)pyrene	ND		mg/kg	0.434	--	1
Indeno(1,2,3-cd)Pyrene	ND		mg/kg	0.434	--	1
Dibenzo(a,h)anthracene	ND		mg/kg	0.434	--	1
Benzo(ghi)perylene	ND		mg/kg	0.434	--	1



**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704816  
**Report Date:** 02/20/17

**SAMPLE RESULTS**

Lab ID:	L1704816-04	Date Collected:	02/15/17 12:55
Client ID:	VES-126 (3-5)	Date Received:	02/15/17
Sample Location:	E. BOSTON	Field Prep:	Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
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**Extractable Petroleum Hydrocarbons - Westborough Lab**

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Chloro-Octadecane	89		40-140
o-Terphenyl	80		40-140
2-Fluorobiphenyl	74		40-140
2-Bromonaphthalene	77		40-140

**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704816  
**Report Date:** 02/20/17

### SAMPLE RESULTS

Lab ID:	L1704816-06	Date Collected:	02/15/17 11:05
Client ID:	VES-114 (2-4)	Date Received:	02/15/17
Sample Location:	E. BOSTON	Field Prep:	Not Specified
Matrix:	Soil		
Analytical Method:	100,VPH-04-1.1		
Analytical Date:	02/16/17 18:26		
Analyst:	JM		
Percent Solids:	71%		

### Quality Control Information

Condition of sample received:	Satisfactory
Sample Temperature upon receipt:	Received on Ice
Were samples received in methanol?	Yes (Covering the Soil)
Methanol ratio:	1:1.3

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>Volatile Petroleum Hydrocarbons - Westborough Lab</b>						
C5-C8 Aliphatics	ND		mg/kg	3.83	--	1
C9-C12 Aliphatics	ND		mg/kg	3.83	--	1
C9-C10 Aromatics	ND		mg/kg	3.83	--	1
C5-C8 Aliphatics, Adjusted	ND		mg/kg	3.83	--	1
C9-C12 Aliphatics, Adjusted	ND		mg/kg	3.83	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2,5-Dibromotoluene-PID	183	Q	70-130
2,5-Dibromotoluene-FID	189	Q	70-130



**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704816  
**Report Date:** 02/20/17

### SAMPLE RESULTS

Lab ID:	L1704816-06	Date Collected:	02/15/17 11:05
Client ID:	VES-114 (2-4)	Date Received:	02/15/17
Sample Location:	E. BOSTON	Field Prep:	Not Specified
Matrix:	Soil	Extraction Method:	EPA 3546
Analytical Method:	98,EPH-04-1.1	Extraction Date:	02/15/17 22:04
Analytical Date:	02/16/17 20:32	Cleanup Method1:	EPH-04-1
Analyst:	EK	Cleanup Date1:	02/16/17
Percent Solids:	71%		

### Quality Control Information

Condition of sample received:	Satisfactory
Sample Temperature upon receipt:	Received on Ice
Sample Extraction method:	Extracted Per the Method

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>Extractable Petroleum Hydrocarbons - Westborough Lab</b>						
C9-C18 Aliphatics	ND		mg/kg	8.97	--	1
C19-C36 Aliphatics	ND		mg/kg	8.97	--	1
C11-C22 Aromatics	64.0		mg/kg	8.97	--	1
C11-C22 Aromatics, Adjusted	32.8		mg/kg	8.97	--	1
Naphthalene	ND		mg/kg	0.448	--	1
2-Methylnaphthalene	ND		mg/kg	0.448	--	1
Acenaphthylene	ND		mg/kg	0.448	--	1
Acenaphthene	ND		mg/kg	0.448	--	1
Fluorene	ND		mg/kg	0.448	--	1
Phenanthrene	2.40		mg/kg	0.448	--	1
Anthracene	0.511		mg/kg	0.448	--	1
Fluoranthene	4.97		mg/kg	0.448	--	1
Pyrene	4.50		mg/kg	0.448	--	1
Benzo(a)anthracene	2.89		mg/kg	0.448	--	1
Chrysene	3.05		mg/kg	0.448	--	1
Benzo(b)fluoranthene	2.47		mg/kg	0.448	--	1
Benzo(k)fluoranthene	2.72		mg/kg	0.448	--	1
Benzo(a)pyrene	2.93		mg/kg	0.448	--	1
Indeno(1,2,3-cd)Pyrene	2.08		mg/kg	0.448	--	1
Dibenzo(a,h)anthracene	0.588		mg/kg	0.448	--	1
Benzo(ghi)perylene	2.03		mg/kg	0.448	--	1



**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704816  
**Report Date:** 02/20/17

**SAMPLE RESULTS**

Lab ID:	L1704816-06	Date Collected:	02/15/17 11:05
Client ID:	VES-114 (2-4)	Date Received:	02/15/17
Sample Location:	E. BOSTON	Field Prep:	Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
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**Extractable Petroleum Hydrocarbons - Westborough Lab**

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Chloro-Octadecane	71		40-140
o-Terphenyl	97		40-140
2-Fluorobiphenyl	103		40-140
2-Bromonaphthalene	105		40-140



**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704816  
**Report Date:** 02/20/17

### SAMPLE RESULTS

Lab ID:	L1704816-08	Date Collected:	02/15/17 10:35
Client ID:	VES-115 (2-4)	Date Received:	02/15/17
Sample Location:	E. BOSTON	Field Prep:	Not Specified
Matrix:	Soil		
Analytical Method:	100,VPH-04-1.1		
Analytical Date:	02/16/17 19:06		
Analyst:	JM		
Percent Solids:	65%		

### Quality Control Information

Condition of sample received:	Satisfactory
Sample Temperature upon receipt:	Received on Ice
Were samples received in methanol?	Yes (Covering the Soil)
Methanol ratio:	1:1.4

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>Volatile Petroleum Hydrocarbons - Westborough Lab</b>						
C5-C8 Aliphatics	ND		mg/kg	4.30	--	1
C9-C12 Aliphatics	ND		mg/kg	4.30	--	1
C9-C10 Aromatics	ND		mg/kg	4.30	--	1
C5-C8 Aliphatics, Adjusted	ND		mg/kg	4.30	--	1
C9-C12 Aliphatics, Adjusted	ND		mg/kg	4.30	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2,5-Dibromotoluene-PID	102		70-130
2,5-Dibromotoluene-FID	104		70-130

**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704816  
**Report Date:** 02/20/17

### SAMPLE RESULTS

Lab ID:	L1704816-08	Date Collected:	02/15/17 10:35
Client ID:	VES-115 (2-4)	Date Received:	02/15/17
Sample Location:	E. BOSTON	Field Prep:	Not Specified
Matrix:	Soil	Extraction Method:	EPA 3546
Analytical Method:	98,EPH-04-1.1	Extraction Date:	02/15/17 22:04
Analytical Date:	02/16/17 19:54	Cleanup Method1:	EPH-04-1
Analyst:	EK	Cleanup Date1:	02/16/17
Percent Solids:	65%		

### Quality Control Information

Condition of sample received:	Satisfactory
Sample Temperature upon receipt:	Received on Ice
Sample Extraction method:	Extracted Per the Method

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>Extractable Petroleum Hydrocarbons - Westborough Lab</b>						
C9-C18 Aliphatics	ND		mg/kg	10.1	--	1
C19-C36 Aliphatics	ND		mg/kg	10.1	--	1
C11-C22 Aromatics	ND		mg/kg	10.1	--	1
C11-C22 Aromatics, Adjusted	ND		mg/kg	10.1	--	1
Naphthalene	ND		mg/kg	0.504	--	1
2-Methylnaphthalene	ND		mg/kg	0.504	--	1
Acenaphthylene	ND		mg/kg	0.504	--	1
Acenaphthene	ND		mg/kg	0.504	--	1
Fluorene	ND		mg/kg	0.504	--	1
Phenanthrene	ND		mg/kg	0.504	--	1
Anthracene	ND		mg/kg	0.504	--	1
Fluoranthene	ND		mg/kg	0.504	--	1
Pyrene	ND		mg/kg	0.504	--	1
Benzo(a)anthracene	ND		mg/kg	0.504	--	1
Chrysene	ND		mg/kg	0.504	--	1
Benzo(b)fluoranthene	ND		mg/kg	0.504	--	1
Benzo(k)fluoranthene	ND		mg/kg	0.504	--	1
Benzo(a)pyrene	ND		mg/kg	0.504	--	1
Indeno(1,2,3-cd)Pyrene	ND		mg/kg	0.504	--	1
Dibenzo(a,h)anthracene	ND		mg/kg	0.504	--	1
Benzo(ghi)perylene	ND		mg/kg	0.504	--	1



**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704816  
**Report Date:** 02/20/17

**SAMPLE RESULTS**

Lab ID:	L1704816-08	Date Collected:	02/15/17 10:35
Client ID:	VES-115 (2-4)	Date Received:	02/15/17
Sample Location:	E. BOSTON	Field Prep:	Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
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**Extractable Petroleum Hydrocarbons - Westborough Lab**

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Chloro-Octadecane	82		40-140
o-Terphenyl	95		40-140
2-Fluorobiphenyl	94		40-140
2-Bromonaphthalene	100		40-140

Project Name: E. BOSTON

Lab Number: L1704816

Project Number: 43068

Report Date: 02/20/17

**SAMPLE RESULTS**

Lab ID: L1704816-09 Date Collected: 02/15/17 09:35  
 Client ID: VES-118 (22-24) Date Received: 02/15/17  
 Sample Location: E. BOSTON Field Prep: Not Specified  
 Matrix: Soil  
 Analytical Method: 100,VPH-04-1.1  
 Analytical Date: 02/16/17 19:46  
 Analyst: JM  
 Percent Solids: 45%

**Quality Control Information**

Condition of sample received: Satisfactory  
 Sample Temperature upon receipt: Received on Ice  
 Were samples received in methanol? Yes (Covering the Soil)  
 Methanol ratio: 1:1 +/- 25%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>Volatile Petroleum Hydrocarbons - Westborough Lab</b>						
C5-C8 Aliphatics	ND		mg/kg	8.44	--	1
C9-C12 Aliphatics	ND		mg/kg	8.44	--	1
C9-C10 Aromatics	ND		mg/kg	8.44	--	1
C5-C8 Aliphatics, Adjusted	ND		mg/kg	8.44	--	1
C9-C12 Aliphatics, Adjusted	ND		mg/kg	8.44	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2,5-Dibromotoluene-PID	189	Q	70-130
2,5-Dibromotoluene-FID	192	Q	70-130

**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704816  
**Report Date:** 02/20/17

### SAMPLE RESULTS

Lab ID:	L1704816-09	Date Collected:	02/15/17 09:35
Client ID:	VES-118 (22-24)	Date Received:	02/15/17
Sample Location:	E. BOSTON	Field Prep:	Not Specified
Matrix:	Soil	Extraction Method:	EPA 3546
Analytical Method:	98,EPH-04-1.1	Extraction Date:	02/15/17 22:04
Analytical Date:	02/19/17 10:06	Cleanup Method1:	EPH-04-1
Analyst:	EK	Cleanup Date1:	02/16/17
Percent Solids:	45%		

### Quality Control Information

Condition of sample received:	Satisfactory
Sample Temperature upon receipt:	Received on Ice
Sample Extraction method:	Extracted Per the Method

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>Extractable Petroleum Hydrocarbons - Westborough Lab</b>						
C9-C18 Aliphatics	96.6	mg/kg	14.5	--	1	
C19-C36 Aliphatics	556	mg/kg	14.5	--	1	
C11-C22 Aromatics	256	mg/kg	14.5	--	1	
C11-C22 Aromatics, Adjusted	205	mg/kg	14.5	--	1	
Naphthalene	ND	mg/kg	0.724	--	1	
2-Methylnaphthalene	ND	mg/kg	0.724	--	1	
Acenaphthylene	ND	mg/kg	0.724	--	1	
Acenaphthene	ND	mg/kg	0.724	--	1	
Fluorene	ND	mg/kg	0.724	--	1	
Phenanthrene	4.99	mg/kg	0.724	--	1	
Anthracene	0.992	mg/kg	0.724	--	1	
Fluoranthene	7.07	mg/kg	0.724	--	1	
Pyrene	6.17	mg/kg	0.724	--	1	
Benzo(a)anthracene	5.12	mg/kg	0.724	--	1	
Chrysene	6.21	mg/kg	0.724	--	1	
Benzo(b)fluoranthene	4.28	mg/kg	0.724	--	1	
Benzo(k)fluoranthene	3.99	mg/kg	0.724	--	1	
Benzo(a)pyrene	4.69	mg/kg	0.724	--	1	
Indeno(1,2,3-cd)Pyrene	3.48	mg/kg	0.724	--	1	
Dibenzo(a,h)anthracene	0.900	mg/kg	0.724	--	1	
Benzo(ghi)perylene	3.07	mg/kg	0.724	--	1	



Project Name: E. BOSTON

Lab Number: L1704816

Project Number: 43068

Report Date: 02/20/17

**SAMPLE RESULTS**

Lab ID:	L1704816-09	Date Collected:	02/15/17 09:35
Client ID:	VES-118 (22-24)	Date Received:	02/15/17
Sample Location:	E. BOSTON	Field Prep:	Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
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**Extractable Petroleum Hydrocarbons - Westborough Lab**

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Chloro-Octadecane	95		40-140
o-Terphenyl	105		40-140
2-Fluorobiphenyl	92		40-140
2-Bromonaphthalene	96		40-140



**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704816  
**Report Date:** 02/20/17

### SAMPLE RESULTS

Lab ID:	L1704816-11	Date Collected:	02/15/17 09:10
Client ID:	VES-118 (2-4)	Date Received:	02/15/17
Sample Location:	E. BOSTON	Field Prep:	Not Specified
Matrix:	Soil		
Analytical Method:	100,VPH-04-1.1		
Analytical Date:	02/16/17 20:26		
Analyst:	JM		
Percent Solids:	80%		

### Quality Control Information

Condition of sample received:	Satisfactory
Sample Temperature upon receipt:	Received on Ice
Were samples received in methanol?	Yes (Covering the Soil)
Methanol ratio:	1:1.3

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>Volatile Petroleum Hydrocarbons - Westborough Lab</b>						
C5-C8 Aliphatics	ND		mg/kg	3.18	--	1
C9-C12 Aliphatics	ND		mg/kg	3.18	--	1
C9-C10 Aromatics	ND		mg/kg	3.18	--	1
C5-C8 Aliphatics, Adjusted	ND		mg/kg	3.18	--	1
C9-C12 Aliphatics, Adjusted	ND		mg/kg	3.18	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2,5-Dibromotoluene-PID	115		70-130
2,5-Dibromotoluene-FID	115		70-130

**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704816  
**Report Date:** 02/20/17

### SAMPLE RESULTS

Lab ID:	L1704816-11	Date Collected:	02/15/17 09:10
Client ID:	VES-118 (2-4)	Date Received:	02/15/17
Sample Location:	E. BOSTON	Field Prep:	Not Specified
Matrix:	Soil	Extraction Method:	EPA 3546
Analytical Method:	98,EPH-04-1.1	Extraction Date:	02/15/17 22:04
Analytical Date:	02/19/17 09:03	Cleanup Method1:	EPH-04-1
Analyst:	EK	Cleanup Date1:	02/16/17
Percent Solids:	80%		

### Quality Control Information

Condition of sample received:	Satisfactory
Sample Temperature upon receipt:	Received on Ice
Sample Extraction method:	Extracted Per the Method

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>Extractable Petroleum Hydrocarbons - Westborough Lab</b>						
C9-C18 Aliphatics	30.3	mg/kg	8.00	--	1	
C19-C36 Aliphatics	280	mg/kg	8.00	--	1	
C11-C22 Aromatics	226	mg/kg	8.00	--	1	
C11-C22 Aromatics, Adjusted	182	mg/kg	8.00	--	1	
Naphthalene	ND	mg/kg	0.400	--	1	
2-Methylnaphthalene	ND	mg/kg	0.400	--	1	
Acenaphthylene	ND	mg/kg	0.400	--	1	
Acenaphthene	0.632	mg/kg	0.400	--	1	
Fluorene	0.648	mg/kg	0.400	--	1	
Phenanthrene	5.53	mg/kg	0.400	--	1	
Anthracene	1.46	mg/kg	0.400	--	1	
Fluoranthene	7.22	mg/kg	0.400	--	1	
Pyrene	6.16	mg/kg	0.400	--	1	
Benzo(a)anthracene	3.75	mg/kg	0.400	--	1	
Chrysene	4.29	mg/kg	0.400	--	1	
Benzo(b)fluoranthene	2.93	mg/kg	0.400	--	1	
Benzo(k)fluoranthene	2.91	mg/kg	0.400	--	1	
Benzo(a)pyrene	3.43	mg/kg	0.400	--	1	
Indeno(1,2,3-cd)Pyrene	2.48	mg/kg	0.400	--	1	
Dibenzo(a,h)anthracene	0.695	mg/kg	0.400	--	1	
Benzo(ghi)perylene	2.18	mg/kg	0.400	--	1	



**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704816  
**Report Date:** 02/20/17

**SAMPLE RESULTS**

Lab ID:	L1704816-11	Date Collected:	02/15/17 09:10
Client ID:	VES-118 (2-4)	Date Received:	02/15/17
Sample Location:	E. BOSTON	Field Prep:	Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
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**Extractable Petroleum Hydrocarbons - Westborough Lab**

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Chloro-Octadecane	95		40-140
o-Terphenyl	119		40-140
2-Fluorobiphenyl	91		40-140
2-Bromonaphthalene	95		40-140



Project Name: E. BOSTON

Lab Number: L1704816

Project Number: 43068

Report Date: 02/20/17

**SAMPLE RESULTS**

Lab ID:	L1704816-12	Date Collected:	02/15/17 08:40
Client ID:	VES-127 (18-20)	Date Received:	02/15/17
Sample Location:	E. BOSTON	Field Prep:	Not Specified
Matrix:	Soil		
Analytical Method:	100,VPH-04-1.1		
Analytical Date:	02/16/17 21:06		
Analyst:	JM		
Percent Solids:	72%		

**Quality Control Information**

Condition of sample received:	Satisfactory
Sample Temperature upon receipt:	Received on Ice
Were samples received in methanol?	Yes (Covering the Soil)
Methanol ratio:	1:1 +/- 25%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>Volatile Petroleum Hydrocarbons - Westborough Lab</b>						
C5-C8 Aliphatics	ND		mg/kg	4.46	--	1
C9-C12 Aliphatics	ND		mg/kg	4.46	--	1
C9-C10 Aromatics	ND		mg/kg	4.46	--	1
C5-C8 Aliphatics, Adjusted	ND		mg/kg	4.46	--	1
C9-C12 Aliphatics, Adjusted	ND		mg/kg	4.46	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2,5-Dibromotoluene-PID	125		70-130
2,5-Dibromotoluene-FID	129		70-130

**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704816  
**Report Date:** 02/20/17

### SAMPLE RESULTS

Lab ID:	L1704816-12	Date Collected:	02/15/17 08:40
Client ID:	VES-127 (18-20)	Date Received:	02/15/17
Sample Location:	E. BOSTON	Field Prep:	Not Specified
Matrix:	Soil	Extraction Method:	EPA 3546
Analytical Method:	98,EPH-04-1.1	Extraction Date:	02/15/17 22:04
Analytical Date:	02/16/17 19:16	Cleanup Method1:	EPH-04-1
Analyst:	EK	Cleanup Date1:	02/16/17
Percent Solids:	72%		

### Quality Control Information

Condition of sample received:	Satisfactory
Sample Temperature upon receipt:	Received on Ice
Sample Extraction method:	Extracted Per the Method

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>Extractable Petroleum Hydrocarbons - Westborough Lab</b>						
C9-C18 Aliphatics	ND		mg/kg	9.18	--	1
C19-C36 Aliphatics	ND		mg/kg	9.18	--	1
C11-C22 Aromatics	ND		mg/kg	9.18	--	1
C11-C22 Aromatics, Adjusted	ND		mg/kg	9.18	--	1
Naphthalene	ND		mg/kg	0.459	--	1
2-Methylnaphthalene	ND		mg/kg	0.459	--	1
Acenaphthylene	ND		mg/kg	0.459	--	1
Acenaphthene	ND		mg/kg	0.459	--	1
Fluorene	ND		mg/kg	0.459	--	1
Phenanthrene	ND		mg/kg	0.459	--	1
Anthracene	ND		mg/kg	0.459	--	1
Fluoranthene	ND		mg/kg	0.459	--	1
Pyrene	ND		mg/kg	0.459	--	1
Benzo(a)anthracene	ND		mg/kg	0.459	--	1
Chrysene	ND		mg/kg	0.459	--	1
Benzo(b)fluoranthene	ND		mg/kg	0.459	--	1
Benzo(k)fluoranthene	ND		mg/kg	0.459	--	1
Benzo(a)pyrene	ND		mg/kg	0.459	--	1
Indeno(1,2,3-cd)Pyrene	ND		mg/kg	0.459	--	1
Dibenzo(a,h)anthracene	ND		mg/kg	0.459	--	1
Benzo(ghi)perylene	ND		mg/kg	0.459	--	1



Project Name: E. BOSTON

Lab Number: L1704816

Project Number: 43068

Report Date: 02/20/17

**SAMPLE RESULTS**

Lab ID:	L1704816-12	Date Collected:	02/15/17 08:40
Client ID:	VES-127 (18-20)	Date Received:	02/15/17
Sample Location:	E. BOSTON	Field Prep:	Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
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**Extractable Petroleum Hydrocarbons - Westborough Lab**

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Chloro-Octadecane	86		40-140
o-Terphenyl	87		40-140
2-Fluorobiphenyl	89		40-140
2-Bromonaphthalene	88		40-140



**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704816  
**Report Date:** 02/20/17

### SAMPLE RESULTS

Lab ID:	L1704816-14	Date Collected:	02/15/17 08:30
Client ID:	VES-127 (2-4)	Date Received:	02/15/17
Sample Location:	E. BOSTON	Field Prep:	Not Specified
Matrix:	Soil		
Analytical Method:	100,VPH-04-1.1		
Analytical Date:	02/16/17 21:46		
Analyst:	JM		
Percent Solids:	72%		

### Quality Control Information

Condition of sample received:	Satisfactory
Sample Temperature upon receipt:	Received on Ice
Were samples received in methanol?	Yes (Covering the Soil)
Methanol ratio:	1:1 +/- 25%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>Volatile Petroleum Hydrocarbons - Westborough Lab</b>						
C5-C8 Aliphatics	ND		mg/kg	5.00	--	1
C9-C12 Aliphatics	ND		mg/kg	5.00	--	1
C9-C10 Aromatics	ND		mg/kg	5.00	--	1
C5-C8 Aliphatics, Adjusted	ND		mg/kg	5.00	--	1
C9-C12 Aliphatics, Adjusted	ND		mg/kg	5.00	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2,5-Dibromotoluene-PID	102		70-130
2,5-Dibromotoluene-FID	105		70-130

**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704816  
**Report Date:** 02/20/17

### SAMPLE RESULTS

Lab ID:	L1704816-14	Date Collected:	02/15/17 08:30
Client ID:	VES-127 (2-4)	Date Received:	02/15/17
Sample Location:	E. BOSTON	Field Prep:	Not Specified
Matrix:	Soil	Extraction Method:	EPA 3546
Analytical Method:	98,EPH-04-1.1	Extraction Date:	02/15/17 22:04
Analytical Date:	02/16/17 19:40	Cleanup Method1:	EPH-04-1
Analyst:	NS	Cleanup Date1:	02/16/17
Percent Solids:	72%		

### Quality Control Information

Condition of sample received:	Satisfactory
Sample Temperature upon receipt:	Received on Ice
Sample Extraction method:	Extracted Per the Method

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>Extractable Petroleum Hydrocarbons - Westborough Lab</b>						
C9-C18 Aliphatics	ND		mg/kg	9.18	--	1
C19-C36 Aliphatics	11.3		mg/kg	9.18	--	1
C11-C22 Aromatics	17.4		mg/kg	9.18	--	1
C11-C22 Aromatics, Adjusted	17.4		mg/kg	9.18	--	1
Naphthalene	ND		mg/kg	0.459	--	1
2-Methylnaphthalene	ND		mg/kg	0.459	--	1
Acenaphthylene	ND		mg/kg	0.459	--	1
Acenaphthene	ND		mg/kg	0.459	--	1
Fluorene	ND		mg/kg	0.459	--	1
Phenanthrene	ND		mg/kg	0.459	--	1
Anthracene	ND		mg/kg	0.459	--	1
Fluoranthene	ND		mg/kg	0.459	--	1
Pyrene	ND		mg/kg	0.459	--	1
Benzo(a)anthracene	ND		mg/kg	0.459	--	1
Chrysene	ND		mg/kg	0.459	--	1
Benzo(b)fluoranthene	ND		mg/kg	0.459	--	1
Benzo(k)fluoranthene	ND		mg/kg	0.459	--	1
Benzo(a)pyrene	ND		mg/kg	0.459	--	1
Indeno(1,2,3-cd)Pyrene	ND		mg/kg	0.459	--	1
Dibenzo(a,h)anthracene	ND		mg/kg	0.459	--	1
Benzo(ghi)perylene	ND		mg/kg	0.459	--	1



**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704816  
**Report Date:** 02/20/17

**SAMPLE RESULTS**

Lab ID:	L1704816-14	Date Collected:	02/15/17 08:30
Client ID:	VES-127 (2-4)	Date Received:	02/15/17
Sample Location:	E. BOSTON	Field Prep:	Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
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**Extractable Petroleum Hydrocarbons - Westborough Lab**

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Chloro-Octadecane	76		40-140
o-Terphenyl	71		40-140
2-Fluorobiphenyl	74		40-140
2-Bromonaphthalene	77		40-140

Project Name: E. BOSTON

Lab Number: L1704816

Project Number: 43068

Report Date: 02/20/17

**SAMPLE RESULTS**

Lab ID: L1704816-15 Date Collected: 02/15/17 10:00  
 Client ID: VES-106 (10-12) Date Received: 02/15/17  
 Sample Location: E. BOSTON Field Prep: Not Specified  
 Matrix: Soil  
 Analytical Method: 100,VPH-04-1.1  
 Analytical Date: 02/16/17 22:26  
 Analyst: JM  
 Percent Solids: 56%

**Quality Control Information**

Condition of sample received: Satisfactory  
 Sample Temperature upon receipt: Received on Ice  
 Were samples received in methanol? Yes (Covering the Soil)  
 Methanol ratio: 2.7:1

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>Volatile Petroleum Hydrocarbons - Westborough Lab</b>						
C5-C8 Aliphatics	ND		mg/kg	14.8	--	1
C9-C12 Aliphatics	ND		mg/kg	14.8	--	1
C9-C10 Aromatics	ND		mg/kg	14.8	--	1
C5-C8 Aliphatics, Adjusted	ND		mg/kg	14.8	--	1
C9-C12 Aliphatics, Adjusted	ND		mg/kg	14.8	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2,5-Dibromotoluene-PID	110		70-130
2,5-Dibromotoluene-FID	112		70-130

**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704816  
**Report Date:** 02/20/17

### SAMPLE RESULTS

Lab ID:	L1704816-15	Date Collected:	02/15/17 10:00
Client ID:	VES-106 (10-12)	Date Received:	02/15/17
Sample Location:	E. BOSTON	Field Prep:	Not Specified
Matrix:	Soil	Extraction Method:	EPA 3546
Analytical Method:	98,EPH-04-1.1	Extraction Date:	02/15/17 22:04
Analytical Date:	02/16/17 19:09	Cleanup Method1:	EPH-04-1
Analyst:	NS	Cleanup Date1:	02/16/17
Percent Solids:	56%		

### Quality Control Information

Condition of sample received:	Satisfactory
Sample Temperature upon receipt:	Received on Ice
Sample Extraction method:	Extracted Per the Method

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>Extractable Petroleum Hydrocarbons - Westborough Lab</b>						
C9-C18 Aliphatics	24.8	mg/kg	11.7	--	1	
C19-C36 Aliphatics	122	mg/kg	11.7	--	1	
C11-C22 Aromatics	71.7	mg/kg	11.7	--	1	
C11-C22 Aromatics, Adjusted	71.7	mg/kg	11.7	--	1	
Naphthalene	ND	mg/kg	0.585	--	1	
2-Methylnaphthalene	ND	mg/kg	0.585	--	1	
Acenaphthylene	ND	mg/kg	0.585	--	1	
Acenaphthene	ND	mg/kg	0.585	--	1	
Fluorene	ND	mg/kg	0.585	--	1	
Phenanthrene	ND	mg/kg	0.585	--	1	
Anthracene	ND	mg/kg	0.585	--	1	
Fluoranthene	ND	mg/kg	0.585	--	1	
Pyrene	ND	mg/kg	0.585	--	1	
Benzo(a)anthracene	ND	mg/kg	0.585	--	1	
Chrysene	ND	mg/kg	0.585	--	1	
Benzo(b)fluoranthene	ND	mg/kg	0.585	--	1	
Benzo(k)fluoranthene	ND	mg/kg	0.585	--	1	
Benzo(a)pyrene	ND	mg/kg	0.585	--	1	
Indeno(1,2,3-cd)Pyrene	ND	mg/kg	0.585	--	1	
Dibenzo(a,h)anthracene	ND	mg/kg	0.585	--	1	
Benzo(ghi)perylene	ND	mg/kg	0.585	--	1	



Project Name: E. BOSTON

Lab Number: L1704816

Project Number: 43068

Report Date: 02/20/17

**SAMPLE RESULTS**

Lab ID:	L1704816-15	Date Collected:	02/15/17 10:00
Client ID:	VES-106 (10-12)	Date Received:	02/15/17
Sample Location:	E. BOSTON	Field Prep:	Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
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**Extractable Petroleum Hydrocarbons - Westborough Lab**

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Chloro-Octadecane	77		40-140
o-Terphenyl	74		40-140
2-Fluorobiphenyl	71		40-140
2-Bromonaphthalene	74		40-140

**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704816  
**Report Date:** 02/20/17

### Method Blank Analysis Batch Quality Control

Analytical Method: 98,EPH-04-1.1  
Analytical Date: 02/16/17 17:23  
Analyst: EK

Extraction Method: EPA 3546  
Extraction Date: 02/15/17 22:04  
Cleanup Method: EPH-04-1  
Cleanup Date: 02/16/17

Parameter	Result	Qualifier	Units	RL	MDL
Extractable Petroleum Hydrocarbons - Westborough Lab for sample(s): 01-04,06,08-09,11-12,14-15					
Batch: WG978220-1					
C9-C18 Aliphatics	ND		mg/kg	6.37	--
C19-C36 Aliphatics	ND		mg/kg	6.37	--
C11-C22 Aromatics	ND		mg/kg	6.37	--
C11-C22 Aromatics, Adjusted	ND		mg/kg	6.37	--
Naphthalene	ND		mg/kg	0.319	--
2-Methylnaphthalene	ND		mg/kg	0.319	--
Acenaphthylene	ND		mg/kg	0.319	--
Acenaphthene	ND		mg/kg	0.319	--
Fluorene	ND		mg/kg	0.319	--
Phenanthrene	ND		mg/kg	0.319	--
Anthracene	ND		mg/kg	0.319	--
Fluoranthene	ND		mg/kg	0.319	--
Pyrene	ND		mg/kg	0.319	--
Benzo(a)anthracene	ND		mg/kg	0.319	--
Chrysene	ND		mg/kg	0.319	--
Benzo(b)fluoranthene	ND		mg/kg	0.319	--
Benzo(k)fluoranthene	ND		mg/kg	0.319	--
Benzo(a)pyrene	ND		mg/kg	0.319	--
Indeno(1,2,3-cd)Pyrene	ND		mg/kg	0.319	--
Dibenzo(a,h)anthracene	ND		mg/kg	0.319	--
Benzo(ghi)perylene	ND		mg/kg	0.319	--

**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704816  
**Report Date:** 02/20/17

### Method Blank Analysis Batch Quality Control

Analytical Method: 98,EPH-04-1.1  
Analytical Date: 02/16/17 17:23  
Analyst: EK

Extraction Method: EPA 3546  
Extraction Date: 02/15/17 22:04  
Cleanup Method: EPH-04-1  
Cleanup Date: 02/16/17

Parameter	Result	Qualifier	Units	RL	MDL
Extractable Petroleum Hydrocarbons - Westborough Lab for sample(s): 01-04,06,08-09,11-12,14-15					
Batch: WG978220-1					

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Chloro-Octadecane	72		40-140
o-Terphenyl	73		40-140
2-Fluorobiphenyl	85		40-140
2-Bromonaphthalene	99		40-140

**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704816  
**Report Date:** 02/20/17

**Method Blank Analysis**  
**Batch Quality Control**

Analytical Method: 100,VPH-04-1.1  
Analytical Date: 02/16/17 08:28  
Analyst: JM

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Petroleum Hydrocarbons - Westborough Lab for sample(s): 01-04,06,08-09,11-12,14-15					
Batch: WG978426-3					
C5-C8 Aliphatics	ND		mg/kg	2.67	--
C9-C12 Aliphatics	ND		mg/kg	2.67	--
C9-C10 Aromatics	ND		mg/kg	2.67	--
C5-C8 Aliphatics, Adjusted	ND		mg/kg	2.67	--
C9-C12 Aliphatics, Adjusted	ND		mg/kg	2.67	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2,5-Dibromotoluene-PID	107		70-130
2,5-Dibromotoluene-FID	110		70-130

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704816  
**Report Date:** 02/20/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Extractable Petroleum Hydrocarbons - Westborough Lab Associated sample(s): 01-04,06,08-09,11-12,14-15 Batch: WG978220-2 WG978220-3								
C9-C18 Aliphatics	66		63		40-140	5		25
C19-C36 Aliphatics	91		89		40-140	2		25
C11-C22 Aromatics	84		85		40-140	1		25
Naphthalene	64		66		40-140	3		25
2-Methylnaphthalene	69		70		40-140	1		25
Acenaphthylene	69		72		40-140	4		25
Acenaphthene	76		78		40-140	3		25
Fluorene	82		83		40-140	1		25
Phenanthrene	85		85		40-140	0		25
Anthracene	84		85		40-140	1		25
Fluoranthene	89		89		40-140	0		25
Pyrene	87		88		40-140	1		25
Benzo(a)anthracene	84		85		40-140	1		25
Chrysene	89		90		40-140	1		25
Benzo(b)fluoranthene	84		86		40-140	2		25
Benzo(k)fluoranthene	87		88		40-140	1		25
Benzo(a)pyrene	78		80		40-140	3		25
Indeno(1,2,3-cd)Pyrene	80		81		40-140	1		25
Dibenzo(a,h)anthracene	88		89		40-140	1		25
Benzo(ghi)perylene	79		80		40-140	1		25
Nonane (C9)	59		57		30-140	3		25

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704816  
**Report Date:** 02/20/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Extractable Petroleum Hydrocarbons - Westborough Lab Associated sample(s): 01-04,06,08-09,11-12,14-15 Batch: WG978220-2 WG978220-3								
Decane (C10)	69		67		40-140	3		25
Dodecane (C12)	74		73		40-140	1		25
Tetradecane (C14)	80		78		40-140	3		25
Hexadecane (C16)	87		83		40-140	5		25
Octadecane (C18)	90		86		40-140	5		25
Nonadecane (C19)	89		86		40-140	3		25
Eicosane (C20)	90		87		40-140	3		25
Docosane (C22)	90		88		40-140	2		25
Tetracosane (C24)	88		86		40-140	2		25
Hexacosane (C26)	89		87		40-140	2		25
Octacosane (C28)	89		87		40-140	2		25
Triacontane (C30)	88		86		40-140	2		25
Hexatriacontane (C36)	86		84		40-140	2		25

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Chloro-Octadecane	82		81		40-140
o-Terphenyl	86		86		40-140
2-Fluorobiphenyl	88		83		40-140
2-Bromonaphthalene	89		85		40-140
% Naphthalene Breakthrough	0		0		
% 2-Methylnaphthalene Breakthrough	0		0		

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704816  
**Report Date:** 02/20/17

<b>Parameter</b>	<i>LCS</i> <b>%Recovery</b>	<i>LCS</i> <b>%Recovery</b>	<i>%Recovery</i> <b>Limits</b>	<i>RPD</i>	<i>RPD</i> <b>Limits</b>
	<b>Qual</b>	<b>Qual</b>	<b>Limits</b>	<b>Qual</b>	
Volatile Petroleum Hydrocarbons - Westborough Lab Associated sample(s): 01-04,06,08-09,11-12,14-15 Batch: WG978426-1 WG978426-2					
C5-C8 Aliphatics	104	102	70-130	2	25
C9-C12 Aliphatics	105	103	70-130	2	25
C9-C10 Aromatics	101	99	70-130	2	25
Benzene	100	99	70-130	1	25
Toluene	101	100	70-130	1	25
Ethylbenzene	101	100	70-130	1	25
p/m-Xylene	103	100	70-130	3	25
o-Xylene	102	100	70-130	2	25
Methyl tert butyl ether	101	104	70-130	3	25
Naphthalene	104	103	70-130	1	25
1,2,4-Trimethylbenzene	101	99	70-130	2	25
Pentane	98	96	70-130	2	25
2-Methylpentane	103	101	70-130	2	25
2,2,4-Trimethylpentane	107	105	70-130	2	25
n-Nonane	107	104	30-130	3	25
n-Decane	104	102	70-130	2	25
n-Butylcyclohexane	104	104	70-130	0	25

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704816  
**Report Date:** 02/20/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
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Volatile Petroleum Hydrocarbons - Westborough Lab Associated sample(s): 01-04,06,08-09,11-12,14-15 Batch: WG978426-1 WG978426-2

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2,5-Dibromotoluene-PID	104		102		70-130
2,5-Dibromotoluene-FID	104		103		70-130

**PCBS**



Project Name: E. BOSTON

Lab Number: L1704816

Project Number: 43068

Report Date: 02/20/17

**SAMPLE RESULTS**

Lab ID: L1704816-01  
 Client ID: VES-113 (2-4)  
 Sample Location: E. BOSTON  
 Matrix: Soil  
 Analytical Method: 97,8082A  
 Analytical Date: 02/17/17 04:01  
 Analyst: HT  
 Percent Solids: 83%

Date Collected: 02/15/17 14:25  
 Date Received: 02/15/17  
 Field Prep: Not Specified  
 Extraction Method: EPA 3540C  
 Extraction Date: 02/16/17 00:30  
 Cleanup Method: EPA 3665A  
 Cleanup Date: 02/16/17  
 Cleanup Method: EPA 3660B  
 Cleanup Date: 02/16/17

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
<b>MCP Polychlorinated Biphenyls - Westborough Lab</b>							
Aroclor 1016	ND		ug/kg	39.7	--	1	A
Aroclor 1221	ND		ug/kg	39.7	--	1	A
Aroclor 1232	ND		ug/kg	39.7	--	1	A
Aroclor 1242	ND		ug/kg	39.7	--	1	A
Aroclor 1248	ND		ug/kg	39.7	--	1	A
Aroclor 1254	ND		ug/kg	39.7	--	1	A
Aroclor 1260	ND		ug/kg	39.7	--	1	A
Aroclor 1262	ND		ug/kg	39.7	--	1	A
Aroclor 1268	ND		ug/kg	39.7	--	1	A
PCBs, Total	ND		ug/kg	39.7	--	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	65		30-150	A
Decachlorobiphenyl	79		30-150	A
2,4,5,6-Tetrachloro-m-xylene	69		30-150	B
Decachlorobiphenyl	78		30-150	B

Project Name: E. BOSTON

Lab Number: L1704816

Project Number: 43068

Report Date: 02/20/17

**SAMPLE RESULTS**

Lab ID: L1704816-02  
 Client ID: VES-117 (2-4)  
 Sample Location: E. BOSTON  
 Matrix: Soil  
 Analytical Method: 97,8082A  
 Analytical Date: 02/17/17 04:14  
 Analyst: HT  
 Percent Solids: 73%

Date Collected: 02/15/17 14:00  
 Date Received: 02/15/17  
 Field Prep: Not Specified  
 Extraction Method: EPA 3540C  
 Extraction Date: 02/16/17 00:30  
 Cleanup Method: EPA 3665A  
 Cleanup Date: 02/16/17  
 Cleanup Method: EPA 3660B  
 Cleanup Date: 02/16/17

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
<b>MCP Polychlorinated Biphenyls - Westborough Lab</b>							
Aroclor 1016	ND		ug/kg	44.2	--	1	A
Aroclor 1221	ND		ug/kg	44.2	--	1	A
Aroclor 1232	ND		ug/kg	44.2	--	1	A
Aroclor 1242	ND		ug/kg	44.2	--	1	A
Aroclor 1248	ND		ug/kg	44.2	--	1	A
Aroclor 1254	ND		ug/kg	44.2	--	1	A
Aroclor 1260	ND		ug/kg	44.2	--	1	A
Aroclor 1262	ND		ug/kg	44.2	--	1	A
Aroclor 1268	ND		ug/kg	44.2	--	1	A
PCBs, Total	ND		ug/kg	44.2	--	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	55		30-150	A
Decachlorobiphenyl	58		30-150	A
2,4,5,6-Tetrachloro-m-xylene	56		30-150	B
Decachlorobiphenyl	69		30-150	B

Project Name: E. BOSTON

Lab Number: L1704816

Project Number: 43068

Report Date: 02/20/17

**SAMPLE RESULTS**

Lab ID: L1704816-03  
 Client ID: VES-122 (3-5)  
 Sample Location: E. BOSTON  
 Matrix: Soil  
 Analytical Method: 97,8082A  
 Analytical Date: 02/17/17 04:28  
 Analyst: JA  
 Percent Solids: 77%

Date Collected: 02/15/17 13:30  
 Date Received: 02/15/17  
 Field Prep: Not Specified  
 Extraction Method: EPA 3540C  
 Extraction Date: 02/16/17 00:30  
 Cleanup Method: EPA 3665A  
 Cleanup Date: 02/16/17  
 Cleanup Method: EPA 3660B  
 Cleanup Date: 02/16/17

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
<b>MCP Polychlorinated Biphenyls - Westborough Lab</b>							
Aroclor 1016	ND		ug/kg	42.0	--	1	A
Aroclor 1221	ND		ug/kg	42.0	--	1	A
Aroclor 1232	ND		ug/kg	42.0	--	1	A
Aroclor 1242	ND		ug/kg	42.0	--	1	A
Aroclor 1248	ND		ug/kg	42.0	--	1	A
Aroclor 1254	ND		ug/kg	42.0	--	1	A
Aroclor 1260	ND		ug/kg	42.0	--	1	A
Aroclor 1262	ND		ug/kg	42.0	--	1	A
Aroclor 1268	ND		ug/kg	42.0	--	1	A
PCBs, Total	ND		ug/kg	42.0	--	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	61		30-150	A
Decachlorobiphenyl	62		30-150	A
2,4,5,6-Tetrachloro-m-xylene	71		30-150	B
Decachlorobiphenyl	80		30-150	B

Project Name: E. BOSTON

Lab Number: L1704816

Project Number: 43068

Report Date: 02/20/17

**SAMPLE RESULTS**

Lab ID: L1704816-04  
 Client ID: VES-126 (3-5)  
 Sample Location: E. BOSTON  
 Matrix: Soil  
 Analytical Method: 97,8082A  
 Analytical Date: 02/17/17 04:42  
 Analyst: JA  
 Percent Solids: 76%

Date Collected: 02/15/17 12:55  
 Date Received: 02/15/17  
 Field Prep: Not Specified  
 Extraction Method: EPA 3540C  
 Extraction Date: 02/16/17 00:30  
 Cleanup Method: EPA 3665A  
 Cleanup Date: 02/16/17  
 Cleanup Method: EPA 3660B  
 Cleanup Date: 02/16/17

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
<b>MCP Polychlorinated Biphenyls - Westborough Lab</b>							
Aroclor 1016	ND		ug/kg	43.5	--	1	A
Aroclor 1221	ND		ug/kg	43.5	--	1	A
Aroclor 1232	ND		ug/kg	43.5	--	1	A
Aroclor 1242	ND		ug/kg	43.5	--	1	A
Aroclor 1248	ND		ug/kg	43.5	--	1	A
Aroclor 1254	ND		ug/kg	43.5	--	1	A
Aroclor 1260	ND		ug/kg	43.5	--	1	A
Aroclor 1262	ND		ug/kg	43.5	--	1	A
Aroclor 1268	ND		ug/kg	43.5	--	1	A
PCBs, Total	ND		ug/kg	43.5	--	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	67		30-150	A
Decachlorobiphenyl	57		30-150	A
2,4,5,6-Tetrachloro-m-xylene	73		30-150	B
Decachlorobiphenyl	73		30-150	B

Project Name: E. BOSTON

Lab Number: L1704816

Project Number: 43068

Report Date: 02/20/17

**SAMPLE RESULTS**

Lab ID: L1704816-06  
 Client ID: VES-114 (2-4)  
 Sample Location: E. BOSTON  
 Matrix: Soil  
 Analytical Method: 97,8082A  
 Analytical Date: 02/17/17 04:56  
 Analyst: JA  
 Percent Solids: 71%

Date Collected: 02/15/17 11:05  
 Date Received: 02/15/17  
 Field Prep: Not Specified  
 Extraction Method: EPA 3540C  
 Extraction Date: 02/16/17 00:30  
 Cleanup Method: EPA 3665A  
 Cleanup Date: 02/16/17  
 Cleanup Method: EPA 3660B  
 Cleanup Date: 02/16/17

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
<b>MCP Polychlorinated Biphenyls - Westborough Lab</b>							
Aroclor 1016	ND		ug/kg	46.3	--	1	A
Aroclor 1221	ND		ug/kg	46.3	--	1	A
Aroclor 1232	ND		ug/kg	46.3	--	1	A
Aroclor 1242	ND		ug/kg	46.3	--	1	A
Aroclor 1248	ND		ug/kg	46.3	--	1	A
Aroclor 1254	ND		ug/kg	46.3	--	1	A
Aroclor 1260	ND		ug/kg	46.3	--	1	B
Aroclor 1262	ND		ug/kg	46.3	--	1	A
Aroclor 1268	ND		ug/kg	46.3	--	1	A
PCBs, Total	ND		ug/kg	46.3	--	1	B

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	64		30-150	A
Decachlorobiphenyl	59		30-150	A
2,4,5,6-Tetrachloro-m-xylene	71		30-150	B
Decachlorobiphenyl	76		30-150	B

Project Name: E. BOSTON

Lab Number: L1704816

Project Number: 43068

Report Date: 02/20/17

**SAMPLE RESULTS**

Lab ID: L1704816-08  
 Client ID: VES-115 (2-4)  
 Sample Location: E. BOSTON  
 Matrix: Soil  
 Analytical Method: 97,8082A  
 Analytical Date: 02/17/17 05:10  
 Analyst: JA  
 Percent Solids: 65%

Date Collected: 02/15/17 10:35  
 Date Received: 02/15/17  
 Field Prep: Not Specified  
 Extraction Method: EPA 3540C  
 Extraction Date: 02/16/17 00:30  
 Cleanup Method: EPA 3665A  
 Cleanup Date: 02/16/17  
 Cleanup Method: EPA 3660B  
 Cleanup Date: 02/16/17

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
<b>MCP Polychlorinated Biphenyls - Westborough Lab</b>							
Aroclor 1016	ND		ug/kg	50.5	--	1	A
Aroclor 1221	ND		ug/kg	50.5	--	1	A
Aroclor 1232	ND		ug/kg	50.5	--	1	A
Aroclor 1242	ND		ug/kg	50.5	--	1	A
Aroclor 1248	ND		ug/kg	50.5	--	1	A
Aroclor 1254	ND		ug/kg	50.5	--	1	A
Aroclor 1260	ND		ug/kg	50.5	--	1	B
Aroclor 1262	ND		ug/kg	50.5	--	1	A
Aroclor 1268	ND		ug/kg	50.5	--	1	B
PCBs, Total	ND		ug/kg	50.5	--	1	B

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	73		30-150	A
Decachlorobiphenyl	60		30-150	A
2,4,5,6-Tetrachloro-m-xylene	74		30-150	B
Decachlorobiphenyl	80		30-150	B

Project Name: E. BOSTON

Lab Number: L1704816

Project Number: 43068

Report Date: 02/20/17

**SAMPLE RESULTS**

Lab ID: L1704816-09  
 Client ID: VES-118 (22-24)  
 Sample Location: E. BOSTON  
 Matrix: Soil  
 Analytical Method: 97,8082A  
 Analytical Date: 02/17/17 05:23  
 Analyst: JA  
 Percent Solids: 45%

Date Collected: 02/15/17 09:35  
 Date Received: 02/15/17  
 Field Prep: Not Specified  
 Extraction Method: EPA 3540C  
 Extraction Date: 02/16/17 00:30  
 Cleanup Method: EPA 3665A  
 Cleanup Date: 02/16/17  
 Cleanup Method: EPA 3660B  
 Cleanup Date: 02/16/17

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
<b>MCP Polychlorinated Biphenyls - Westborough Lab</b>							
Aroclor 1016	ND		ug/kg	72.2	--	1	A
Aroclor 1221	ND		ug/kg	72.2	--	1	A
Aroclor 1232	ND		ug/kg	72.2	--	1	A
Aroclor 1242	ND		ug/kg	72.2	--	1	A
Aroclor 1248	ND		ug/kg	72.2	--	1	A
Aroclor 1254	ND		ug/kg	72.2	--	1	A
Aroclor 1260	ND		ug/kg	72.2	--	1	A
Aroclor 1262	ND		ug/kg	72.2	--	1	A
Aroclor 1268	ND		ug/kg	72.2	--	1	A
PCBs, Total	ND		ug/kg	72.2	--	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	65		30-150	A
Decachlorobiphenyl	87		30-150	A
2,4,5,6-Tetrachloro-m-xylene	71		30-150	B
Decachlorobiphenyl	80		30-150	B

Project Name: E. BOSTON

Lab Number: L1704816

Project Number: 43068

Report Date: 02/20/17

**SAMPLE RESULTS**

Lab ID: L1704816-11  
 Client ID: VES-118 (2-4)  
 Sample Location: E. BOSTON  
 Matrix: Soil  
 Analytical Method: 97,8082A  
 Analytical Date: 02/17/17 05:37  
 Analyst: JA  
 Percent Solids: 80%

Date Collected: 02/15/17 09:10  
 Date Received: 02/15/17  
 Field Prep: Not Specified  
 Extraction Method: EPA 3540C  
 Extraction Date: 02/16/17 00:30  
 Cleanup Method: EPA 3665A  
 Cleanup Date: 02/16/17  
 Cleanup Method: EPA 3660B  
 Cleanup Date: 02/16/17

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
<b>MCP Polychlorinated Biphenyls - Westborough Lab</b>							
Aroclor 1016	ND		ug/kg	39.4	--	1	A
Aroclor 1221	ND		ug/kg	39.4	--	1	A
Aroclor 1232	ND		ug/kg	39.4	--	1	A
Aroclor 1242	ND		ug/kg	39.4	--	1	A
Aroclor 1248	ND		ug/kg	39.4	--	1	A
Aroclor 1254	ND		ug/kg	39.4	--	1	A
Aroclor 1260	ND		ug/kg	39.4	--	1	A
Aroclor 1262	ND		ug/kg	39.4	--	1	A
Aroclor 1268	ND		ug/kg	39.4	--	1	A
PCBs, Total	ND		ug/kg	39.4	--	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	67		30-150	A
Decachlorobiphenyl	69		30-150	A
2,4,5,6-Tetrachloro-m-xylene	62		30-150	B
Decachlorobiphenyl	72		30-150	B

Project Name: E. BOSTON

Lab Number: L1704816

Project Number: 43068

Report Date: 02/20/17

**SAMPLE RESULTS**

Lab ID: L1704816-12  
 Client ID: VES-127 (18-20)  
 Sample Location: E. BOSTON  
 Matrix: Soil  
 Analytical Method: 97,8082A  
 Analytical Date: 02/17/17 05:51  
 Analyst: JA  
 Percent Solids: 72%

Date Collected: 02/15/17 08:40  
 Date Received: 02/15/17  
 Field Prep: Not Specified  
 Extraction Method: EPA 3540C  
 Extraction Date: 02/16/17 00:30  
 Cleanup Method: EPA 3665A  
 Cleanup Date: 02/16/17  
 Cleanup Method: EPA 3660B  
 Cleanup Date: 02/16/17

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
<b>MCP Polychlorinated Biphenyls - Westborough Lab</b>							
Aroclor 1016	ND		ug/kg	43.8	--	1	A
Aroclor 1221	ND		ug/kg	43.8	--	1	A
Aroclor 1232	ND		ug/kg	43.8	--	1	A
Aroclor 1242	ND		ug/kg	43.8	--	1	A
Aroclor 1248	ND		ug/kg	43.8	--	1	A
Aroclor 1254	ND		ug/kg	43.8	--	1	A
Aroclor 1260	ND		ug/kg	43.8	--	1	A
Aroclor 1262	ND		ug/kg	43.8	--	1	A
Aroclor 1268	ND		ug/kg	43.8	--	1	A
PCBs, Total	ND		ug/kg	43.8	--	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	65		30-150	A
Decachlorobiphenyl	53		30-150	A
2,4,5,6-Tetrachloro-m-xylene	74		30-150	B
Decachlorobiphenyl	72		30-150	B

Project Name: E. BOSTON

Lab Number: L1704816

Project Number: 43068

Report Date: 02/20/17

**SAMPLE RESULTS**

Lab ID: L1704816-14  
 Client ID: VES-127 (2-4)  
 Sample Location: E. BOSTON  
 Matrix: Soil  
 Analytical Method: 97,8082A  
 Analytical Date: 02/17/17 06:05  
 Analyst: JA  
 Percent Solids: 72%

Date Collected: 02/15/17 08:30  
 Date Received: 02/15/17  
 Field Prep: Not Specified  
 Extraction Method: EPA 3540C  
 Extraction Date: 02/16/17 00:30  
 Cleanup Method: EPA 3665A  
 Cleanup Date: 02/16/17  
 Cleanup Method: EPA 3660B  
 Cleanup Date: 02/16/17

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
<b>MCP Polychlorinated Biphenyls - Westborough Lab</b>							
Aroclor 1016	ND		ug/kg	44.6	--	1	A
Aroclor 1221	ND		ug/kg	44.6	--	1	A
Aroclor 1232	ND		ug/kg	44.6	--	1	A
Aroclor 1242	ND		ug/kg	44.6	--	1	A
Aroclor 1248	ND		ug/kg	44.6	--	1	A
Aroclor 1254	ND		ug/kg	44.6	--	1	A
Aroclor 1260	ND		ug/kg	44.6	--	1	A
Aroclor 1262	ND		ug/kg	44.6	--	1	A
Aroclor 1268	ND		ug/kg	44.6	--	1	A
PCBs, Total	ND		ug/kg	44.6	--	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	80		30-150	A
Decachlorobiphenyl	66		30-150	A
2,4,5,6-Tetrachloro-m-xylene	81		30-150	B
Decachlorobiphenyl	76		30-150	B

Project Name: E. BOSTON

Lab Number: L1704816

Project Number: 43068

Report Date: 02/20/17

**SAMPLE RESULTS**

Lab ID: L1704816-15  
 Client ID: VES-106 (10-12)  
 Sample Location: E. BOSTON  
 Matrix: Soil  
 Analytical Method: 97,8082A  
 Analytical Date: 02/17/17 06:18  
 Analyst: JA  
 Percent Solids: 56%

Date Collected: 02/15/17 10:00  
 Date Received: 02/15/17  
 Field Prep: Not Specified  
 Extraction Method: EPA 3540C  
 Extraction Date: 02/16/17 00:30  
 Cleanup Method: EPA 3665A  
 Cleanup Date: 02/16/17  
 Cleanup Method: EPA 3660B  
 Cleanup Date: 02/16/17

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
<b>MCP Polychlorinated Biphenyls - Westborough Lab</b>							
Aroclor 1016	ND		ug/kg	59.4	--	1	A
Aroclor 1221	ND		ug/kg	59.4	--	1	A
Aroclor 1232	ND		ug/kg	59.4	--	1	A
Aroclor 1242	ND		ug/kg	59.4	--	1	A
Aroclor 1248	ND		ug/kg	59.4	--	1	A
Aroclor 1254	ND		ug/kg	59.4	--	1	A
Aroclor 1260	ND		ug/kg	59.4	--	1	A
Aroclor 1262	ND		ug/kg	59.4	--	1	A
Aroclor 1268	ND		ug/kg	59.4	--	1	A
PCBs, Total	ND		ug/kg	59.4	--	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	72		30-150	A
Decachlorobiphenyl	69		30-150	A
2,4,5,6-Tetrachloro-m-xylene	72		30-150	B
Decachlorobiphenyl	75		30-150	B

**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704816  
**Report Date:** 02/20/17

### Method Blank Analysis Batch Quality Control

Analytical Method: 97,8082A  
Analytical Date: 02/17/17 03:19  
Analyst: HT

Extraction Method: EPA 3540C  
Extraction Date: 02/16/17 00:30  
Cleanup Method: EPA 3665A  
Cleanup Date: 02/16/17  
Cleanup Method: EPA 3660B  
Cleanup Date: 02/16/17

Parameter	Result	Qualifier	Units	RL	MDL	Column
MCP Polychlorinated Biphenyls - Westborough Lab for sample(s): 01-04,06,08-09,11-12,14-15						Batch:
WG978226-1						
Aroclor 1016	ND		ug/kg	32.1	--	A
Aroclor 1221	ND		ug/kg	32.1	--	A
Aroclor 1232	ND		ug/kg	32.1	--	A
Aroclor 1242	ND		ug/kg	32.1	--	A
Aroclor 1248	ND		ug/kg	32.1	--	A
Aroclor 1254	ND		ug/kg	32.1	--	A
Aroclor 1260	ND		ug/kg	32.1	--	A
Aroclor 1262	ND		ug/kg	32.1	--	A
Aroclor 1268	ND		ug/kg	32.1	--	A
PCBs, Total	ND		ug/kg	32.1	--	A

Surrogate	%Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	80		30-150	A
Decachlorobiphenyl	89		30-150	A
2,4,5,6-Tetrachloro-m-xylene	87		30-150	B
Decachlorobiphenyl	81		30-150	B

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704816  
**Report Date:** 02/20/17

<b>Parameter</b>	<i>LCS</i>	<i>LCSD</i>	%Recovery		%Recovery	<i>RPD</i>	<i>Qual</i>	<i>RPD</i>	<i>Limits</i>	<i>Column</i>
	<i>%Recovery</i>	<i>Qual</i>	<i>%Recovery</i>	<i>Qual</i>	<i>Limits</i>					
MCP Polychlorinated Biphenyls - Westborough Lab Associated sample(s): 01-04,06,08-09,11-12,14-15 Batch: WG978226-2 WG978226-3										
Aroclor 1016	92		86		40-140	7			30	A
Aroclor 1260	110		100		40-140	10			30	A

<b>Surrogate</b>	<i>LCS</i>	<i>LCSD</i>	%Recovery		%Recovery	<i>Acceptance Criteria</i>	<i>Column</i>
	<i>%Recovery</i>	<i>Qual</i>	<i>%Recovery</i>	<i>Qual</i>	<i>Limits</i>		
2,4,5,6-Tetrachloro-m-xylene	83		75		30-150	A	
Decachlorobiphenyl	91		81		30-150	A	
2,4,5,6-Tetrachloro-m-xylene	87		83		30-150	B	
Decachlorobiphenyl	82		76		30-150	B	

# **PESTICIDES**



**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704816  
**Report Date:** 02/20/17

**SAMPLE RESULTS**

Lab ID: L1704816-05  
Client ID: VES-114 (0-2)  
Sample Location: E. BOSTON  
Matrix: Soil  
Analytical Method: 97,8081B  
Analytical Date: 02/16/17 22:38  
Analyst: RL  
Percent Solids: 59%

Date Collected: 02/15/17 11:00  
Date Received: 02/15/17  
Field Prep: Not Specified  
Extraction Method: EPA 3546  
Extraction Date: 02/15/17 21:47  
Cleanup Method: EPA 3620B  
Cleanup Date: 02/16/17

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
<b>MCP Organochlorine Pesticides - Westborough Lab</b>							
Delta-BHC	ND		ug/kg	13.4	--	1	A
Lindane	ND		ug/kg	4.48	--	1	A
Alpha-BHC	ND		ug/kg	5.61	--	1	A
Beta-BHC	ND		ug/kg	13.4	--	1	A
Heptachlor	ND		ug/kg	6.73	--	1	A
Aldrin	ND		ug/kg	13.4	--	1	A
Heptachlor epoxide	ND		ug/kg	25.2	--	1	A
Endrin	ND		ug/kg	5.61	--	1	A
Endrin ketone	ND		ug/kg	13.4	--	1	A
Dieldrin	ND		ug/kg	8.41	--	1	A
4,4'-DDE	ND		ug/kg	13.4	--	1	A
4,4'-DDD	ND		ug/kg	13.4	--	1	A
4,4'-DDT	ND		ug/kg	25.2	--	1	A
Endosulfan I	ND		ug/kg	13.4	--	1	A
Endosulfan II	ND		ug/kg	13.4	--	1	A
Endosulfan sulfate	ND		ug/kg	5.61	--	1	A
Methoxychlor	ND		ug/kg	25.2	--	1	A
Chlordane	ND		ug/kg	109	--	1	A
Hexachlorobenzene	ND		ug/kg	13.4	--	1	A
Toxaphene	ND		ug/kg	252	--	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	80		30-150	B
Decachlorobiphenyl	66		30-150	B
2,4,5,6-Tetrachloro-m-xylene	86		30-150	A
Decachlorobiphenyl	61		30-150	A

**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704816  
**Report Date:** 02/20/17

**SAMPLE RESULTS**

Lab ID: L1704816-07  
Client ID: VES-115 (0-2)  
Sample Location: E. BOSTON  
Matrix: Soil  
Analytical Method: 97,8081B  
Analytical Date: 02/16/17 22:51  
Analyst: RL  
Percent Solids: 71%

Date Collected: 02/15/17 10:30  
Date Received: 02/15/17  
Field Prep: Not Specified  
Extraction Method: EPA 3546  
Extraction Date: 02/15/17 21:47  
Cleanup Method: EPA 3620B  
Cleanup Date: 02/16/17

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
<b>MCP Organochlorine Pesticides - Westborough Lab</b>							
Delta-BHC	ND		ug/kg	10.8	--	1	A
Lindane	ND		ug/kg	3.59	--	1	A
Alpha-BHC	ND		ug/kg	4.49	--	1	A
Beta-BHC	ND		ug/kg	10.8	--	1	A
Heptachlor	ND		ug/kg	5.39	--	1	A
Aldrin	ND		ug/kg	10.8	--	1	A
Heptachlor epoxide	ND		ug/kg	20.2	--	1	A
Endrin	ND		ug/kg	4.49	--	1	A
Endrin ketone	ND		ug/kg	10.8	--	1	A
Dieldrin	ND		ug/kg	6.74	--	1	A
4,4'-DDE	ND		ug/kg	10.8	--	1	A
4,4'-DDD	ND		ug/kg	10.8	--	1	A
4,4'-DDT	ND		ug/kg	20.2	--	1	A
Endosulfan I	ND		ug/kg	10.8	--	1	A
Endosulfan II	ND		ug/kg	10.8	--	1	A
Endosulfan sulfate	ND		ug/kg	4.49	--	1	A
Methoxychlor	ND		ug/kg	20.2	--	1	A
Chlordane	ND		ug/kg	87.6	--	1	A
Hexachlorobenzene	ND		ug/kg	10.8	--	1	A
Toxaphene	ND		ug/kg	202	--	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	83		30-150	B
Decachlorobiphenyl	70		30-150	B
2,4,5,6-Tetrachloro-m-xylene	88		30-150	A
Decachlorobiphenyl	68		30-150	A

**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704816  
**Report Date:** 02/20/17

**SAMPLE RESULTS**

Lab ID: L1704816-10  
Client ID: VES-118 (0-2)  
Sample Location: E. BOSTON  
Matrix: Soil  
Analytical Method: 97,8081B  
Analytical Date: 02/16/17 23:03  
Analyst: RL  
Percent Solids: 83%

Date Collected: 02/15/17 09:05  
Date Received: 02/15/17  
Field Prep: Not Specified  
Extraction Method: EPA 3546  
Extraction Date: 02/15/17 21:47  
Cleanup Method: EPA 3620B  
Cleanup Date: 02/16/17

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
<b>MCP Organochlorine Pesticides - Westborough Lab</b>							
Delta-BHC	ND		ug/kg	9.26	--	1	A
Lindane	ND		ug/kg	3.08	--	1	A
Alpha-BHC	ND		ug/kg	3.86	--	1	A
Beta-BHC	ND		ug/kg	9.26	--	1	A
Heptachlor	ND		ug/kg	4.63	--	1	A
Aldrin	ND		ug/kg	9.26	--	1	A
Heptachlor epoxide	ND		ug/kg	17.4	--	1	A
Endrin	ND		ug/kg	3.86	--	1	A
Endrin ketone	ND		ug/kg	9.26	--	1	A
Dieldrin	ND		ug/kg	5.78	--	1	A
4,4'-DDE	ND		ug/kg	9.26	--	1	A
4,4'-DDD	ND		ug/kg	9.26	--	1	A
4,4'-DDT	ND		ug/kg	17.4	--	1	B
Endosulfan I	ND		ug/kg	9.26	--	1	A
Endosulfan II	ND		ug/kg	9.26	--	1	A
Endosulfan sulfate	ND		ug/kg	3.86	--	1	A
Methoxychlor	ND		ug/kg	17.4	--	1	A
Chlordane	ND		ug/kg	75.2	--	1	A
Hexachlorobenzene	ND		ug/kg	9.26	--	1	A
Toxaphene	ND		ug/kg	174	--	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	84		30-150	B
Decachlorobiphenyl	71		30-150	B
2,4,5,6-Tetrachloro-m-xylene	89		30-150	A
Decachlorobiphenyl	69		30-150	A

**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704816  
**Report Date:** 02/20/17

**SAMPLE RESULTS**

Lab ID: L1704816-13  
Client ID: VES-127 (0-2)  
Sample Location: E. BOSTON  
Matrix: Soil  
Analytical Method: 97,8081B  
Analytical Date: 02/16/17 23:16  
Analyst: RL  
Percent Solids: 80%

Date Collected: 02/15/17 08:25  
Date Received: 02/15/17  
Field Prep: Not Specified  
Extraction Method: EPA 3546  
Extraction Date: 02/15/17 21:47  
Cleanup Method: EPA 3620B  
Cleanup Date: 02/16/17

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
<b>MCP Organochlorine Pesticides - Westborough Lab</b>							
Delta-BHC	ND		ug/kg	9.93	--	1	A
Lindane	ND		ug/kg	3.31	--	1	A
Alpha-BHC	ND		ug/kg	4.14	--	1	A
Beta-BHC	ND		ug/kg	9.93	--	1	A
Heptachlor	ND		ug/kg	4.97	--	1	A
Aldrin	ND		ug/kg	9.93	--	1	A
Heptachlor epoxide	ND		ug/kg	18.6	--	1	B
Endrin	ND		ug/kg	4.14	--	1	A
Endrin ketone	ND		ug/kg	9.93	--	1	A
Dieldrin	ND		ug/kg	6.21	--	1	A
4,4'-DDE	27.9		ug/kg	9.93	--	1	A
4,4'-DDD	ND		ug/kg	9.93	--	1	A
4,4'-DDT	28.4		ug/kg	18.6	--	1	B
Endosulfan I	ND		ug/kg	9.93	--	1	A
Endosulfan II	ND		ug/kg	9.93	--	1	A
Endosulfan sulfate	ND		ug/kg	4.14	--	1	A
Methoxychlor	ND		ug/kg	18.6	--	1	A
Chlordane	ND		ug/kg	80.7	--	1	A
Hexachlorobenzene	ND		ug/kg	9.93	--	1	A
Toxaphene	ND		ug/kg	186	--	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	75		30-150	B
Decachlorobiphenyl	65		30-150	B
2,4,5,6-Tetrachloro-m-xylene	79		30-150	A
Decachlorobiphenyl	58		30-150	A

**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704816  
**Report Date:** 02/20/17

### Method Blank Analysis Batch Quality Control

Analytical Method: 97,8081B  
Analytical Date: 02/16/17 14:54  
Analyst: RL

Extraction Method: EPA 3546  
Extraction Date: 02/15/17 07:50  
Cleanup Method: EPA 3620B  
Cleanup Date: 02/15/17

Parameter	Result	Qualifier	Units	RL	MDL	Column
MCP Organochlorine Pesticides - Westborough Lab for sample(s):	05,07,10,13			Batch:	WG977965-1	
Delta-BHC	ND		ug/kg	7.71	--	A
Lindane	ND		ug/kg	2.57	--	A
Alpha-BHC	ND		ug/kg	3.21	--	A
Beta-BHC	ND		ug/kg	7.71	--	A
Heptachlor	ND		ug/kg	3.85	--	A
Aldrin	ND		ug/kg	7.71	--	A
Heptachlor epoxide	ND		ug/kg	14.4	--	A
Endrin	ND		ug/kg	3.21	--	A
Endrin ketone	ND		ug/kg	7.71	--	A
Dieldrin	ND		ug/kg	4.82	--	A
4,4'-DDE	ND		ug/kg	7.71	--	A
4,4'-DDD	ND		ug/kg	7.71	--	A
4,4'-DDT	ND		ug/kg	14.4	--	A
Endosulfan I	ND		ug/kg	7.71	--	A
Endosulfan II	ND		ug/kg	7.71	--	A
Endosulfan sulfate	ND		ug/kg	3.21	--	A
Methoxychlor	ND		ug/kg	14.4	--	A
Chlordane	ND		ug/kg	62.6	--	A
Hexachlorobenzene	ND		ug/kg	7.71	--	A
Toxaphene	ND		ug/kg	144	--	A

Surrogate	%Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	93		30-150	B
Decachlorobiphenyl	93		30-150	B
2,4,5,6-Tetrachloro-m-xylene	100		30-150	A
Decachlorobiphenyl	85		30-150	A



# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704816  
**Report Date:** 02/20/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
MCP Organochlorine Pesticides - Westborough Lab Associated sample(s): 05,07,10,13 Batch: WG977965-2 WG977965-3									
Delta-BHC	101		76		40-140	28		30	A
Lindane	104		79		40-140	27		30	A
Alpha-BHC	116		90		40-140	25		30	A
Beta-BHC	114		89		40-140	25		30	A
Heptachlor	111		83		40-140	29		30	A
Aldrin	125		93		40-140	29		30	A
Heptachlor epoxide	119		88		40-140	30		30	A
Endrin	123		89		40-140	32	Q	30	A
Endrin ketone	94		71		40-140	28		30	A
Dieldrin	127		95		40-140	29		30	A
4,4'-DDE	126		89		40-140	34	Q	30	A
4,4'-DDD	123		86		40-140	35	Q	30	A
4,4'-DDT	116		82		40-140	34	Q	30	A
Endosulfan I	122		87		40-140	33	Q	30	A
Endosulfan II	121		86		40-140	34	Q	30	A
Endosulfan sulfate	64		50		40-140	25		30	A
Methoxychlor	115		85		40-140	30		30	A
Hexachlorobenzene	100		79		40-140	23		30	A

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704816  
**Report Date:** 02/20/17

<b>Parameter</b>	<i>LCS</i> <i>%Recovery</i>	<i>Qual</i>	<i>LCSD</i> <i>%Recovery</i>	<i>Qual</i>	<i>%Recovery</i> <i>Limits</i>	<i>RPD</i>	<i>Qual</i>	<i>RPD</i> <i>Limits</i>
	MCP Organochlorine Pesticides - Westborough Lab Associated sample(s): 05,07,10,13 Batch: WG977965-2 WG977965-3							
<i>Surrogate</i>	<i>LCS</i> <i>%Recovery</i>	<i>Qual</i>	<i>LCSD</i> <i>%Recovery</i>	<i>Qual</i>	<i>Acceptance</i> <i>Criteria</i>		<i>Column</i>	
2,4,5,6-Tetrachloro-m-xylene	100		79		30-150	B		
Decachlorobiphenyl	95		70		30-150	B		
2,4,5,6-Tetrachloro-m-xylene	104		81		30-150	A		
Decachlorobiphenyl	88		69		30-150	A		

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704816  
**Report Date:** 02/20/17

<b>Parameter</b>	<i>LCS</i> %Recovery	<i>Qual</i>	<i>LCSD</i> %Recovery	<i>Qual</i>	<i>%Recovery</i> <i>Limits</i>	<i>RPD</i>	<i>Qual</i>	<i>RPD</i> <i>Limits</i>	<i>Column</i>
MCP Organochlorine Pesticides - Westborough Lab Associated sample(s): 05,07,10,13 Batch: WG977965-4 WG977965-5									
Toxaphene	95		97		40-140	2		30	A

<b>Surrogate</b>	<i>LCS</i> %Recovery	<i>Qual</i>	<i>LCSD</i> %Recovery	<i>Qual</i>	<i>Acceptance</i> <i>Criteria</i>	<i>Column</i>
2,4,5,6-Tetrachloro-m-xylene	81		81		30-150	B
Decachlorobiphenyl	74		78		30-150	B
2,4,5,6-Tetrachloro-m-xylene	85		84		30-150	A
Decachlorobiphenyl	64		64		30-150	A

## METALS



**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704816  
**Report Date:** 02/20/17

**SAMPLE RESULTS**

Lab ID: L1704816-01 Date Collected: 02/15/17 14:25  
Client ID: VES-113 (2-4) Date Received: 02/15/17  
Sample Location: E. BOSTON Field Prep: Not Specified  
Matrix: Soil  
Percent Solids: 83%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
<b>MCP Total Metals - Mansfield Lab</b>											
Arsenic, Total	9.8		mg/kg	0.47	--	1	02/16/17 22:00	02/17/17 01:31	EPA 3050B	97,6010C	MC
Barium, Total	150		mg/kg	0.47	--	1	02/16/17 22:00	02/17/17 01:31	EPA 3050B	97,6010C	MC
Cadmium, Total	0.52		mg/kg	0.47	--	1	02/16/17 22:00	02/17/17 01:31	EPA 3050B	97,6010C	MC
Chromium, Total	14		mg/kg	0.47	--	1	02/16/17 22:00	02/17/17 01:31	EPA 3050B	97,6010C	MC
Lead, Total	360		mg/kg	2.4	--	1	02/16/17 22:00	02/17/17 01:31	EPA 3050B	97,6010C	MC
Mercury, Total	1.00		mg/kg	0.076	--	1	02/16/17 09:45	02/16/17 13:35	EPA 7471B	97,7471B	BV
Selenium, Total	ND		mg/kg	2.4	--	1	02/16/17 22:00	02/17/17 01:31	EPA 3050B	97,6010C	MC
Silver, Total	0.60		mg/kg	0.47	--	1	02/16/17 22:00	02/17/17 01:31	EPA 3050B	97,6010C	MC



**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704816  
**Report Date:** 02/20/17

**SAMPLE RESULTS**

Lab ID: L1704816-02 Date Collected: 02/15/17 14:00  
Client ID: VES-117 (2-4) Date Received: 02/15/17  
Sample Location: E. BOSTON Field Prep: Not Specified  
Matrix: Soil  
Percent Solids: 73%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
<b>MCP Total Metals - Mansfield Lab</b>											
Arsenic, Total	26		mg/kg	0.54	--	1	02/16/17 22:00	02/17/17 01:35	EPA 3050B	97,6010C	MC
Barium, Total	320		mg/kg	0.54	--	1	02/16/17 22:00	02/17/17 01:35	EPA 3050B	97,6010C	MC
Cadmium, Total	30		mg/kg	0.54	--	1	02/16/17 22:00	02/17/17 01:35	EPA 3050B	97,6010C	MC
Chromium, Total	19		mg/kg	0.54	--	1	02/16/17 22:00	02/17/17 01:35	EPA 3050B	97,6010C	MC
Lead, Total	1600		mg/kg	2.7	--	1	02/16/17 22:00	02/17/17 01:35	EPA 3050B	97,6010C	MC
Mercury, Total	3.93		mg/kg	0.437	--	5	02/16/17 09:45	02/16/17 14:32	EPA 7471B	97,7471B	BV
Selenium, Total	ND		mg/kg	2.7	--	1	02/16/17 22:00	02/17/17 01:35	EPA 3050B	97,6010C	MC
Silver, Total	0.95		mg/kg	0.54	--	1	02/16/17 22:00	02/17/17 01:35	EPA 3050B	97,6010C	MC



**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704816  
**Report Date:** 02/20/17

**SAMPLE RESULTS**

Lab ID: L1704816-03 Date Collected: 02/15/17 13:30  
Client ID: VES-122 (3-5) Date Received: 02/15/17  
Sample Location: E. BOSTON Field Prep: Not Specified  
Matrix: Soil  
Percent Solids: 77%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
<b>MCP Total Metals - Mansfield Lab</b>											
Arsenic, Total	11		mg/kg	0.50	--	1	02/16/17 22:00	02/17/17 01:39	EPA 3050B	97,6010C	MC
Barium, Total	150		mg/kg	0.50	--	1	02/16/17 22:00	02/17/17 01:39	EPA 3050B	97,6010C	MC
Cadmium, Total	ND		mg/kg	0.50	--	1	02/16/17 22:00	02/17/17 01:39	EPA 3050B	97,6010C	MC
Chromium, Total	12		mg/kg	0.50	--	1	02/16/17 22:00	02/17/17 01:39	EPA 3050B	97,6010C	MC
Lead, Total	470		mg/kg	2.5	--	1	02/16/17 22:00	02/17/17 01:39	EPA 3050B	97,6010C	MC
Mercury, Total	11.8		mg/kg	0.821	--	10	02/16/17 09:45	02/16/17 14:34	EPA 7471B	97,7471B	BV
Selenium, Total	ND		mg/kg	2.5	--	1	02/16/17 22:00	02/17/17 01:39	EPA 3050B	97,6010C	MC
Silver, Total	ND		mg/kg	0.50	--	1	02/16/17 22:00	02/17/17 01:39	EPA 3050B	97,6010C	MC



**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704816  
**Report Date:** 02/20/17

**SAMPLE RESULTS**

Lab ID: L1704816-04 Date Collected: 02/15/17 12:55  
Client ID: VES-126 (3-5) Date Received: 02/15/17  
Sample Location: E. BOSTON Field Prep: Not Specified  
Matrix: Soil  
Percent Solids: 76%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
<b>MCP Total Metals - Mansfield Lab</b>											
Arsenic, Total	8.6		mg/kg	0.52	--	1	02/16/17 22:00	02/17/17 01:47	EPA 3050B	97,6010C	MC
Barium, Total	130		mg/kg	0.52	--	1	02/16/17 22:00	02/17/17 01:47	EPA 3050B	97,6010C	MC
Cadmium, Total	ND		mg/kg	0.52	--	1	02/16/17 22:00	02/17/17 01:47	EPA 3050B	97,6010C	MC
Chromium, Total	20		mg/kg	0.52	--	1	02/16/17 22:00	02/17/17 01:47	EPA 3050B	97,6010C	MC
Lead, Total	340		mg/kg	2.6	--	1	02/16/17 22:00	02/17/17 01:47	EPA 3050B	97,6010C	MC
Mercury, Total	0.841		mg/kg	0.083	--	1	02/16/17 09:45	02/16/17 13:41	EPA 7471B	97,7471B	BV
Selenium, Total	ND		mg/kg	2.6	--	1	02/16/17 22:00	02/17/17 01:47	EPA 3050B	97,6010C	MC
Silver, Total	1.2		mg/kg	0.52	--	1	02/16/17 22:00	02/17/17 01:47	EPA 3050B	97,6010C	MC



**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704816  
**Report Date:** 02/20/17

**SAMPLE RESULTS**

Lab ID: L1704816-06 Date Collected: 02/15/17 11:05  
Client ID: VES-114 (2-4) Date Received: 02/15/17  
Sample Location: E. BOSTON Field Prep: Not Specified  
Matrix: Soil  
Percent Solids: 71%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
<b>MCP Total Metals - Mansfield Lab</b>											
Arsenic, Total	14		mg/kg	0.55	--	1	02/16/17 22:00	02/17/17 01:51	EPA 3050B	97,6010C	MC
Barium, Total	310		mg/kg	0.55	--	1	02/16/17 22:00	02/17/17 01:51	EPA 3050B	97,6010C	MC
Cadmium, Total	4.4		mg/kg	0.55	--	1	02/16/17 22:00	02/17/17 01:51	EPA 3050B	97,6010C	MC
Chromium, Total	31		mg/kg	0.55	--	1	02/16/17 22:00	02/17/17 01:51	EPA 3050B	97,6010C	MC
Lead, Total	1900		mg/kg	2.7	--	1	02/16/17 22:00	02/17/17 01:51	EPA 3050B	97,6010C	MC
Mercury, Total	5.55		mg/kg	0.462	--	5	02/16/17 09:45	02/16/17 14:36	EPA 7471B	97,7471B	BV
Selenium, Total	5.6		mg/kg	2.7	--	1	02/16/17 22:00	02/17/17 01:51	EPA 3050B	97,6010C	MC
Silver, Total	1.6		mg/kg	0.55	--	1	02/16/17 22:00	02/17/17 01:51	EPA 3050B	97,6010C	MC



**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704816  
**Report Date:** 02/20/17

**SAMPLE RESULTS**

Lab ID: L1704816-08 Date Collected: 02/15/17 10:35  
Client ID: VES-115 (2-4) Date Received: 02/15/17  
Sample Location: E. BOSTON Field Prep: Not Specified  
Matrix: Soil  
Percent Solids: 65%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
<b>MCP Total Metals - Mansfield Lab</b>											
Arsenic, Total	9.3		mg/kg	0.61	--	1	02/16/17 22:00	02/17/17 01:55	EPA 3050B	97,6010C	MC
Barium, Total	150		mg/kg	0.61	--	1	02/16/17 22:00	02/17/17 01:55	EPA 3050B	97,6010C	MC
Cadmium, Total	0.69		mg/kg	0.61	--	1	02/16/17 22:00	02/17/17 01:55	EPA 3050B	97,6010C	MC
Chromium, Total	20		mg/kg	0.61	--	1	02/16/17 22:00	02/17/17 01:55	EPA 3050B	97,6010C	MC
Lead, Total	150		mg/kg	3.0	--	1	02/16/17 22:00	02/17/17 01:55	EPA 3050B	97,6010C	MC
Mercury, Total	0.436		mg/kg	0.096	--	1	02/16/17 09:45	02/16/17 13:49	EPA 7471B	97,7471B	BV
Selenium, Total	ND		mg/kg	3.0	--	1	02/16/17 22:00	02/17/17 01:55	EPA 3050B	97,6010C	MC
Silver, Total	ND		mg/kg	0.61	--	1	02/16/17 22:00	02/17/17 01:55	EPA 3050B	97,6010C	MC



**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704816  
**Report Date:** 02/20/17

**SAMPLE RESULTS**

Lab ID: L1704816-09  
Client ID: VES-118 (22-24)  
Sample Location: E. BOSTON  
Matrix: Soil  
Percent Solids: 45%

Date Collected: 02/15/17 09:35  
Date Received: 02/15/17  
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
<b>MCP Total Metals - Mansfield Lab</b>											
Arsenic, Total	25		mg/kg	0.88	--	1	02/16/17 22:00	02/17/17 02:15	EPA 3050B	97,6010C	MC
Barium, Total	410		mg/kg	0.88	--	1	02/16/17 22:00	02/17/17 02:15	EPA 3050B	97,6010C	MC
Cadmium, Total	2.8		mg/kg	0.88	--	1	02/16/17 22:00	02/17/17 02:15	EPA 3050B	97,6010C	MC
Chromium, Total	51		mg/kg	0.88	--	1	02/16/17 22:00	02/17/17 02:15	EPA 3050B	97,6010C	MC
Lead, Total	1600		mg/kg	4.4	--	1	02/16/17 22:00	02/17/17 02:15	EPA 3050B	97,6010C	MC
Mercury, Total	9.99		mg/kg	0.724	--	5	02/16/17 09:45	02/16/17 14:39	EPA 7471B	97,7471B	BV
Selenium, Total	ND		mg/kg	4.4	--	1	02/16/17 22:00	02/17/17 02:15	EPA 3050B	97,6010C	MC
Silver, Total	2.0		mg/kg	0.88	--	1	02/16/17 22:00	02/17/17 02:15	EPA 3050B	97,6010C	MC



**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704816  
**Report Date:** 02/20/17

**SAMPLE RESULTS**

Lab ID: L1704816-11 Date Collected: 02/15/17 09:10  
Client ID: VES-118 (2-4) Date Received: 02/15/17  
Sample Location: E. BOSTON Field Prep: Not Specified  
Matrix: Soil  
Percent Solids: 80%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
<b>MCP Total Metals - Mansfield Lab</b>											
Arsenic, Total	14		mg/kg	0.48	--	1	02/16/17 22:00	02/17/17 02:19	EPA 3050B	97,6010C	MC
Barium, Total	120		mg/kg	0.48	--	1	02/16/17 22:00	02/17/17 02:19	EPA 3050B	97,6010C	MC
Cadmium, Total	1.7		mg/kg	0.48	--	1	02/16/17 22:00	02/17/17 02:19	EPA 3050B	97,6010C	MC
Chromium, Total	28		mg/kg	0.48	--	1	02/16/17 22:00	02/17/17 02:19	EPA 3050B	97,6010C	MC
Lead, Total	640		mg/kg	2.4	--	1	02/16/17 22:00	02/17/17 02:19	EPA 3050B	97,6010C	MC
Mercury, Total	2.03		mg/kg	0.082	--	1	02/16/17 09:45	02/16/17 13:53	EPA 7471B	97,7471B	BV
Selenium, Total	ND		mg/kg	2.4	--	1	02/16/17 22:00	02/17/17 02:19	EPA 3050B	97,6010C	MC
Silver, Total	1.1		mg/kg	0.48	--	1	02/16/17 22:00	02/17/17 02:19	EPA 3050B	97,6010C	MC



**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704816  
**Report Date:** 02/20/17

**SAMPLE RESULTS**

Lab ID: L1704816-12 Date Collected: 02/15/17 08:40  
Client ID: VES-127 (18-20) Date Received: 02/15/17  
Sample Location: E. BOSTON Field Prep: Not Specified  
Matrix: Soil  
Percent Solids: 72%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
<b>MCP Total Metals - Mansfield Lab</b>											
Arsenic, Total	4.7		mg/kg	0.54	--	1	02/16/17 22:00	02/17/17 02:23	EPA 3050B	97,6010C	MC
Barium, Total	22		mg/kg	0.54	--	1	02/16/17 22:00	02/17/17 02:23	EPA 3050B	97,6010C	MC
Cadmium, Total	ND		mg/kg	0.54	--	1	02/16/17 22:00	02/17/17 02:23	EPA 3050B	97,6010C	MC
Chromium, Total	19		mg/kg	0.54	--	1	02/16/17 22:00	02/17/17 02:23	EPA 3050B	97,6010C	MC
Lead, Total	4.9		mg/kg	2.7	--	1	02/16/17 22:00	02/17/17 02:23	EPA 3050B	97,6010C	MC
Mercury, Total	ND		mg/kg	0.093	--	1	02/16/17 09:45	02/16/17 13:55	EPA 7471B	97,7471B	BV
Selenium, Total	ND		mg/kg	2.7	--	1	02/16/17 22:00	02/17/17 02:23	EPA 3050B	97,6010C	MC
Silver, Total	ND		mg/kg	0.54	--	1	02/16/17 22:00	02/17/17 02:23	EPA 3050B	97,6010C	MC



**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704816  
**Report Date:** 02/20/17

**SAMPLE RESULTS**

Lab ID: L1704816-14 Date Collected: 02/15/17 08:30  
Client ID: VES-127 (2-4) Date Received: 02/15/17  
Sample Location: E. BOSTON Field Prep: Not Specified  
Matrix: Soil  
Percent Solids: 72%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
<b>MCP Total Metals - Mansfield Lab</b>											
Arsenic, Total	15		mg/kg	0.54	--	1	02/16/17 22:00	02/17/17 02:27	EPA 3050B	97,6010C	MC
Barium, Total	170		mg/kg	0.54	--	1	02/16/17 22:00	02/17/17 02:27	EPA 3050B	97,6010C	MC
Cadmium, Total	ND		mg/kg	0.54	--	1	02/16/17 22:00	02/17/17 02:27	EPA 3050B	97,6010C	MC
Chromium, Total	11		mg/kg	0.54	--	1	02/16/17 22:00	02/17/17 02:27	EPA 3050B	97,6010C	MC
Lead, Total	280		mg/kg	2.7	--	1	02/16/17 22:00	02/17/17 02:27	EPA 3050B	97,6010C	MC
Mercury, Total	0.606		mg/kg	0.088	--	1	02/16/17 09:45	02/16/17 13:57	EPA 7471B	97,7471B	BV
Selenium, Total	ND		mg/kg	2.7	--	1	02/16/17 22:00	02/17/17 02:27	EPA 3050B	97,6010C	MC
Silver, Total	ND		mg/kg	0.54	--	1	02/16/17 22:00	02/17/17 02:27	EPA 3050B	97,6010C	MC



**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704816  
**Report Date:** 02/20/17

**SAMPLE RESULTS**

Lab ID: L1704816-15  
Client ID: VES-106 (10-12)  
Sample Location: E. BOSTON  
Matrix: Soil  
Percent Solids: 56%

Date Collected: 02/15/17 10:00  
Date Received: 02/15/17  
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
<b>MCP Total Metals - Mansfield Lab</b>											
Arsenic, Total	7.6		mg/kg	0.70	--	1	02/16/17 22:00	02/17/17 02:31	EPA 3050B	97,6010C	MC
Barium, Total	46		mg/kg	0.70	--	1	02/16/17 22:00	02/17/17 02:31	EPA 3050B	97,6010C	MC
Cadmium, Total	ND		mg/kg	0.70	--	1	02/16/17 22:00	02/17/17 02:31	EPA 3050B	97,6010C	MC
Chromium, Total	31		mg/kg	0.70	--	1	02/16/17 22:00	02/17/17 02:31	EPA 3050B	97,6010C	MC
Lead, Total	94		mg/kg	3.5	--	1	02/16/17 22:00	02/17/17 02:31	EPA 3050B	97,6010C	MC
Mercury, Total	ND		mg/kg	0.113	--	1	02/16/17 09:45	02/16/17 13:58	EPA 7471B	97,7471B	BV
Selenium, Total	ND		mg/kg	3.5	--	1	02/16/17 22:00	02/17/17 02:31	EPA 3050B	97,6010C	MC
Silver, Total	ND		mg/kg	0.70	--	1	02/16/17 22:00	02/17/17 02:31	EPA 3050B	97,6010C	MC



**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704816  
**Report Date:** 02/20/17

## Method Blank Analysis Batch Quality Control

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
MCP Total Metals - Mansfield Lab for sample(s): 01-04,06,08-09,11-12,14-15 Batch: WG978269-1									
Mercury, Total	ND	mg/kg	0.083	--	1	02/16/17 09:45	02/16/17 13:12	97,7471B	BV

### Prep Information

Digestion Method: EPA 7471B

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
MCP Total Metals - Mansfield Lab for sample(s): 01-04,06,08-09,11-12,14-15 Batch: WG978557-1									
Arsenic, Total	ND	mg/kg	0.40	--	1	02/16/17 22:00	02/17/17 00:38	97,6010C	MC
Barium, Total	ND	mg/kg	0.40	--	1	02/16/17 22:00	02/17/17 00:38	97,6010C	MC
Cadmium, Total	ND	mg/kg	0.40	--	1	02/16/17 22:00	02/17/17 00:38	97,6010C	MC
Chromium, Total	ND	mg/kg	0.40	--	1	02/16/17 22:00	02/17/17 00:38	97,6010C	MC
Lead, Total	ND	mg/kg	2.0	--	1	02/16/17 22:00	02/17/17 00:38	97,6010C	MC
Selenium, Total	ND	mg/kg	2.0	--	1	02/16/17 22:00	02/17/17 00:38	97,6010C	MC
Silver, Total	ND	mg/kg	0.40	--	1	02/16/17 22:00	02/17/17 00:38	97,6010C	MC

### Prep Information

Digestion Method: EPA 3050B

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704816  
**Report Date:** 02/20/17

Parameter	LCS %Recovery	LCSD %Recovery	%Recovery Limits		RPD	Qual	RPD Limits
MCP Total Metals - Mansfield Lab Associated sample(s): 01-04,06,08-09,11-12,14-15 Batch: WG978269-2 WG978269-3 SRM Lot Number: D091-540							
Mercury, Total	98	107	72-128	9		30	
MCP Total Metals - Mansfield Lab Associated sample(s): 01-04,06,08-09,11-12,14-15 Batch: WG978557-2 WG978557-3 SRM Lot Number: D091-540							
Arsenic, Total	103	83	80-121	22		30	
Barium, Total	100	86	84-117	15		30	
Cadmium, Total	106	104	83-117	2		30	
Chromium, Total	98	84	80-119	15		30	
Lead, Total	96	82	82-118	16		30	
Selenium, Total	101	84	79-121	18		30	
Silver, Total	93	86	76-124	8		30	

# **INORGANICS & MISCELLANEOUS**



**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704816  
**Report Date:** 02/20/17

## SAMPLE RESULTS

Lab ID: L1704816-01  
Client ID: VES-113 (2-4)  
Sample Location: E. BOSTON  
Matrix: Soil

Date Collected: 02/15/17 14:25  
Date Received: 02/15/17  
Field Prep: Not Specified

### Test Material Information

Source of Material: Unknown  
Description of Material: Non-Metallic - Damp Soil  
Particle Size: Medium  
Preliminary Burning Time (sec): 120

Parameter	Result	Date Analyzed	Analytical Method	Analyst
<b>Ignitability of Solids - Westborough Lab</b>				
Ignitability	NI	02/16/17 11:12	1,1030	AB



**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704816  
**Report Date:** 02/20/17

### SAMPLE RESULTS

Lab ID: L1704816-02  
Client ID: VES-117 (2-4)  
Sample Location: E. BOSTON  
Matrix: Soil

Date Collected: 02/15/17 14:00  
Date Received: 02/15/17  
Field Prep: Not Specified

### Test Material Information

Source of Material: Unknown  
Description of Material: Non-Metallic - Damp Soil  
Particle Size: Medium  
Preliminary Burning Time (sec): 120

Parameter	Result	Date Analyzed	Analytical Method	Analyst
<b>Ignitability of Solids - Westborough Lab</b>				
Ignitability	NI	02/16/17 11:12	1,1030	AB



**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704816  
**Report Date:** 02/20/17

## SAMPLE RESULTS

Lab ID: L1704816-03  
Client ID: VES-122 (3-5)  
Sample Location: E. BOSTON  
Matrix: Soil

Date Collected: 02/15/17 13:30  
Date Received: 02/15/17  
Field Prep: Not Specified

### Test Material Information

Source of Material: Unknown  
Description of Material: Non-Metallic - Damp Soil  
Particle Size: Medium  
Preliminary Burning Time (sec): 120

Parameter	Result	Date Analyzed	Analytical Method	Analyst
<b>Ignitability of Solids - Westborough Lab</b>				
Ignitability	NI	02/16/17 11:12	1,1030	AB



**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704816  
**Report Date:** 02/20/17

## SAMPLE RESULTS

Lab ID: L1704816-04  
Client ID: VES-126 (3-5)  
Sample Location: E. BOSTON  
Matrix: Soil

Date Collected: 02/15/17 12:55  
Date Received: 02/15/17  
Field Prep: Not Specified

### Test Material Information

Source of Material: Unknown  
Description of Material: Non-Metallic - Damp Soil  
Particle Size: Coarse  
Preliminary Burning Time (sec): 120

Parameter	Result	Date Analyzed	Analytical Method	Analyst
Ignitability of Solids - Westborough Lab				
Ignitability	NI	02/16/17 11:12	1,1030	AB



**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704816  
**Report Date:** 02/20/17

### SAMPLE RESULTS

Lab ID: L1704816-06  
Client ID: VES-114 (2-4)  
Sample Location: E. BOSTON  
Matrix: Soil

Date Collected: 02/15/17 11:05  
Date Received: 02/15/17  
Field Prep: Not Specified

### Test Material Information

Source of Material: Unknown  
Description of Material: Non-Metallic - Damp Soil  
Particle Size: Medium  
Preliminary Burning Time (sec): 120

Parameter	Result	Date Analyzed	Analytical Method	Analyst
Ignitability of Solids - Westborough Lab				
Ignitability	NI	02/16/17 11:12	1,1030	AB



**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704816  
**Report Date:** 02/20/17

### SAMPLE RESULTS

Lab ID: L1704816-08  
Client ID: VES-115 (2-4)  
Sample Location: E. BOSTON  
Matrix: Soil

Date Collected: 02/15/17 10:35  
Date Received: 02/15/17  
Field Prep: Not Specified

### Test Material Information

Source of Material: Unknown  
Description of Material: Non-Metallic - Damp Soil  
Particle Size: Fine  
Preliminary Burning Time (sec): 120

Parameter	Result	Date Analyzed	Analytical Method	Analyst
<b>Ignitability of Solids - Westborough Lab</b>				
Ignitability	NI	02/16/17 11:12	1,1030	AB



**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704816  
**Report Date:** 02/20/17

## SAMPLE RESULTS

Lab ID: L1704816-09  
Client ID: VES-118 (22-24)  
Sample Location: E. BOSTON  
Matrix: Soil

Date Collected: 02/15/17 09:35  
Date Received: 02/15/17  
Field Prep: Not Specified

### Test Material Information

Source of Material: Unknown  
Description of Material: Non-Metallic - Wet Clay  
Particle Size: Medium  
Preliminary Burning Time (sec): 120

Parameter	Result	Date Analyzed	Analytical Method	Analyst
Ignitability of Solids - Westborough Lab				
Ignitability	NI	02/16/17 11:12	1,1030	AB



**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704816  
**Report Date:** 02/20/17

### SAMPLE RESULTS

Lab ID: L1704816-11  
Client ID: VES-118 (2-4)  
Sample Location: E. BOSTON  
Matrix: Soil

Date Collected: 02/15/17 09:10  
Date Received: 02/15/17  
Field Prep: Not Specified

### Test Material Information

Source of Material: Unknown  
Description of Material: Non-Metallic - Damp Clay  
Particle Size: Medium  
Preliminary Burning Time (sec): 120

Parameter	Result	Date Analyzed	Analytical Method	Analyst
Ignitability of Solids - Westborough Lab				
Ignitability	NI	02/16/17 11:12	1,1030	AB



**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704816  
**Report Date:** 02/20/17

## SAMPLE RESULTS

Lab ID: L1704816-12  
Client ID: VES-127 (18-20)  
Sample Location: E. BOSTON  
Matrix: Soil

Date Collected: 02/15/17 08:40  
Date Received: 02/15/17  
Field Prep: Not Specified

### Test Material Information

Source of Material:	Unknown
Description of Material:	Non-Metallic - Damp Clay
Particle Size:	Fine
Preliminary Burning Time (sec):	120

Parameter	Result	Date Analyzed	Analytical Method	Analyst
<b>Ignitability of Solids - Westborough Lab</b>				
Ignitability	NI	02/16/17 11:12	1,1030	AB



**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704816  
**Report Date:** 02/20/17

## SAMPLE RESULTS

Lab ID: L1704816-14  
Client ID: VES-127 (2-4)  
Sample Location: E. BOSTON  
Matrix: Soil

Date Collected: 02/15/17 08:30  
Date Received: 02/15/17  
Field Prep: Not Specified

### Test Material Information

Source of Material: Unknown  
Description of Material: Non-Metallic - Damp Soil  
Particle Size: Medium  
Preliminary Burning Time (sec): 120

Parameter	Result	Date Analyzed	Analytical Method	Analyst
<b>Ignitability of Solids - Westborough Lab</b>				
Ignitability	NI	02/16/17 11:12	1,1030	AB



**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704816  
**Report Date:** 02/20/17

## SAMPLE RESULTS

Lab ID: L1704816-15  
Client ID: VES-106 (10-12)  
Sample Location: E. BOSTON  
Matrix: Soil

Date Collected: 02/15/17 10:00  
Date Received: 02/15/17  
Field Prep: Not Specified

### Test Material Information

Source of Material: Unknown  
Description of Material: Non-Metallic - Damp Clay  
Particle Size: Medium  
Preliminary Burning Time (sec): 120

Parameter	Result	Date Analyzed	Analytical Method	Analyst
Ignitability of Solids - Westborough Lab				
Ignitability	NI	02/16/17 15:37	1,1030	AB



**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704816  
**Report Date:** 02/20/17

### SAMPLE RESULTS

Lab ID: L1704816-01  
Client ID: VES-113 (2-4)  
Sample Location: E. BOSTON  
Matrix: Soil

Date Collected: 02/15/17 14:25  
Date Received: 02/15/17  
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>General Chemistry - Westborough Lab</b>										
Specific Conductance @ 25 C	48		umhos/cm	10	--	1	-	02/16/17 07:05	1,9050A	KA
Solids, Total	83.0	%		0.100	NA	1	-	02/16/17 14:28	121,2540G	RI
pH (H)	7.7	SU		-	NA	1	-	02/16/17 06:40	1,9045D	VB
Cyanide, Reactive	ND		mg/kg	10	--	1	02/16/17 22:20	02/16/17 23:25	1,7.3	TL
Sulfide, Reactive	ND		mg/kg	10	--	1	02/16/17 22:20	02/16/17 23:17	1,7.3	TL



**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704816  
**Report Date:** 02/20/17

### SAMPLE RESULTS

Lab ID: L1704816-02  
Client ID: VES-117 (2-4)  
Sample Location: E. BOSTON  
Matrix: Soil

Date Collected: 02/15/17 14:00  
Date Received: 02/15/17  
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>General Chemistry - Westborough Lab</b>										
Specific Conductance @ 25 C	81		umhos/cm	10	--	1	-	02/16/17 07:05	1,9050A	KA
Solids, Total	73.4	%		0.100	NA	1	-	02/16/17 14:28	121,2540G	RI
pH (H)	7.3	SU		-	NA	1	-	02/16/17 06:40	1,9045D	VB
Cyanide, Reactive	ND		mg/kg	10	--	1	02/16/17 22:20	02/16/17 23:25	1,7.3	TL
Sulfide, Reactive	ND		mg/kg	10	--	1	02/16/17 22:20	02/16/17 23:18	1,7.3	TL



**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704816  
**Report Date:** 02/20/17

### SAMPLE RESULTS

Lab ID: L1704816-03  
Client ID: VES-122 (3-5)  
Sample Location: E. BOSTON  
Matrix: Soil

Date Collected: 02/15/17 13:30  
Date Received: 02/15/17  
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>General Chemistry - Westborough Lab</b>										
Specific Conductance @ 25 C	ND		umhos/cm	10	--	1	-	02/16/17 07:05	1,9050A	KA
Solids, Total	77.3	%		0.100	NA	1	-	02/16/17 14:28	121,2540G	RI
pH (H)	6.8	SU		-	NA	1	-	02/16/17 06:40	1,9045D	VB
Cyanide, Reactive	ND		mg/kg	10	--	1	02/16/17 22:20	02/16/17 23:26	1,7.3	TL
Sulfide, Reactive	ND		mg/kg	10	--	1	02/16/17 22:20	02/16/17 23:18	1,7.3	TL



**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704816  
**Report Date:** 02/20/17

### SAMPLE RESULTS

Lab ID: L1704816-04  
Client ID: VES-126 (3-5)  
Sample Location: E. BOSTON  
Matrix: Soil

Date Collected: 02/15/17 12:55  
Date Received: 02/15/17  
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>General Chemistry - Westborough Lab</b>										
Specific Conductance @ 25 C	ND		umhos/cm	10	--	1	-	02/16/17 07:05	1,9050A	KA
Solids, Total	75.7	%		0.100	NA	1	-	02/16/17 14:28	121,2540G	RI
pH (H)	6.3	SU		-	NA	1	-	02/16/17 06:40	1,9045D	VB
Cyanide, Reactive	ND		mg/kg	10	--	1	02/16/17 22:20	02/16/17 23:26	1,7.3	TL
Sulfide, Reactive	ND		mg/kg	10	--	1	02/16/17 22:20	02/16/17 23:18	1,7.3	TL



**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704816  
**Report Date:** 02/20/17

### SAMPLE RESULTS

Lab ID: L1704816-05  
Client ID: VES-114 (0-2)  
Sample Location: E. BOSTON  
Matrix: Soil

Date Collected: 02/15/17 11:00  
Date Received: 02/15/17  
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>General Chemistry - Westborough Lab</b>										
Solids, Total	59.1		%	0.100	NA	1	-	02/16/17 11:27	121,2540G	RI



**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704816  
**Report Date:** 02/20/17

### SAMPLE RESULTS

Lab ID: L1704816-06  
Client ID: VES-114 (2-4)  
Sample Location: E. BOSTON  
Matrix: Soil

Date Collected: 02/15/17 11:05  
Date Received: 02/15/17  
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>General Chemistry - Westborough Lab</b>										
Specific Conductance @ 25 C	94		umhos/cm	10	--	1	-	02/16/17 07:05	1,9050A	KA
Solids, Total	71.4	%		0.100	NA	1	-	02/16/17 14:28	121,2540G	RI
pH (H)	8.0	SU		-	NA	1	-	02/16/17 06:40	1,9045D	VB
Cyanide, Reactive	ND		mg/kg	10	--	1	02/16/17 22:20	02/16/17 23:26	1,7.3	TL
Sulfide, Reactive	ND		mg/kg	10	--	1	02/16/17 22:20	02/16/17 23:18	1,7.3	TL



**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704816  
**Report Date:** 02/20/17

### SAMPLE RESULTS

Lab ID: L1704816-07  
Client ID: VES-115 (0-2)  
Sample Location: E. BOSTON  
Matrix: Soil

Date Collected: 02/15/17 10:30  
Date Received: 02/15/17  
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>General Chemistry - Westborough Lab</b>										
Solids, Total	71.0		%	0.100	NA	1	-	02/16/17 11:27	121,2540G	RI



**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704816  
**Report Date:** 02/20/17

### SAMPLE RESULTS

Lab ID: L1704816-08  
Client ID: VES-115 (2-4)  
Sample Location: E. BOSTON  
Matrix: Soil

Date Collected: 02/15/17 10:35  
Date Received: 02/15/17  
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>General Chemistry - Westborough Lab</b>										
Specific Conductance @ 25 C	64		umhos/cm	10	--	1	-	02/16/17 07:05	1,9050A	KA
Solids, Total	65.0	%		0.100	NA	1	-	02/16/17 14:28	121,2540G	RI
pH (H)	7.7	SU		-	NA	1	-	02/16/17 06:40	1,9045D	VB
Cyanide, Reactive	ND		mg/kg	10	--	1	02/16/17 22:20	02/16/17 23:26	1,7.3	TL
Sulfide, Reactive	ND		mg/kg	10	--	1	02/16/17 22:20	02/16/17 23:18	1,7.3	TL



**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704816  
**Report Date:** 02/20/17

### SAMPLE RESULTS

Lab ID: L1704816-09  
Client ID: VES-118 (22-24)  
Sample Location: E. BOSTON  
Matrix: Soil

Date Collected: 02/15/17 09:35  
Date Received: 02/15/17  
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>General Chemistry - Westborough Lab</b>										
Specific Conductance @ 25 C	110		umhos/cm	10	--	1	-	02/16/17 07:05	1,9050A	KA
Solids, Total	44.5	%		0.100	NA	1	-	02/16/17 14:28	121,2540G	RI
pH (H)	7.0	SU		-	NA	1	-	02/16/17 06:40	1,9045D	VB
Cyanide, Reactive	ND		mg/kg	10	--	1	02/16/17 22:20	02/16/17 23:26	1,7.3	TL
Sulfide, Reactive	20		mg/kg	10	--	1	02/16/17 22:20	02/16/17 23:19	1,7.3	TL



**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704816  
**Report Date:** 02/20/17

### SAMPLE RESULTS

Lab ID: L1704816-10  
Client ID: VES-118 (0-2)  
Sample Location: E. BOSTON  
Matrix: Soil

Date Collected: 02/15/17 09:05  
Date Received: 02/15/17  
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>General Chemistry - Westborough Lab</b>										
Solids, Total	83.1		%	0.100	NA	1	-	02/16/17 11:27	121,2540G	RI



**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704816  
**Report Date:** 02/20/17

### SAMPLE RESULTS

Lab ID: L1704816-11  
Client ID: VES-118 (2-4)  
Sample Location: E. BOSTON  
Matrix: Soil

Date Collected: 02/15/17 09:10  
Date Received: 02/15/17  
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>General Chemistry - Westborough Lab</b>										
Specific Conductance @ 25 C	140		umhos/cm	10	--	1	-	02/16/17 07:05	1,9050A	KA
Solids, Total	79.9	%		0.100	NA	1	-	02/16/17 14:28	121,2540G	RI
pH (H)	7.2	SU		-	NA	1	-	02/16/17 06:40	1,9045D	VB
Cyanide, Reactive	ND		mg/kg	10	--	1	02/16/17 22:20	02/16/17 23:26	1,7.3	TL
Sulfide, Reactive	ND		mg/kg	10	--	1	02/16/17 22:20	02/16/17 23:19	1,7.3	TL



**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704816  
**Report Date:** 02/20/17

### SAMPLE RESULTS

Lab ID: L1704816-12  
Client ID: VES-127 (18-20)  
Sample Location: E. BOSTON  
Matrix: Soil

Date Collected: 02/15/17 08:40  
Date Received: 02/15/17  
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>General Chemistry - Westborough Lab</b>										
Specific Conductance @ 25 C	1500		umhos/cm	10	--	1	-	02/16/17 07:05	1,9050A	KA
Solids, Total	72.3	%		0.100	NA	1	-	02/16/17 14:28	121,2540G	RI
pH (H)	8.2	SU		-	NA	1	-	02/16/17 06:40	1,9045D	VB
Cyanide, Reactive	ND		mg/kg	10	--	1	02/16/17 22:20	02/16/17 23:27	1,7.3	TL
Sulfide, Reactive	ND		mg/kg	10	--	1	02/16/17 22:20	02/16/17 23:19	1,7.3	TL



**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704816  
**Report Date:** 02/20/17

### SAMPLE RESULTS

Lab ID: L1704816-13  
Client ID: VES-127 (0-2)  
Sample Location: E. BOSTON  
Matrix: Soil

Date Collected: 02/15/17 08:25  
Date Received: 02/15/17  
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>General Chemistry - Westborough Lab</b>										
Solids, Total	79.9		%	0.100	NA	1	-	02/16/17 11:27	121,2540G	RI



**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704816  
**Report Date:** 02/20/17

### SAMPLE RESULTS

Lab ID: L1704816-14  
Client ID: VES-127 (2-4)  
Sample Location: E. BOSTON  
Matrix: Soil

Date Collected: 02/15/17 08:30  
Date Received: 02/15/17  
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>General Chemistry - Westborough Lab</b>										
Specific Conductance @ 25 C	10		umhos/cm	10	--	1	-	02/16/17 07:05	1,9050A	KA
Solids, Total	72.0	%		0.100	NA	1	-	02/16/17 14:28	121,2540G	RI
pH (H)	6.1	SU		-	NA	1	-	02/16/17 06:40	1,9045D	VB
Cyanide, Reactive	ND		mg/kg	10	--	1	02/16/17 22:20	02/16/17 23:27	1,7.3	TL
Sulfide, Reactive	ND		mg/kg	10	--	1	02/16/17 22:20	02/16/17 23:19	1,7.3	TL



**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704816  
**Report Date:** 02/20/17

### SAMPLE RESULTS

Lab ID: L1704816-15  
Client ID: VES-106 (10-12)  
Sample Location: E. BOSTON  
Matrix: Soil

Date Collected: 02/15/17 10:00  
Date Received: 02/15/17  
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>General Chemistry - Westborough Lab</b>										
Specific Conductance @ 25 C	1100		umhos/cm	10	--	1	-	02/16/17 07:40	1,9050A	KA
Solids, Total	55.9	%		0.100	NA	1	-	02/16/17 14:28	121,2540G	RI
pH (H)	8.1	SU		-	NA	1	-	02/16/17 06:40	1,9045D	VB
Cyanide, Reactive	ND		mg/kg	10	--	1	02/16/17 22:20	02/16/17 23:28	1,7.3	TL
Sulfide, Reactive	ND		mg/kg	10	--	1	02/16/17 22:20	02/16/17 23:20	1,7.3	TL



**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704816  
**Report Date:** 02/20/17

**Method Blank Analysis**  
**Batch Quality Control**

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab for sample(s): 01-04,06,08-09,11-12,14-15 Batch: WG978518-1									
Cyanide, Reactive	ND	mg/kg	10	--	1	02/16/17 22:20	02/16/17 23:23	1,7.3	TL
General Chemistry - Westborough Lab for sample(s): 01-04,06,08-09,11-12,14-15 Batch: WG978519-1									
Sulfide, Reactive	ND	mg/kg	10	--	1	02/16/17 22:20	02/16/17 23:14	1,7.3	TL



# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704816  
**Report Date:** 02/20/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01-04,06,08-09,11-12,14-15 Batch: WG978288-1								
pH	100	-	-	-	99-101	-	-	-
General Chemistry - Westborough Lab Associated sample(s): 01-04,06,08-09,11-12,14 Batch: WG978308-1								
Specific Conductance	100	-	-	-	99-101	-	-	-
General Chemistry - Westborough Lab Associated sample(s): 15 Batch: WG978309-1								
Specific Conductance	101	-	-	-	99-101	-	-	-
General Chemistry - Westborough Lab Associated sample(s): 01-04,06,08-09,11-12,14-15 Batch: WG978518-2								
Cyanide, Reactive	40	-	-	-	30-125	-	-	40
General Chemistry - Westborough Lab Associated sample(s): 01-04,06,08-09,11-12,14-15 Batch: WG978519-2								
Sulfide, Reactive	94	-	-	-	60-125	-	-	40

**Lab Duplicate Analysis**  
Batch Quality Control

**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704816  
**Report Date:** 02/20/17

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01-04,06,08-09,11-12,14 QC Batch ID: WG978308-2 QC Sample: L1704816-01 Client ID: VES-113 (2-4)						
Specific Conductance @ 25 C	48	68	umhos/cm	34	Q	20
General Chemistry - Westborough Lab Associated sample(s): 15 QC Batch ID: WG978309-2 QC Sample: L1704816-15 Client ID: VES-106 (10-12)						
Specific Conductance @ 25 C	1100	1700	umhos/cm	43	Q	20
General Chemistry - Westborough Lab Associated sample(s): 01-04,06,08-09,11-12,14-15 QC Batch ID: WG978453-1 QC Sample: L1704816-01 Client ID: VES-113 (2-4)						
Solids, Total	83.0	84.5	%	2		20

**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704816  
**Report Date:** 02/20/17

### Sample Receipt and Container Information

Were project specific reporting limits specified? YES

**Reagent H2O Preserved Vials Frozen on:** 02/15/2017 21:41

#### Cooler Information Custody Seal

##### Cooler

A Absent

#### Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L1704816-01A	Vial MeOH preserved	A	N/A	4.9	Y	Absent	VPH-10(28),MCP-8260HLW-10(14)
L1704816-01B	Vial water preserved	A	N/A	4.9	Y	Absent	MCP-8260HLW-10(14)
L1704816-01C	Vial water preserved	A	N/A	4.9	Y	Absent	MCP-8260HLW-10(14)
L1704816-01D	Glass 500ml/16oz unpreserved	A	N/A	4.9	Y	Absent	IGNIT-1030(14),REACTS(14),MCP-8270-10(14),TS(7),MCP-8082-10-3540C(365),PH-9045(1),REACTCN(14),COND-9050(28),EPH-DELUX-10(14)
L1704816-01E	Metals Only - Glass 60mL/2oz unp	A	N/A	4.9	Y	Absent	MCP-CR-6010T-10(180),MCP-AS-6010T-10(180),MCP-7471T-10(28),MCP-CD-6010T-10(180),MCP-AG-6010T-10(180),MCP-SE-6010T-10(180),MCP-BA-6010T-10(180),MCP-PB-6010T-10(180)
L1704816-02A	Vial MeOH preserved	A	N/A	4.9	Y	Absent	VPH-10(28),MCP-8260HLW-10(14)
L1704816-02B	Vial water preserved	A	N/A	4.9	Y	Absent	MCP-8260HLW-10(14)
L1704816-02C	Vial water preserved	A	N/A	4.9	Y	Absent	MCP-8260HLW-10(14)
L1704816-02D	Glass 500ml/16oz unpreserved	A	N/A	4.9	Y	Absent	IGNIT-1030(14),REACTS(14),MCP-8270-10(14),TS(7),MCP-8082-10-3540C(365),PH-9045(1),REACTCN(14),COND-9050(28),EPH-DELUX-10(14)
L1704816-02E	Metals Only - Glass 60mL/2oz unp	A	N/A	4.9	Y	Absent	MCP-CR-6010T-10(180),MCP-AS-6010T-10(180),MCP-7471T-10(28),MCP-CD-6010T-10(180),MCP-AG-6010T-10(180),MCP-SE-6010T-10(180),MCP-BA-6010T-10(180),MCP-PB-6010T-10(180)
L1704816-03A	Vial MeOH preserved	A	N/A	4.9	Y	Absent	VPH-10(28),MCP-8260HLW-10(14)
L1704816-03B	Vial water preserved	A	N/A	4.9	Y	Absent	MCP-8260HLW-10(14)

\*Values in parentheses indicate holding time in days

**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704816  
**Report Date:** 02/20/17

**Container Information**

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L1704816-03C	Vial water preserved	A	N/A	4.9	Y	Absent	MCP-8260HLW-10(14)
L1704816-03D	Glass 500ml/16oz unpreserved	A	N/A	4.9	Y	Absent	IGNIT-1030(14),REACTS(14),MCP-8270-10(14),TS(7),MCP-8082-10-3540C(365),PH-9045(1),REACTCN(14),COND-9050(28),EPH-DELUX-10(14)
L1704816-03E	Metals Only - Glass 60mL/2oz unp	A	N/A	4.9	Y	Absent	MCP-CR-6010T-10(180),MCP-AS-6010T-10(180),MCP-7471T-10(28),MCP-CD-6010T-10(180),MCP-AG-6010T-10(180),MCP-SE-6010T-10(180),MCP-BA-6010T-10(180),MCP-PB-6010T-10(180)
L1704816-04A	Vial MeOH preserved	A	N/A	4.9	Y	Absent	VPH-10(28),MCP-8260HLW-10(14)
L1704816-04B	Vial water preserved	A	N/A	4.9	Y	Absent	MCP-8260HLW-10(14)
L1704816-04C	Vial water preserved	A	N/A	4.9	Y	Absent	MCP-8260HLW-10(14)
L1704816-04D	Glass 500ml/16oz unpreserved	A	N/A	4.9	Y	Absent	IGNIT-1030(14),REACTS(14),MCP-8270-10(14),TS(7),MCP-8082-10-3540C(365),PH-9045(1),REACTCN(14),COND-9050(28),EPH-DELUX-10(14)
L1704816-04E	Metals Only - Glass 60mL/2oz unp	A	N/A	4.9	Y	Absent	MCP-CR-6010T-10(180),MCP-AS-6010T-10(180),MCP-7471T-10(28),MCP-CD-6010T-10(180),MCP-AG-6010T-10(180),MCP-SE-6010T-10(180),MCP-BA-6010T-10(180),MCP-PB-6010T-10(180)
L1704816-05A	Glass 120ml/4oz unpreserved	A	N/A	4.9	Y	Absent	MCP-8081-10(14),TS(7)
L1704816-06A	Vial MeOH preserved	A	N/A	4.9	Y	Absent	VPH-10(28),MCP-8260HLW-10(14)
L1704816-06B	Vial water preserved	A	N/A	4.9	Y	Absent	MCP-8260HLW-10(14)
L1704816-06C	Vial water preserved	A	N/A	4.9	Y	Absent	MCP-8260HLW-10(14)
L1704816-06D	Glass 500ml/16oz unpreserved	A	N/A	4.9	Y	Absent	IGNIT-1030(14),REACTS(14),MCP-8270-10(14),TS(7),MCP-8082-10-3540C(365),PH-9045(1),REACTCN(14),COND-9050(28),EPH-DELUX-10(14)
L1704816-06E	Metals Only - Glass 60mL/2oz unp	A	N/A	4.9	Y	Absent	MCP-CR-6010T-10(180),MCP-AS-6010T-10(180),MCP-7471T-10(28),MCP-CD-6010T-10(180),MCP-AG-6010T-10(180),MCP-SE-6010T-10(180),MCP-BA-6010T-10(180),MCP-PB-6010T-10(180)
L1704816-07A	Glass 120ml/4oz unpreserved	A	N/A	4.9	Y	Absent	MCP-8081-10(14),TS(7)

\*Values in parentheses indicate holding time in days

**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704816  
**Report Date:** 02/20/17

**Container Information**

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L1704816-08A	Vial MeOH preserved	A	N/A	4.9	Y	Absent	VPH-10(28),MCP-8260HLW-10(14)
L1704816-08B	Vial water preserved	A	N/A	4.9	Y	Absent	MCP-8260HLW-10(14)
L1704816-08C	Vial water preserved	A	N/A	4.9	Y	Absent	MCP-8260HLW-10(14)
L1704816-08D	Glass 500ml/16oz unpreserved	A	N/A	4.9	Y	Absent	IGNIT-1030(14),REACTS(14),MCP-8270-10(14),TS(7),MCP-8082-10-3540C(365),PH-9045(1),REACTCN(14),COND-9050(28),EPH-DELUX-10(14)
L1704816-08E	Metals Only - Glass 60mL/2oz unp	A	N/A	4.9	Y	Absent	MCP-CR-6010T-10(180),MCP-AS-6010T-10(180),MCP-7471T-10(28),MCP-CD-6010T-10(180),MCP-AG-6010T-10(180),MCP-SE-6010T-10(180),MCP-BA-6010T-10(180),MCP-PB-6010T-10(180)
L1704816-09A	Vial MeOH preserved	A	N/A	4.9	Y	Absent	VPH-10(28),MCP-8260H-10(14),MCP-8260HLW-10(14)
L1704816-09B	Vial water preserved	A	N/A	4.9	Y	Absent	MCP-8260H-10(14),MCP-8260HLW-10(14)
L1704816-09C	Vial water preserved	A	N/A	4.9	Y	Absent	MCP-8260H-10(14),MCP-8260HLW-10(14)
L1704816-09D	Glass 500ml/16oz unpreserved	A	N/A	4.9	Y	Absent	IGNIT-1030(14),REACTS(14),MCP-8270-10(14),TS(7),MCP-8082-10-3540C(365),PH-9045(1),REACTCN(14),COND-9050(28),EPH-DELUX-10(14)
L1704816-09E	Metals Only - Glass 60mL/2oz unp	A	N/A	4.9	Y	Absent	MCP-CR-6010T-10(180),MCP-AS-6010T-10(180),MCP-7471T-10(28),MCP-CD-6010T-10(180),MCP-AG-6010T-10(180),MCP-SE-6010T-10(180),MCP-BA-6010T-10(180),MCP-PB-6010T-10(180)
L1704816-10A	Glass 120ml/4oz unpreserved	A	N/A	4.9	Y	Absent	MCP-8081-10(14),TS(7)
L1704816-11A	Vial MeOH preserved	A	N/A	4.9	Y	Absent	VPH-10(28),MCP-8260HLW-10(14)
L1704816-11B	Vial water preserved	A	N/A	4.9	Y	Absent	MCP-8260HLW-10(14)
L1704816-11C	Vial water preserved	A	N/A	4.9	Y	Absent	MCP-8260HLW-10(14)
L1704816-11D	Glass 500ml/16oz unpreserved	A	N/A	4.9	Y	Absent	IGNIT-1030(14),REACTS(14),MCP-8270-10(14),TS(7),MCP-8082-10-3540C(365),PH-9045(1),REACTCN(14),COND-9050(28),EPH-DELUX-10(14)

\*Values in parentheses indicate holding time in days

**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704816  
**Report Date:** 02/20/17

**Container Information**

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L1704816-11E	Metals Only - Glass 60mL/2oz unp	A	N/A	4.9	Y	Absent	MCP-CR-6010T-10(180),MCP-AS-6010T-10(180),MCP-7471T-10(28),MCP-CD-6010T-10(180),MCP-AG-6010T-10(180),MCP-SE-6010T-10(180),MCP-BA-6010T-10(180),MCP-PB-6010T-10(180)
L1704816-12A	Vial MeOH preserved	A	N/A	4.9	Y	Absent	VPH-10(28),MCP-8260HLW-10(14)
L1704816-12B	Vial water preserved	A	N/A	4.9	Y	Absent	MCP-8260HLW-10(14)
L1704816-12C	Vial water preserved	A	N/A	4.9	Y	Absent	MCP-8260HLW-10(14)
L1704816-12D	Glass 500ml/16oz unpreserved	A	N/A	4.9	Y	Absent	IGNIT-1030(14),REACTS(14),MCP-8270-10(14),TS(7),MCP-8082-10-3540C(365),PH-9045(1),REACTCN(14),COND-9050(28),EPH-DELUX-10(14)
L1704816-12E	Metals Only - Glass 60mL/2oz unp	A	N/A	4.9	Y	Absent	MCP-CR-6010T-10(180),MCP-AS-6010T-10(180),MCP-7471T-10(28),MCP-CD-6010T-10(180),MCP-AG-6010T-10(180),MCP-SE-6010T-10(180),MCP-BA-6010T-10(180),MCP-PB-6010T-10(180)
L1704816-13A	Glass 120ml/4oz unpreserved	A	N/A	4.9	Y	Absent	MCP-8081-10(14),TS(7)
L1704816-14A	Vial MeOH preserved	A	N/A	4.9	Y	Absent	VPH-10(28),MCP-8260HLW-10(14)
L1704816-14B	Vial water preserved	A	N/A	4.9	Y	Absent	MCP-8260HLW-10(14)
L1704816-14C	Vial water preserved	A	N/A	4.9	Y	Absent	MCP-8260HLW-10(14)
L1704816-14D	Glass 500ml/16oz unpreserved	A	N/A	4.9	Y	Absent	IGNIT-1030(14),REACTS(14),MCP-8270-10(14),TS(7),MCP-8082-10-3540C(365),PH-9045(1),REACTCN(14),COND-9050(28),EPH-DELUX-10(14)
L1704816-14E	Metals Only - Glass 60mL/2oz unp	A	N/A	4.9	Y	Absent	MCP-CR-6010T-10(180),MCP-AS-6010T-10(180),MCP-7471T-10(28),MCP-CD-6010T-10(180),MCP-AG-6010T-10(180),MCP-SE-6010T-10(180),MCP-BA-6010T-10(180),MCP-PB-6010T-10(180)
L1704816-15A	Vial MeOH preserved	A	N/A	4.9	Y	Absent	VPH-10(28),MCP-8260HLW-10(14)
L1704816-15B	Vial water preserved	A	N/A	4.9	Y	Absent	MCP-8260HLW-10(14)
L1704816-15C	Vial water preserved	A	N/A	4.9	Y	Absent	MCP-8260HLW-10(14)

\*Values in parentheses indicate holding time in days

**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704816  
**Report Date:** 02/20/17

**Container Information**

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L1704816-15D	Glass 500ml/16oz unpreserved	A	N/A	4.9	Y	Absent	IGNIT-1030(14),REACTS(14),MCP-8270-10(14),TS(7),MCP-8082-10-3540C(365),PH-9045(1),REACTCN(14),COND-9050(28),EPH-DELUX-10(14)
L1704816-15E	Metals Only - Glass 60mL/2oz unp	A	N/A	4.9	Y	Absent	MCP-CR-6010T-10(180),MCP-AS-6010T-10(180),MCP-7471T-10(28),MCP-CD-6010T-10(180),MCP-AG-6010T-10(180),MCP-SE-6010T-10(180),MCP-BA-6010T-10(180),MCP-PB-6010T-10(180)

\*Values in parentheses indicate holding time in days

**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704816  
**Report Date:** 02/20/17

## GLOSSARY

### **Acronyms**

EDL	- Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).
EPA	- Environmental Protection Agency.
LCS	- Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCSD	- Laboratory Control Sample Duplicate: Refer to LCS.
LFB	- Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
MDL	- Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
MS	- Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available.
MSD	- Matrix Spike Sample Duplicate: Refer to MS.
NA	- Not Applicable.
NC	- Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
NDPA/DPA	- N-Nitrosodiphenylamine/Diphenylamine.
NI	- Not Ignitable.
NP	- Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.
RL	- Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
RPD	- Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.
SRM	- Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.
STLP	- Semi-dynamic Tank Leaching Procedure per EPA Method 1315.
TIC	- Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

### **Footnotes**

- 1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

### **Terms**

**Total:** With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

**Analytical Method:** Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

### **Data Qualifiers**

- A** - Spectra identified as "Aldol Condensation Product".
- B** - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the

**Report Format:** Data Usability Report



**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704816  
**Report Date:** 02/20/17

**Data Qualifiers**

reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

- C** - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.
- D** - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.
- E** - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.
- G** - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.
- H** - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.
- I** - The lower value for the two columns has been reported due to obvious interference.
- M** - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.
- NJ** - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.
- P** - The RPD between the results for the two columns exceeds the method-specified criteria.
- Q** - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)
- R** - Analytical results are from sample re-analysis.
- RE** - Analytical results are from sample re-extraction.
- S** - Analytical results are from modified screening analysis.
- J** - Estimated value. This represents an estimated concentration for Tentatively Identified Compounds (TICs).
- ND** - Not detected at the reporting limit (RL) for the sample.

*Report Format:* Data Usability Report



**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704816  
**Report Date:** 02/20/17

## REFERENCES

- 1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - IV, 2007.
- 97 EPA Test Methods (SW-846) with QC Requirements & Performance Standards for the Analysis of EPA SW-846 Methods under the Massachusetts Contingency Plan, WSC-CAM-IIA, IIB, IIIA, IIIB, IIIC, IID, VA, VB, VC, VIA, VIB, VIIIA and VIIIB, July 2010.
- 98 Method for the Determination of Extractable Petroleum Hydrocarbons (EPH), MassDEP, May 2004, Revision 1.1 with QC Requirements & Performance Standards for the Analysis of EPH under the Massachusetts Contingency Plan, WSC-CAM-IVB, July 2010.
- 100 Method for the Determination of Volatile Petroleum Hydrocarbons (VPH), MassDEP, May 2004, Revision 1.1 with QC Requirements & Performance Standards for the Analysis of VPH under the Massachusetts Contingency Plan, WSC-CAM-IVA, July 2010.
- 121 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. Standard Methods Online.

## LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at its own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.



## Certification Information

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**The following analytes are not included in our Primary NELAP Scope of Accreditation:**

**Westborough Facility**

EPA 624: m/p-xylene, o-xylene

EPA 8260C: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), Methyl methacrylate, 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.

EPA 8270D: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.

EPA 300: DW: Bromide

EPA 6860: NPW and SCM: Perchlorate

EPA 9010: NPW and SCM: Amenable Cyanide Distillation

EPA 9012B: NPW: Total Cyanide

EPA 9050A: NPW: Specific Conductance

SM3500: NPW: Ferrous Iron

SM4500: NPW: Amenable Cyanide, Dissolved Oxygen; SCM: Total Phosphorus, TKN, NO<sub>2</sub>, NO<sub>3</sub>.

SM5310C: DW: Dissolved Organic Carbon

**Mansfield Facility**

SM 2540D: TSS

EPA 3005A NPW

EPA 8082A: NPW: PCB: 1, 5, 31, 87, 101, 110, 141, 151, 153, 180, 183, 187.

EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.

**Biological Tissue Matrix**: EPA 3050B

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**The following analytes are included in our Massachusetts DEP Scope of Accreditation**

**Westborough Facility:**

**Drinking Water**

EPA 300.0: Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C**, **SM4500CN-CE**, **EPA 180.1**,

**SM2130B**, **SM4500CI-D**, **SM2320B**, **SM2540C**, **SM4500H-B**

EPA 332: Perchlorate; **EPA 524.2**: THMs and VOCs; **EPA 504.1**: EDB, DBCP.

Microbiology: **SM9215B**; **SM9223-P/A**, **SM9223B-Colilert-QT**, **SM9222D**.

**Non-Potable Water**

**SM4500H,B**, **EPA 120.1**, **SM2510B**, **SM2540C**, **SM2320B**, **SM4500CL-E**, **SM4500F-BC**, **SM4500NH3-BH**, **EPA 350.1**: Ammonia-N, LACHAT 10-107-06-1-B: Ammonia-N, **SM4500NO3-F**, **EPA 353.2**: Nitrate-N, **EPA 351.1**, **SM4500P-E**, **SM4500P-B**, **E**, **SM4500SO4-E**, **SM5220D**, **EPA 410.4**, **SM5210B**, **SM5310C**, **SM4500CL-D**, **EPA 1664**, **EPA 420.1**, **SM4500-CN-CE**, **SM2540D**.

EPA 624: Volatile Halocarbons & Aromatics,

EPA 608: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs

EPA 625: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045**: PCB-Oil.

Microbiology: **SM9223B-Colilert-QT**; **Enterolert-QT**, **SM9221E**.

**Mansfield Facility:**

**Drinking Water**

EPA 200.7: Ba, Be, Cd, Cr, Cu, Ni, Na, Ca. **EPA 200.8**: Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Ni, Se, TL. **EPA 245.1 Hg**.

**Non-Potable Water**

EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.

EPA 200.8: Al, Sb, As, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn.

EPA 245.1 Hg.

**SM2340B**

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For a complete listing of analytes and methods, please contact your Alpha Project Manager.



## CHAIN OF CUSTODY

PAGE 1 OF 2

8 Walkup Drive  
Westboro, MA 01581  
Tel: 508-898-9220

320 Forbes Blvd  
Mansfield, MA 02048  
Tel: 508-822-9300

## Client Information

Client: VERTEX

Address: One congress st  
Boston MA

Phone: 781-974-7595

Email: bsvonen@vertexeng.com

## Additional Project Information:

## Project Information

Project Name: E. Boston

Project Location: E. Boston

Project #: 43068

Project Manager: D. Gibbons

ALPHA Quote #:

## Turn-Around Time

 Standard RUSH (only confirmed if pre-approved!)

Date Due:

72 hour

Date Rec'd in Lab: 2/15/17

ALPHA Job #: U170181C

## Report Information - Data Deliverables

 ADEX EMAIL

## Billing Information

 Same as Client info

PO #:

## Regulatory Requirements &amp; Project Information Requirements

- Yes  No MA MCP Analytical Methods       Yes  No CT RCP Analytical Methods  
 Yes  No Matrix Spike Required on this SDG? (Required for MCP Inorganics)  
 Yes  No GW1 Standards (Info Required for Metals & EPH with Targets)  
 Yes  No NPDES RGP  
 Other State /Fed Program

Criteria

ANALYSIS	Criteria												TOTAL #
	VOC: <input checked="" type="checkbox"/> 8260	SVOOC: <input type="checkbox"/> ABN	METALS: <input type="checkbox"/> MCP 13	EPH: <input checked="" type="checkbox"/> RCRAS	TPH: <input type="checkbox"/> Ranges & Targets	PCB: <input type="checkbox"/> PEST	pH: <input type="checkbox"/> 50X/ct	Fingerprint	Chromatography	Tanability	Corine Relat		
VOC: <input checked="" type="checkbox"/> 8260	<input type="checkbox"/> 624	<input type="checkbox"/> 524.2	<input type="checkbox"/> PAH	<input checked="" type="checkbox"/> 8270	<input type="checkbox"/> MCP 14	<input type="checkbox"/> RCP 15	<input type="checkbox"/> PP13	<input type="checkbox"/> Ranges Only	5				
SVOOC: <input type="checkbox"/> ABN	<input type="checkbox"/> PAH	<input type="checkbox"/> 8270	<input type="checkbox"/> MCP 13	<input type="checkbox"/> RCRAS	<input type="checkbox"/> RCP 15	<input type="checkbox"/> PP13	<input type="checkbox"/> Ranges Only	5					
METALS: <input type="checkbox"/> MCP 13	<input type="checkbox"/> PAH	<input type="checkbox"/> 8270	<input type="checkbox"/> RCRAS	<input type="checkbox"/> RCP 15	<input type="checkbox"/> PP13	<input type="checkbox"/> Ranges Only	5						
EPH: <input checked="" type="checkbox"/> RCRAS	<input type="checkbox"/> Ranges & Targets	<input type="checkbox"/> Ranges & Targets	<input type="checkbox"/> Ranges & Targets	<input type="checkbox"/> Ranges & Targets	<input type="checkbox"/> Ranges & Targets	<input type="checkbox"/> Ranges & Targets	<input type="checkbox"/> Ranges & Targets	<input type="checkbox"/> Ranges & Targets	<input type="checkbox"/> Ranges & Targets	<input type="checkbox"/> Ranges & Targets	<input type="checkbox"/> Ranges & Targets	<input type="checkbox"/> Ranges & Targets	5
TPH: <input type="checkbox"/> Quant Only	<input type="checkbox"/> PEST	<input type="checkbox"/> 8082	<input type="checkbox"/> 50X/ct	<input type="checkbox"/> 50X/ct	<input type="checkbox"/> 50X/ct	<input type="checkbox"/> 50X/ct	<input type="checkbox"/> 50X/ct	<input type="checkbox"/> 50X/ct	<input type="checkbox"/> 50X/ct	<input type="checkbox"/> 50X/ct	<input type="checkbox"/> 50X/ct	<input type="checkbox"/> 50X/ct	5
pH: <input type="checkbox"/> 50X/ct	<input type="checkbox"/> Fingerprint	<input type="checkbox"/> Chromatography	<input type="checkbox"/> Tanability	<input type="checkbox"/> Corine Relat	<input type="checkbox"/> Corine Relat	<input type="checkbox"/> Corine Relat	<input type="checkbox"/> Corine Relat	<input type="checkbox"/> Corine Relat	<input type="checkbox"/> Corine Relat	<input type="checkbox"/> Corine Relat	<input type="checkbox"/> Corine Relat	<input type="checkbox"/> Corine Relat	5

## SAMPLE INFO

Filtration  
 Field  
 Lab to do

Preservation  
 Lab to do

## Sample Comments

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection		Sample Matrix	Sampler Initials	Criteria												TOTAL #
		Date	Time			XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX		
04816-01	VES-113 (2-4)	2/13/17	14:35	S	BS	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	No Pest	5
-02	VES-117 (2-4)		14:00			XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	No Pest	5
-03	VES-122 (3-5)		13:30			XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	No Pest	5
-04	VES-126 (3-5)		12:55			XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	No Pest	5
-05	VES-114 (0-2)		11:00			XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	1	
-06	VES-114 (2-4)		11:05			XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	No Pest	5
-07	VES-115 (0-2)		10:30			XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	1	
-08	VES-115 (2-4)		10:35			XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	5	
-09	VES-118 (22-24)		9:35			XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	5	
-10	VES-118 (0-2)		9:05			XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	1	

Container Type  
P= Plastic  
A= Amber glass  
V= Vial  
G= Glass  
B= Bacteria cup  
C= Cube  
O= Other  
E= Encore  
D= BOD Bottle

Preservative  
A= None  
B= HCl  
C= HNO<sub>3</sub>  
D= H<sub>2</sub>SO<sub>4</sub>  
E= NaOH  
F= MeOH  
G= NaHSO<sub>4</sub>  
H= Na<sub>2</sub>S<sub>2</sub>O<sub>3</sub>  
I= Ascorbic Acid  
J= NH<sub>4</sub>Cl  
K= Zn Acetate  
O= Other

Container Type	A	A A	V A	A A A
Preservative	F	A	A A F A	A A A

Relinquished By: Rob Maisto Date/Time: 2/15/17 16:00  
Received By: Rob Maisto AAL Date/Time: 2/15/17 16:00  
User: Rob Maisto Date/Time: 2/15/17 18:41

All samples submitted are subject to  
Alpha's Terms and Conditions.  
See reverse side.

FORM NO. 01-01 (rev. 12-Mar-2012)



VERTEX

## CHAIN OF CUSTODY

PAGE 2 OF 2

8 Walkup Drive  
Westboro, MA 01581  
Tel: 508-898-9220

320 Forbes Blvd  
Mansfield, MA 02048  
Tel: 508-822-9300

## Client Information

Client: VERTEX

Address: one Congress St  
Boston MA

Phone: 781-974-7595

Email: bsjvonen@vertexeng.com

Additional Project Information:

## Project Information

Project Name: E. Boston

Project Location: E. Boston

Project #:

Project Manager:

ALPHA Quote #:

## Turn-Around Time

 Standard

X RUSH (only confirmed if pre-approved)

Date Due:

72-hour

Date Rec'd in Lab: 2/15/17

ALPHA Job #:

U704816

## Billing Information

 Same as Client Info PO #:

## Regulatory Requirements &amp; Project Information Requirements

- Yes  No MA MCP Analytical Methods       Yes  No CT RCP Analytical Methods  
 Yes  No Matrix Spike Required on this SDG? (Required for MCP Inorganics)  
 Yes  No GW1 Standards (Info Required for Metals & EPH with Targets)  
 Yes  No NPDES RGP  
 Other State /Fed Program \_\_\_\_\_ Criteria \_\_\_\_\_

ANALYSIS	Sample Comments										TOTAL # BOTTLES
	VOC: 28260	624	524.2	PAH	8270	METALS: MCP 13	MCP 14	RCP 15	PCB	TPH: Quant Only	
X	X	X	X	X	X	X	X	X	X	X	S
X	X	X	X	X	X	X	X	X	X	X	S
											1
X	X	X	X	X	X	X	X	X	X	X	S
X	X	X	X	X	X	X	X	X	X	X	S

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection		Sample Matrix	Sampler Initials	Sample Comments									
		Date	Time			VOC: 28260 SVOC: ABN METALS: RCRAS EPH: Ranges & Targets VPH: Ranges & Targets PCB TPH: PEST 8082 Solvent PEST 8082 Solvent PEST 8082 Solvent PEST 8082 Solvent									
04816-11	VES-118 (2-4)	2/15	9:10	S	BS	X	X	X	X	X	X	X			S
72	VES-127 (18-20)		8:40	S	BS	X	X	X	X	X	X	X			S
73	VES-127 (0-2)		8:25	S	BS										1
-14	VES-127 (2-4)		8:30	S	BS	X	X	X	X	X	X	X			S
75	VES-1e6 (10-12)		10:00	S	KS	X	X	X	X	X	X	X			S

## Container Type

P= Plastic  
A= Amber glass  
V= Vial  
G= Glass  
B= Bacteria cup  
C= Cube  
O= Other  
E= Encore  
D= BOD Bottle

## Preservative

A= None  
B= HCl  
C= HNO<sub>3</sub>  
D= H<sub>2</sub>SO<sub>4</sub>  
E= NaOH  
F= MeOH  
G= NaHSO<sub>4</sub>  
H= Na<sub>2</sub>S<sub>2</sub>O<sub>3</sub>  
I= Ascorbic Acid  
J= NH<sub>4</sub>Cl  
K= Zn Acetate  
O= Other

## Container Type

## Preservative

KA JAV AFA AAA

Relinquished By:

Date/Time

B8 RJ Manto AAL 2/15/17 1840

Received By:

Date/Time

Rob Maestoroff 2/15/17 16:00  
AAR MC 2/15/17 1840

All samples submitted are subject to  
Alpha's Terms and Conditions  
See reverse side.

FORM NO. 01-01 (rev. 12-Mar-2012)

**Method Blank Summary  
Form 4**

Client	: Vertex Environmental Services, Inc.	Lab Number	: L1704816
Project Name	: E. BOSTON	Project Number	: 43068
Lab Sample ID	: WG978809-5	Lab File ID	: V11170216N05
Instrument ID	: VOA111		
Matrix	: SOIL	Analysis Date	: 02/16/17 21:16

Client Sample No.	Lab Sample ID	Analysis Date
WG978809-3LCS	WG978809-3	02/16/17 19:34
WG978809-4LCSD	WG978809-4	02/16/17 19:59
VES-113 (2-4)	L1704816-01	02/17/17 01:06
VES-117 (2-4)	L1704816-02	02/17/17 01:31
VES-122 (3-5)	L1704816-03	02/17/17 01:57
VES-126 (3-5)	L1704816-04	02/17/17 02:22
VES-114 (2-4)	L1704816-06	02/17/17 02:48
VES-115 (2-4)	L1704816-08	02/17/17 03:14
VES-118 (22-24)	L1704816-09	02/17/17 03:40
VES-118 (2-4)	L1704816-11	02/17/17 04:05
VES-127 (18-20)	L1704816-12	02/17/17 04:31
VES-127 (2-4)	L1704816-14	02/17/17 04:56
VES-106 (10-12)	L1704816-15	02/17/17 05:22

## Method Blank Summary Form 4

Client : Vertex Environmental Services, Inc.      Lab Number : L1704816  
Project Name : E. BOSTON      Project Number : 43068  
Lab Sample ID : WG979055-5      Lab File ID : V11170217A05  
Instrument ID : VOA111  
Matrix : SOIL      Analysis Date : 02/17/17 10:13

Client Sample No.	Lab Sample ID	Analysis Date
WG979055-3LCS	WG979055-3	02/17/17 08:31
WG979055-4LCSD	WG979055-4	02/17/17 08:57
VES-118 (22-24)	L1704816-09	02/17/17 19:35

**Continuing Calibration  
Form 7**

Client	: Vertex Environmental Services, Inc.	Lab Number	: L1704816
Project Name	: E. BOSTON	Project Number	: 43068
Instrument ID	: VOA111	Calibration Date	: 02/16/17 19:34
Lab File ID	: V11170216N01	Init. Calib. Date(s)	: 01/30/17
Sample No	: WG978809-2	Init. Calib. Times	: 21:39 01/31/17 00:38
Channel	:		

Compound	Ave. RRF	RRF	Min RRF	%D	Max %D	Area%	Dev(min)
Fluorobenzene	1	1	-	0	20	68	0
Dichlorodifluoromethane	0.292	0.237	-	18.8	20	56	0
Chloromethane	0.451	0.463	-	-2.7	20	70	0
Vinyl chloride	0.346	0.322	-	6.9	20	64	0
Bromomethane	0.152	0.143	-	5.9	20	65	0
Chloroethane	0.177	0.183	-	-3.4	20	65	0
Trichlorofluoromethane	0.361	0.341	-	5.5	20	64	0
Ethyl ether	0.146	0.149	-	-2.1	20	70	0
1,1-Dichloroethene	0.199	0.184	-	7.5	20	64	0
Carbon disulfide	0.765	0.71	-	7.2	20	66	0
Methylene chloride	0.264	0.285	-	-8	20	75	0
Acetone	0.106	0.107	-	-0.9	20	64	0
trans-1,2-Dichloroethene	0.234	0.229	-	2.1	20	66	0
Methyl tert-butyl ether	0.756	0.764	-	-1.1	20	71	-.01
Diisopropyl ether	1.413	1.57	-	-11.1	20	77	0
1,1-Dichloroethane	0.565	0.595	-	-5.3	20	72	0
Ethyl tert-butyl ether	1.043	1.084	-	-3.9	20	73	0
cis-1,2-Dichloroethene	0.265	0.265	-	0	20	68	0
2,2-Dichloropropane	0.39	0.401	-	-2.8	20	70	0
Bromochloromethane	0.114	0.106	-	7	20	63	-.01
Chloroform	0.478	0.496	-	-3.8	20	70	-.01
Carbon tetrachloride	0.317	0.29	-	8.5	20	62	0
Tetrahydrofuran	0.128	0.143	-	-11.7	20	76	-.02
Dibromofluoromethane	0.236	0.232	-	1.7	20	67	0
1,1,1-Trichloroethane	0.389	0.382	-	1.8	20	66	0
2-Butanone	0.158	0.152	-	3.8	20	67	-.01
1,1-Dichloropropene	0.348	0.347	-	0.3	20	67	0
Benzene	1.024	1.055	-	-3	20	71	-.01
tert-Amyl methyl ether	0.7	0.701	-	-0.1	20	69	-.01
1,2-Dichloroethane-d4	0.321	0.337	-	-5	20	73	-.01
1,2-Dichloroethane	0.45	0.474	-	-5.3	20	71	-.01
Trichloroethene	0.257	0.255	-	0.8	20	68	-.01
Dibromomethane	0.151	0.152	-	-0.7	20	69	0
1,2-Dichloropropane	0.318	0.332	-	-4.4	20	71	0
Bromodichloromethane	0.365	0.362	-	0.8	20	68	-.01
1,4-Dioxane	0.00225	0.0022	-	2.2	20	65	-.01
cis-1,3-Dichloropropene	0.432	0.437	-	-1.2	20	70	0
Chlorobenzene-d5	1	1	-	0	20	70	0
Toluene-d8	1.352	1.355	-	-0.2	20	70	0
Toluene	0.899	0.871	-	3.1	20	68	0
4-Methyl-2-pentanone	0.145	0.13	-	10.3	20	67	-.01
Tetrachloroethene	0.327	0.282	-	13.8	20	60	-.01
trans-1,3-Dichloropropene	0.548	0.538	-	1.8	20	70	0
1,1,2-Trichloroethane	0.261	0.258	-	1.1	20	69	0
Chlorodibromomethane	0.335	0.294	-	12.2	20	62	0

\* Value outside of QC limits.



# Continuing Calibration

## Form 7

Client : Vertex Environmental Services, Inc.      Lab Number : L1704816  
 Project Name : E. BOSTON      Project Number : 43068  
 Instrument ID : VOA111      Calibration Date : 02/16/17 19:34  
 Lab File ID : V11170216N01      Init. Calib. Date(s) : 01/30/17      01/31/17  
 Sample No : WG978809-2      Init. Calib. Times : 21:39      00:38  
 Channel :

Compound	Ave. RRF	RRF	Min RRF	%D	Max %D	Area%	Dev(min)
1,3-Dichloropropane	0.562	0.563	-	-0.2	20	70	0
1,2-Dibromoethane	0.285	0.267	-	6.3	20	65	0
2-Hexanone	0.306	0.296	-	3.3	20	70	-.01
Chlorobenzene	0.972	0.922	-	5.1	20	67	0
Ethylbenzene	1.74	1.713	-	1.6	20	69	0
1,1,1,2-Tetrachloroethane	0.341	0.312	-	8.5	20	64	0
p/m Xylene	0.631	0.608	-	3.6	20	67	0
o Xylene	0.603	0.581	-	3.6	20	67	0
Styrene	1.018	0.965	-	5.2	20	67	0
1,4-Dichlorobenzene-d4	1	1	-	0	20	69	0
Bromoform	0.412	0.346	-	16	20	59	0
Isopropylbenzene	3.309	3.224	-	2.6	20	66	0
4-Bromofluorobenzene	1.064	1.13	-	-6.2	20	73	0
Bromobenzene	0.78	0.718	-	7.9	20	64	0
n-Propylbenzene	4.144	4.233	-	-2.1	20	70	0
1,1,2,2-Tetrachloroethane	0.783	0.761	-	2.8	20	67	0
2-Chlorotoluene	2.943	3.049	-	-3.6	20	71	0
1,3,5-Trimethylbenzene	2.832	2.804	-	1	20	68	0
1,2,3-Trichloropropane	0.664	0.68	-	-2.4	20	71	0
4-Chlorotoluene	2.607	2.707	-	-3.8	20	72	0
tert-Butylbenzene	2.294	2.183	-	4.8	20	65	0
1,2,4-Trimethylbenzene	2.895	2.891	-	0.1	20	68	0
sec-Butylbenzene	3.577	3.521	-	1.6	20	67	0
p-Isopropyltoluene	2.913	2.858	-	1.9	20	66	0
1,3-Dichlorobenzene	1.545	1.451	-	6.1	20	65	0
1,4-Dichlorobenzene	1.555	1.452	-	6.6	20	66	0
n-Butylbenzene	2.973	3.119	-	-4.9	20	73	0
1,2-Dichlorobenzene	1.448	1.336	-	7.7	20	64	0
1,2-Dibromo-3-chloropropan	0.104	0.084	-	19.2	20	60	0
Hexachlorobutadiene	0.485	0.406	-	16.3	20	57	0
1,2,4-Trichlorobenzene	0.985	0.897	-	8.9	20	63	0
Naphthalene	2.073	1.945	-	6.2	20	65	0
1,2,3-Trichlorobenzene	0.892	0.787	-	11.8	20	60	0

\* Value outside of QC limits.



**Continuing Calibration  
Form 7**

Client	: Vertex Environmental Services, Inc.	Lab Number	: L1704816
Project Name	: E. BOSTON	Project Number	: 43068
Instrument ID	: VOA111	Calibration Date	: 02/17/17 08:31
Lab File ID	: V11170217A01	Init. Calib. Date(s)	: 01/30/17
Sample No	: WG979055-2	Init. Calib. Times	: 21:39 01/31/17 00:38
Channel	:		

Compound	Ave. RRF	RRF	Min RRF	%D	Max %D	Area%	Dev(min)
Fluorobenzene	1	1	-	0	20	65	0
Dichlorodifluoromethane	0.292	0.258	-	11.6	20	59	0
Chloromethane	0.451	0.469	-	-4	20	69	0
Vinyl chloride	0.346	0.33	-	4.6	20	63	0
Bromomethane	0.152	0.122	-	19.7	20	54	0
Chloroethane	0.177	0.182	-	-2.8	20	62	0
Trichlorofluoromethane	0.361	0.364	-	-0.8	20	66	0
Ethyl ether	0.146	0.151	-	-3.4	20	68	0
1,1-Dichloroethene	0.199	0.196	-	1.5	20	65	0
Carbon disulfide	0.765	0.766	-	-0.1	20	69	0
Methylene chloride	0.264	0.29	-	-9.8	20	74	0
Acetone	0.106	0.124	-	-17	20	71	0
trans-1,2-Dichloroethene	0.234	0.229	-	2.1	20	63	0
Methyl tert-butyl ether	0.756	0.79	-	-4.5	20	70	-0.01
Diisopropyl ether	1.413	1.585	-	-12.2	20	75	0
1,1-Dichloroethane	0.565	0.586	-	-3.7	20	68	0
Ethyl tert-butyl ether	1.043	1.096	-	-5.1	20	71	-0.01
cis-1,2-Dichloroethene	0.265	0.258	-	2.6	20	64	0
2,2-Dichloropropane	0.39	0.409	-	-4.9	20	69	0
Bromochloromethane	0.114	0.107	-	6.1	20	61	-0.01
Chloroform	0.478	0.486	-	-1.7	20	67	-0.01
Carbon tetrachloride	0.317	0.303	-	4.4	20	63	0
Tetrahydrofuran	0.128	0.159	-	-24.2*	20	82	-0.02
Dibromofluoromethane	0.236	0.236	-	0	20	65	0
1,1,1-Trichloroethane	0.389	0.399	-	-2.6	20	66	0
2-Butanone	0.158	0.176	-	-11.4	20	75	0
1,1-Dichloropropene	0.348	0.363	-	-4.3	20	68	0
Benzene	1.024	1.034	-	-1	20	67	-0.01
tert-Amyl methyl ether	0.7	0.719	-	-2.7	20	68	-0.01
1,2-Dichloroethane-d4	0.321	0.354	-	-10.3	20	74	-0.01
1,2-Dichloroethane	0.45	0.493	-	-9.6	20	71	-0.01
Trichloroethene	0.257	0.254	-	1.2	20	65	-0.01
Dibromomethane	0.151	0.152	-	-0.7	20	67	0
1,2-Dichloropropane	0.318	0.331	-	-4.1	20	68	-0.01
Bromodichloromethane	0.365	0.364	-	0.3	20	66	-0.01
1,4-Dioxane	0.00225	0.0024	-	-6.7	20	69	-0.01
cis-1,3-Dichloropropene	0.432	0.433	-	-0.2	20	67	0
Chlorobenzene-d5	1	1	-	0	20	68	0
Toluene-d8	1.352	1.345	-	0.5	20	67	0
Toluene	0.899	0.843	-	6.2	20	64	0
4-Methyl-2-pentanone	0.145	0.144	-	0.7	20	72	0
Tetrachloroethene	0.327	0.283	-	13.5	20	58	0
trans-1,3-Dichloropropene	0.548	0.548	-	0	20	70	0
1,1,2-Trichloroethane	0.261	0.258	-	1.1	20	67	0
Chlorodibromomethane	0.335	0.305	-	9	20	62	0

\* Value outside of QC limits.



# Continuing Calibration Form 7

Client	: Vertex Environmental Services, Inc.	Lab Number	: L1704816
Project Name	: E. BOSTON	Project Number	: 43068
Instrument ID	: VOA111	Calibration Date	: 02/17/17 08:31
Lab File ID	: V11170217A01	Init. Calib. Date(s)	: 01/30/17
Sample No	: WG979055-2	Init. Calib. Times	: 21:39 01/31/17 00:38
Channel	:		

Compound	Ave. RRF	RRF	Min RRF	%D	Max %D	Area%	Dev(min)
1,3-Dichloropropane	0.562	0.569	-	-1.2	20	69	0
1,2-Dibromoethane	0.285	0.27	-	5.3	20	64	0
2-Hexanone	0.306	0.342	-	-11.8	20	78	0
Chlorobenzene	0.972	0.898	-	7.6	20	63	-.01
Ethylbenzene	1.74	1.665	-	4.3	20	65	0
1,1,1,2-Tetrachloroethane	0.341	0.309	-	9.4	20	62	0
p/m Xylene	0.631	0.588	-	6.8	20	63	0
o Xylene	0.603	0.559	-	7.3	20	63	0
Styrene	1.018	0.952	-	6.5	20	64	0
1,4-Dichlorobenzene-d4	1	1	-	0	20	68	0
Bromoform	0.412	0.346	-	16	20	57	0
Isopropylbenzene	3.309	3.166	-	4.3	20	64	0
4-Bromofluorobenzene	1.064	1.148	-	-7.9	20	73	0
Bromobenzene	0.78	0.7	-	10.3	20	61	0
n-Propylbenzene	4.144	4.148	-	-0.1	20	67	0
1,1,2,2-Tetrachloroethane	0.783	0.795	-	-1.5	20	69	0
2-Chlorotoluene	2.943	2.942	-	0	20	67	0
1,3,5-Trimethylbenzene	2.832	2.77	-	2.2	20	66	0
1,2,3-Trichloropropane	0.664	0.699	-	-5.3	20	71	0
4-Chlorotoluene	2.607	2.602	-	0.2	20	68	0
tert-Butylbenzene	2.294	2.165	-	5.6	20	63	0
1,2,4-Trimethylbenzene	2.895	2.821	-	2.6	20	65	0
sec-Butylbenzene	3.577	3.467	-	3.1	20	65	0
p-Isopropyltoluene	2.913	2.801	-	3.8	20	64	0
1,3-Dichlorobenzene	1.545	1.423	-	7.9	20	62	0
1,4-Dichlorobenzene	1.555	1.423	-	8.5	20	63	0
n-Butylbenzene	2.973	3.092	-	-4	20	71	0
1,2-Dichlorobenzene	1.448	1.309	-	9.6	20	62	0
1,2-Dibromo-3-chloropropan	0.104	0.085	-	18.3	20	60	0
Hexachlorobutadiene	0.485	0.391	-	19.4	20	54	0
1,2,4-Trichlorobenzene	0.985	0.889	-	9.7	20	61	0
Naphthalene	2.073	2.018	-	2.7	20	66	0
1,2,3-Trichlorobenzene	0.892	0.801	-	10.2	20	60	0

\* Value outside of QC limits.



I:\Pest18\170216n\18170216n-01.d

Data File Name **18170216n-01.d**  
 Data File Path **I:\Pest18\170216n\**  
 Operator **PEST18:RL**  
 Date Acquired **2/16/2017 20:49**  
 Acq. Method File **PEST.M**  
 Sample Name **PEM18170216N01,42EE,,deg**  
 Instrument Name **Pest 18**

Name	Ret Time	Response	
4,4'-DDT	4.78	468986374.3	% Breakdown
4,4'-DDE	4.11	1300394.746	
4,4'-DDD	4.57	4105765.497	1.14%
Endrin	4.50	256842346.3	% Breakdown
Endrin Aldehyde	4.97	1076677.921	
Endrin Ketone	5.47	2954134.276	1.55%
4,4'-DDT #2	5.41	288362852.4	% Breakdown
4,4'-DDE #2	4.76	800879.763	
4,4'-DDD #2	5.19	2588586.993	1.16%
Endrin #2	5.12	169305367.4	% Breakdown
Endrin Aldehyde #2	5.50	952223.975	
Endrin Ketone #2	6.06	1476119.219	1.41%

L1704816-05, -07, 10, -13

I:\Pest18\170216\18170216-01.d

Data File Name **18170216-01.d**  
 Data File Path **I:\Pest18\170216\**  
 Operator **PEST18:keg**  
 Date Acquired **2/16/2017 8:23**  
 Acq. Method File **PEST.M**  
 Sample Name **pem1817021601,42ee,,deg pi**  
 Instrument Name **Pest 18**

Name	Ret Time	Response	
4,4'-DDT	4.78	463921617.3	% Breakdown
4,4'-DDE	4.11	879788.152	
4,4'-DDD	4.58	3289987.75	0.89%
Endrin	4.51	260334077.1	% Breakdown
Endrin Aldehyde	4.98	1091535.346	
Endrin Ketone	5.47	2203149.43	1.25%
4,4'-DDT #2	5.41	248525602	% Breakdown
4,4'-DDE #2	4.76	786422.68	
4,4'-DDD #2	5.19	2846683.5	1.44%
Endrin #2	5.12	161189679.4	% Breakdown
Endrin Aldehyde #2	5.51	688100.971	
Endrin Ketone #2	6.06	1653063.009	1.43%

WG977965-1, -2, -3, -4, -5



## ANALYTICAL REPORT

Lab Number:	L1704984
Client:	Vertex Environmental Services, Inc. 400 Libbey Pkwy Weymouth, MA 02184
ATTN:	Bill Gibbons
Phone:	(617) 830-1540
Project Name:	E. BOSTON
Project Number:	43068
Report Date:	02/21/17

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Certifications & Approvals: MA (M-MA086), NH NELAP (2064), NJ NELAP (MA935), CT (PH-0574), IL (200077), ME (MA00086), MD (348), NH (2003), NY (11148), NC (25700/666), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #P330-14-00197).

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Eight Walkup Drive, Westborough, MA 01581-1019  
508-898-9220 (Fax) 508-898-9193 800-624-9220 - [www.alphalab.com](http://www.alphalab.com)



**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704984  
**Report Date:** 02/21/17

<b>Alpha Sample ID</b>	<b>Client ID</b>	<b>Matrix</b>	<b>Sample Location</b>	<b>Collection Date/Time</b>	<b>Receive Date</b>
L1704984-01	VES-131 (0-2)	SOIL	E. BOSTON	02/16/17 13:10	02/16/17
L1704984-02	VES-131 (3-5)	SOIL	E. BOSTON	02/16/17 13:15	02/16/17
L1704984-03	VES-130 (2-4)	SOIL	E. BOSTON	02/16/17 11:50	02/16/17
L1704984-04	VES-130 (8-10)	SOIL	E. BOSTON	02/16/17 11:55	02/16/17
L1704984-05	VES-134 (2-4)	SOIL	E. BOSTON	02/16/17 11:00	02/16/17
L1704984-06	VES-136 (0-2)	SOIL	E. BOSTON	02/16/17 09:15	02/16/17
L1704984-07	VES-136 (3-5)	SOIL	E. BOSTON	02/16/17 09:20	02/16/17
L1704984-08	VES-136 (10-12)	SOIL	E. BOSTON	02/16/17 09:25	02/16/17
L1704984-09	VES-107 (0-2)	SOIL	E. BOSTON	02/16/17 08:15	02/16/17
L1704984-10	VES-107 (2-4)	SOIL	E. BOSTON	02/16/17 08:20	02/16/17
L1704984-11	VES-105 (4-6)	SOIL	E. BOSTON	02/16/17 07:40	02/16/17
L1704984-12	VES-128 (1-2)	SOIL	E. BOSTON	02/16/17 12:00	02/16/17

**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704984  
**Report Date:** 02/21/17

### MADEP MCP Response Action Analytical Report Certification

This form provides certifications for all samples performed by MCP methods. Please refer to the Sample Results and Container Information sections of this report for specification of MCP methods used for each analysis. The following questions pertain only to MCP Analytical Methods.

<b>An affirmative response to questions A through F is required for "Presumptive Certainty" status</b>		
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
B	Were the analytical method(s) and all associated QC requirements specified in the selected CAM protocol(s) followed?	YES
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
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
E a.	VPH, EPH, and APH Methods only: Was each method conducted without significant modification(s)? (Refer to the individual method(s) for a list of significant modifications).	YES
E b.	APH and TO-15 Methods only: Was the complete analyte list reported for each method?	N/A
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

<b>A response to questions G, H and I is required for "Presumptive Certainty" status</b>		
G	Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocol(s)?	NO
H	Were all QC performance standards specified in the CAM protocol(s) achieved?	NO
I	Were results reported for the complete analyte list specified in the selected CAM protocol(s)?	NO

**For any questions answered "No", please refer to the case narrative section on the following page(s).**

Please note that sample matrix information is located in the Sample Results section of this report.



**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704984  
**Report Date:** 02/21/17

### Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively. When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. All specific QC information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated usability implications. Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances the specific failure is not narrated but noted in the associated QC table. The information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated usability implications.

Please see the associated ADEX data file for a comparison of laboratory reporting limits that were achieved with the regulatory Numerical Standards requested on the Chain of Custody.

#### HOLD POLICY

For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Client Service Representative and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Client Services at 800-624-9220 with any questions.

**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704984  
**Report Date:** 02/21/17

### Case Narrative (continued)

#### MCP Related Narratives

##### Sample Receipt

##### In reference to question H:

A Matrix Spike was not submitted for the analysis of Metals.

#### Volatile Organics

##### In reference to question H:

L1704984-03: The internal standard (IS) response for 1,4-dichlorobenzene-d4 (45%) and the surrogate recovery for 1,2-dichloroethane-d4 (133%) were outside the acceptance criteria; however, re-analysis could not be performed because the other low-level vial was broken. The results of the original analysis are reported; however, since the IS response was below the method criteria, all associated compounds and surrogate recoveries are considered to have a potentially high bias. A high-level analysis was performed and those results are also reported.

The initial calibration, associated with L1704984-02 through -05, -07, -08, -10,-11, and -12, did not meet the method required minimum response factor on the lowest calibration standard for 1,4-dioxane (0.0014), as well as the average response factor for 1,4-dioxane. The initial calibration verification is outside acceptance criteria for dichlorodifluoromethane (66%) and carbon disulfide (66%), but within overall method criteria.

The continuing calibration standards, associated with L1704984-02 through -05, -07, -08, -10, -11, and -12, is outside the acceptance criteria for several compounds; however, it is within overall method allowances. A copy of the continuing calibration standard is included as an addendum to this report.

#### Semivolatile Organics

##### In reference to question G:

L1704984-11: One or more of the target analytes did not achieve the requested CAM reporting limits.

#### VPH

##### In reference to question I:

All samples were analyzed for a subset of MCP analytes per the Chain of Custody.

**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704984  
**Report Date:** 02/21/17

### Case Narrative (continued)

#### EPH

In reference to question G:

L1704984-11: One or more of the target analytes did not achieve the requested CAM reporting limits.

#### PCBs

In reference to question G:

L1704984-12: One or more of the target analytes did not achieve the requested CAM reporting limits.

In reference to question H:

L1704984-12: The surrogate recoveries are below the acceptance criteria for 2,4,5,6-tetrachloro-m-xylene (0%) and decachlorobiphenyl (0%) due to the dilution required to quantitate the sample. Re-extraction was not required; therefore, the results of the original analysis are reported.

#### Pesticides

A copy of the Degradation Standards for 4,4'-DDT and Endrin breakdown products is included as an addendum.

In reference to question G:

One or more of the target analytes did not achieve the requested CAM reporting limits.

#### Metals

In reference to question I:

All samples were analyzed for a subset of MCP analytes per the Chain of Custody.

#### Non-MCP Related Narratives

#### Specific Conductance @ 25 C

The WG978620-2 Laboratory Duplicate RPD (56%), performed on L1704984-02, is above the acceptance criteria; however, the sample and duplicate results are less than five times the reporting limit. Therefore, the RPD is valid.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature:


 Kelly Stenstrom

Title: Technical Director/Representative

Date: 02/21/17

# ORGANICS



# VOLATILES



**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704984  
**Report Date:** 02/21/17

**SAMPLE RESULTS**

Lab ID: L1704984-02  
Client ID: VES-131 (3-5)  
Sample Location: E. BOSTON  
Matrix: Soil  
Analytical Method: 97,8260C  
Analytical Date: 02/17/17 16:22  
Analyst: JC  
Percent Solids: 88%

Date Collected: 02/16/17 13:15  
Date Received: 02/16/17  
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics by 8260/5035 - Westborough Lab</b>						
Methylene chloride	ND	ug/kg	6.8	--	--	1
1,1-Dichloroethane	ND	ug/kg	1.0	--	--	1
Chloroform	ND	ug/kg	1.0	--	--	1
Carbon tetrachloride	ND	ug/kg	0.68	--	--	1
1,2-Dichloropropane	ND	ug/kg	2.4	--	--	1
Dibromochloromethane	ND	ug/kg	0.68	--	--	1
1,1,2-Trichloroethane	ND	ug/kg	1.0	--	--	1
Tetrachloroethene	ND	ug/kg	0.68	--	--	1
Chlorobenzene	ND	ug/kg	0.68	--	--	1
Trichlorofluoromethane	ND	ug/kg	2.7	--	--	1
1,2-Dichloroethane	ND	ug/kg	0.68	--	--	1
1,1,1-Trichloroethane	ND	ug/kg	0.68	--	--	1
Bromodichloromethane	ND	ug/kg	0.68	--	--	1
trans-1,3-Dichloropropene	ND	ug/kg	0.68	--	--	1
cis-1,3-Dichloropropene	ND	ug/kg	0.68	--	--	1
1,3-Dichloropropene, Total	ND	ug/kg	0.68	--	--	1
1,1-Dichloropropene	ND	ug/kg	2.7	--	--	1
Bromoform	ND	ug/kg	2.7	--	--	1
1,1,2,2-Tetrachloroethane	ND	ug/kg	0.68	--	--	1
Benzene	ND	ug/kg	0.68	--	--	1
Toluene	ND	ug/kg	1.0	--	--	1
Ethylbenzene	ND	ug/kg	0.68	--	--	1
Chloromethane	ND	ug/kg	2.7	--	--	1
Bromomethane	ND	ug/kg	1.4	--	--	1
Vinyl chloride	ND	ug/kg	1.4	--	--	1
Chloroethane	ND	ug/kg	1.4	--	--	1
1,1-Dichloroethene	ND	ug/kg	0.68	--	--	1
trans-1,2-Dichloroethene	ND	ug/kg	1.0	--	--	1
Trichloroethene	ND	ug/kg	0.68	--	--	1
1,2-Dichlorobenzene	ND	ug/kg	2.7	--	--	1



**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704984  
**Report Date:** 02/21/17

**SAMPLE RESULTS**

Lab ID:	L1704984-02	Date Collected:	02/16/17 13:15			
Client ID:	VES-131 (3-5)	Date Received:	02/16/17			
Sample Location:	E. BOSTON	Field Prep:	Not Specified			
Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics by 8260/5035 - Westborough Lab</b>						
1,3-Dichlorobenzene	ND	ug/kg	2.7	--	1	
1,4-Dichlorobenzene	ND	ug/kg	2.7	--	1	
Methyl tert butyl ether	ND	ug/kg	1.4	--	1	
p/m-Xylene	ND	ug/kg	1.4	--	1	
o-Xylene	ND	ug/kg	1.4	--	1	
Xylenes, Total	ND	ug/kg	1.4	--	1	
cis-1,2-Dichloroethene	ND	ug/kg	0.68	--	1	
1,2-Dichloroethene, Total	ND	ug/kg	0.68	--	1	
Dibromomethane	ND	ug/kg	2.7	--	1	
1,2,3-Trichloropropane	ND	ug/kg	2.7	--	1	
Styrene	ND	ug/kg	1.4	--	1	
Dichlorodifluoromethane	ND	ug/kg	6.8	--	1	
Acetone	ND	ug/kg	24	--	1	
Carbon disulfide	ND	ug/kg	2.7	--	1	
Methyl ethyl ketone	ND	ug/kg	6.8	--	1	
Methyl isobutyl ketone	ND	ug/kg	6.8	--	1	
2-Hexanone	ND	ug/kg	6.8	--	1	
Bromochloromethane	ND	ug/kg	2.7	--	1	
Tetrahydrofuran	ND	ug/kg	2.7	--	1	
2,2-Dichloropropane	ND	ug/kg	3.4	--	1	
1,2-Dibromoethane	ND	ug/kg	2.7	--	1	
1,3-Dichloropropane	ND	ug/kg	2.7	--	1	
1,1,1,2-Tetrachloroethane	ND	ug/kg	0.68	--	1	
Bromobenzene	ND	ug/kg	3.4	--	1	
n-Butylbenzene	ND	ug/kg	0.68	--	1	
sec-Butylbenzene	ND	ug/kg	0.68	--	1	
tert-Butylbenzene	ND	ug/kg	2.7	--	1	
o-Chlorotoluene	ND	ug/kg	2.7	--	1	
p-Chlorotoluene	ND	ug/kg	2.7	--	1	
1,2-Dibromo-3-chloropropane	ND	ug/kg	2.7	--	1	
Hexachlorobutadiene	ND	ug/kg	2.7	--	1	
Isopropylbenzene	ND	ug/kg	0.68	--	1	
p-Isopropyltoluene	ND	ug/kg	0.68	--	1	
Naphthalene	ND	ug/kg	2.7	--	1	
n-Propylbenzene	ND	ug/kg	0.68	--	1	
1,2,3-Trichlorobenzene	ND	ug/kg	2.7	--	1	
1,2,4-Trichlorobenzene	ND	ug/kg	2.7	--	1	
1,3,5-Trimethylbenzene	ND	ug/kg	2.7	--	1	
1,2,4-Trimethylbenzene	ND	ug/kg	2.7	--	1	



Project Name: E. BOSTON

Lab Number: L1704984

Project Number: 43068

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**SAMPLE RESULTS**

Lab ID: L1704984-02  
 Client ID: VES-131 (3-5)  
 Sample Location: E. BOSTON

Date Collected: 02/16/17 13:15  
 Date Received: 02/16/17  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics by 8260/5035 - Westborough Lab						
Diethyl ether	ND	ug/kg	3.4	--	--	1
Diisopropyl Ether	ND	ug/kg	2.7	--	--	1
Ethyl-Tert-Butyl-Ether	ND	ug/kg	2.7	--	--	1
Tertiary-Amyl Methyl Ether	ND	ug/kg	2.7	--	--	1
1,4-Dioxane	ND	ug/kg	27	--	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	126		70-130
Toluene-d8	102		70-130
4-Bromofluorobenzene	86		70-130
Dibromofluoromethane	121		70-130

**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704984  
**Report Date:** 02/21/17

**SAMPLE RESULTS**

Lab ID: L1704984-03  
Client ID: VES-130 (2-4)  
Sample Location: E. BOSTON  
Matrix: Soil  
Analytical Method: 97,8260C  
Analytical Date: 02/17/17 16:48  
Analyst: JC  
Percent Solids: 75%

Date Collected: 02/16/17 11:50  
Date Received: 02/16/17  
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics by 8260/5035 - Westborough Lab</b>						
Methylene chloride	ND	ug/kg	10	--	--	1
1,1-Dichloroethane	ND	ug/kg	1.6	--	--	1
Chloroform	ND	ug/kg	1.6	--	--	1
Carbon tetrachloride	ND	ug/kg	1.0	--	--	1
1,2-Dichloropropane	ND	ug/kg	3.6	--	--	1
Dibromochloromethane	ND	ug/kg	1.0	--	--	1
1,1,2-Trichloroethane	ND	ug/kg	1.6	--	--	1
Tetrachloroethene	ND	ug/kg	1.0	--	--	1
Chlorobenzene	ND	ug/kg	1.0	--	--	1
Trichlorofluoromethane	ND	ug/kg	4.2	--	--	1
1,2-Dichloroethane	ND	ug/kg	1.0	--	--	1
1,1,1-Trichloroethane	ND	ug/kg	1.0	--	--	1
Bromodichloromethane	ND	ug/kg	1.0	--	--	1
trans-1,3-Dichloropropene	ND	ug/kg	1.0	--	--	1
cis-1,3-Dichloropropene	ND	ug/kg	1.0	--	--	1
1,3-Dichloropropene, Total	ND	ug/kg	1.0	--	--	1
1,1-Dichloropropene	ND	ug/kg	4.2	--	--	1
Bromoform	ND	ug/kg	4.2	--	--	1
1,1,2,2-Tetrachloroethane	ND	ug/kg	1.0	--	--	1
Benzene	ND	ug/kg	1.0	--	--	1
Toluene	ND	ug/kg	1.6	--	--	1
Ethylbenzene	ND	ug/kg	1.0	--	--	1
Chloromethane	ND	ug/kg	4.2	--	--	1
Bromomethane	ND	ug/kg	2.1	--	--	1
Vinyl chloride	ND	ug/kg	2.1	--	--	1
Chloroethane	ND	ug/kg	2.1	--	--	1
1,1-Dichloroethene	ND	ug/kg	1.0	--	--	1
trans-1,2-Dichloroethene	ND	ug/kg	1.6	--	--	1
Trichloroethene	ND	ug/kg	1.0	--	--	1
1,2-Dichlorobenzene	ND	ug/kg	4.2	--	--	1



**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704984  
**Report Date:** 02/21/17

**SAMPLE RESULTS**

Lab ID:	L1704984-03	Date Collected:	02/16/17 11:50			
Client ID:	VES-130 (2-4)	Date Received:	02/16/17			
Sample Location:	E. BOSTON	Field Prep:	Not Specified			
Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics by 8260/5035 - Westborough Lab</b>						
1,3-Dichlorobenzene	ND	ug/kg	4.2	--	1	
1,4-Dichlorobenzene	ND	ug/kg	4.2	--	1	
Methyl tert butyl ether	ND	ug/kg	2.1	--	1	
p/m-Xylene	ND	ug/kg	2.1	--	1	
o-Xylene	ND	ug/kg	2.1	--	1	
Xylenes, Total	ND	ug/kg	2.1	--	1	
cis-1,2-Dichloroethene	ND	ug/kg	1.0	--	1	
1,2-Dichloroethene, Total	ND	ug/kg	1.0	--	1	
Dibromomethane	ND	ug/kg	4.2	--	1	
1,2,3-Trichloropropane	ND	ug/kg	4.2	--	1	
Styrene	ND	ug/kg	2.1	--	1	
Dichlorodifluoromethane	ND	ug/kg	10	--	1	
Acetone	ND	ug/kg	38	--	1	
Carbon disulfide	ND	ug/kg	4.2	--	1	
Methyl ethyl ketone	ND	ug/kg	10	--	1	
Methyl isobutyl ketone	ND	ug/kg	10	--	1	
2-Hexanone	ND	ug/kg	10	--	1	
Bromochloromethane	ND	ug/kg	4.2	--	1	
Tetrahydrofuran	ND	ug/kg	4.2	--	1	
2,2-Dichloropropane	ND	ug/kg	5.2	--	1	
1,2-Dibromoethane	ND	ug/kg	4.2	--	1	
1,3-Dichloropropane	ND	ug/kg	4.2	--	1	
1,1,1,2-Tetrachloroethane	ND	ug/kg	1.0	--	1	
Bromobenzene	ND	ug/kg	5.2	--	1	
n-Butylbenzene	ND	ug/kg	1.0	--	1	
sec-Butylbenzene	ND	ug/kg	1.0	--	1	
tert-Butylbenzene	ND	ug/kg	4.2	--	1	
o-Chlorotoluene	ND	ug/kg	4.2	--	1	
p-Chlorotoluene	ND	ug/kg	4.2	--	1	
1,2-Dibromo-3-chloropropane	ND	ug/kg	4.2	--	1	
Hexachlorobutadiene	ND	ug/kg	4.2	--	1	
Isopropylbenzene	ND	ug/kg	1.0	--	1	
p-Isopropyltoluene	ND	ug/kg	1.0	--	1	
Naphthalene	ND	ug/kg	4.2	--	1	
n-Propylbenzene	ND	ug/kg	1.0	--	1	
1,2,3-Trichlorobenzene	ND	ug/kg	4.2	--	1	
1,2,4-Trichlorobenzene	ND	ug/kg	4.2	--	1	
1,3,5-Trimethylbenzene	ND	ug/kg	4.2	--	1	
1,2,4-Trimethylbenzene	ND	ug/kg	4.2	--	1	



Project Name: E. BOSTON

Lab Number: L1704984

Project Number: 43068

Report Date: 02/21/17

**SAMPLE RESULTS**

Lab ID: L1704984-03  
 Client ID: VES-130 (2-4)  
 Sample Location: E. BOSTON

Date Collected: 02/16/17 11:50  
 Date Received: 02/16/17  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics by 8260/5035 - Westborough Lab						
Diethyl ether	ND		ug/kg	5.2	--	1
Diisopropyl Ether	ND		ug/kg	4.2	--	1
Ethyl-Tert-Butyl-Ether	ND		ug/kg	4.2	--	1
Tertiary-Amyl Methyl Ether	ND		ug/kg	4.2	--	1
1,4-Dioxane	ND		ug/kg	42	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	133	Q	70-130
Toluene-d8	105		70-130
4-Bromofluorobenzene	95		70-130
Dibromofluoromethane	123		70-130

**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704984  
**Report Date:** 02/21/17

**SAMPLE RESULTS**

Lab ID: L1704984-03  
Client ID: VES-130 (2-4)  
Sample Location: E. BOSTON  
Matrix: Soil  
Analytical Method: 97,8260C  
Analytical Date: 02/20/17 14:29  
Analyst: MV  
Percent Solids: 75%

Date Collected: 02/16/17 11:50  
Date Received: 02/16/17  
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics by 5035 High - Westborough Lab</b>						
Methylene chloride	ND	ug/kg	730	--	--	1
1,1-Dichloroethane	ND	ug/kg	110	--	--	1
Chloroform	ND	ug/kg	110	--	--	1
Carbon tetrachloride	ND	ug/kg	73	--	--	1
1,2-Dichloropropane	ND	ug/kg	260	--	--	1
Dibromochloromethane	ND	ug/kg	73	--	--	1
1,1,2-Trichloroethane	ND	ug/kg	110	--	--	1
Tetrachloroethene	ND	ug/kg	73	--	--	1
Chlorobenzene	ND	ug/kg	73	--	--	1
Trichlorofluoromethane	ND	ug/kg	290	--	--	1
1,2-Dichloroethane	ND	ug/kg	73	--	--	1
1,1,1-Trichloroethane	ND	ug/kg	73	--	--	1
Bromodichloromethane	ND	ug/kg	73	--	--	1
trans-1,3-Dichloropropene	ND	ug/kg	73	--	--	1
cis-1,3-Dichloropropene	ND	ug/kg	73	--	--	1
1,3-Dichloropropene, Total	ND	ug/kg	73	--	--	1
1,1-Dichloropropene	ND	ug/kg	290	--	--	1
Bromoform	ND	ug/kg	290	--	--	1
1,1,2,2-Tetrachloroethane	ND	ug/kg	73	--	--	1
Benzene	ND	ug/kg	73	--	--	1
Toluene	ND	ug/kg	110	--	--	1
Ethylbenzene	ND	ug/kg	73	--	--	1
Chloromethane	ND	ug/kg	290	--	--	1
Bromomethane	ND	ug/kg	150	--	--	1
Vinyl chloride	ND	ug/kg	150	--	--	1
Chloroethane	ND	ug/kg	150	--	--	1
1,1-Dichloroethene	ND	ug/kg	73	--	--	1
trans-1,2-Dichloroethene	ND	ug/kg	110	--	--	1
Trichloroethene	ND	ug/kg	73	--	--	1
1,2-Dichlorobenzene	ND	ug/kg	290	--	--	1



**Project Name:** E. BOSTON  
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**Lab Number:** L1704984  
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**SAMPLE RESULTS**

Lab ID:	L1704984-03	Date Collected:	02/16/17 11:50		
Client ID:	VES-130 (2-4)	Date Received:	02/16/17		
Sample Location:	E. BOSTON	Field Prep:	Not Specified		
Parameter	Result	Qualifier	Units	RL	MDL
<b>MCP Volatile Organics by 5035 High - Westborough Lab</b>					
1,3-Dichlorobenzene	ND	ug/kg	290	--	1
1,4-Dichlorobenzene	ND	ug/kg	290	--	1
Methyl tert butyl ether	ND	ug/kg	150	--	1
p/m-Xylene	ND	ug/kg	150	--	1
o-Xylene	ND	ug/kg	150	--	1
Xylenes, Total	ND	ug/kg	150	--	1
cis-1,2-Dichloroethene	ND	ug/kg	73	--	1
1,2-Dichloroethene, Total	ND	ug/kg	73	--	1
Dibromomethane	ND	ug/kg	290	--	1
1,2,3-Trichloropropane	ND	ug/kg	290	--	1
Styrene	ND	ug/kg	150	--	1
Dichlorodifluoromethane	ND	ug/kg	730	--	1
Acetone	ND	ug/kg	2600	--	1
Carbon disulfide	300	ug/kg	290	--	1
Methyl ethyl ketone	ND	ug/kg	730	--	1
Methyl isobutyl ketone	ND	ug/kg	730	--	1
2-Hexanone	ND	ug/kg	730	--	1
Bromochloromethane	ND	ug/kg	290	--	1
Tetrahydrofuran	ND	ug/kg	290	--	1
2,2-Dichloropropane	ND	ug/kg	370	--	1
1,2-Dibromoethane	ND	ug/kg	290	--	1
1,3-Dichloropropane	ND	ug/kg	290	--	1
1,1,1,2-Tetrachloroethane	ND	ug/kg	73	--	1
Bromobenzene	ND	ug/kg	370	--	1
n-Butylbenzene	ND	ug/kg	73	--	1
sec-Butylbenzene	ND	ug/kg	73	--	1
tert-Butylbenzene	ND	ug/kg	290	--	1
o-Chlorotoluene	ND	ug/kg	290	--	1
p-Chlorotoluene	ND	ug/kg	290	--	1
1,2-Dibromo-3-chloropropane	ND	ug/kg	290	--	1
Hexachlorobutadiene	ND	ug/kg	290	--	1
Isopropylbenzene	ND	ug/kg	73	--	1
p-Isopropyltoluene	ND	ug/kg	73	--	1
Naphthalene	ND	ug/kg	290	--	1
n-Propylbenzene	ND	ug/kg	73	--	1
1,2,3-Trichlorobenzene	ND	ug/kg	290	--	1
1,2,4-Trichlorobenzene	ND	ug/kg	290	--	1
1,3,5-Trimethylbenzene	ND	ug/kg	290	--	1
1,2,4-Trimethylbenzene	ND	ug/kg	290	--	1



Project Name: E. BOSTON

Lab Number: L1704984

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**SAMPLE RESULTS**

Lab ID: L1704984-03  
 Client ID: VES-130 (2-4)  
 Sample Location: E. BOSTON

Date Collected: 02/16/17 11:50  
 Date Received: 02/16/17  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics by 5035 High - Westborough Lab						
Diethyl ether	ND	ug/kg	370	--	--	1
Diisopropyl Ether	ND	ug/kg	290	--	--	1
Ethyl-Tert-Butyl-Ether	ND	ug/kg	290	--	--	1
Tertiary-Amyl Methyl Ether	ND	ug/kg	290	--	--	1
1,4-Dioxane	ND	ug/kg	7300	--	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	119		70-130
Toluene-d8	105		70-130
4-Bromofluorobenzene	96		70-130
Dibromofluoromethane	111		70-130

**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704984  
**Report Date:** 02/21/17

**SAMPLE RESULTS**

Lab ID: L1704984-04  
Client ID: VES-130 (8-10)  
Sample Location: E. BOSTON  
Matrix: Soil  
Analytical Method: 97,8260C  
Analytical Date: 02/17/17 17:14  
Analyst: JC  
Percent Solids: 68%

Date Collected: 02/16/17 11:55  
Date Received: 02/16/17  
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics by 8260/5035 - Westborough Lab</b>						
Methylene chloride	ND	ug/kg	15	--	--	1
1,1-Dichloroethane	ND	ug/kg	2.3	--	--	1
Chloroform	ND	ug/kg	2.3	--	--	1
Carbon tetrachloride	ND	ug/kg	1.5	--	--	1
1,2-Dichloropropane	ND	ug/kg	5.4	--	--	1
Dibromochloromethane	ND	ug/kg	1.5	--	--	1
1,1,2-Trichloroethane	ND	ug/kg	2.3	--	--	1
Tetrachloroethene	ND	ug/kg	1.5	--	--	1
Chlorobenzene	ND	ug/kg	1.5	--	--	1
Trichlorofluoromethane	ND	ug/kg	6.1	--	--	1
1,2-Dichloroethane	ND	ug/kg	1.5	--	--	1
1,1,1-Trichloroethane	ND	ug/kg	1.5	--	--	1
Bromodichloromethane	ND	ug/kg	1.5	--	--	1
trans-1,3-Dichloropropene	ND	ug/kg	1.5	--	--	1
cis-1,3-Dichloropropene	ND	ug/kg	1.5	--	--	1
1,3-Dichloropropene, Total	ND	ug/kg	1.5	--	--	1
1,1-Dichloropropene	ND	ug/kg	6.1	--	--	1
Bromoform	ND	ug/kg	6.1	--	--	1
1,1,2,2-Tetrachloroethane	ND	ug/kg	1.5	--	--	1
Benzene	ND	ug/kg	1.5	--	--	1
Toluene	ND	ug/kg	2.3	--	--	1
Ethylbenzene	ND	ug/kg	1.5	--	--	1
Chloromethane	ND	ug/kg	6.1	--	--	1
Bromomethane	ND	ug/kg	3.0	--	--	1
Vinyl chloride	ND	ug/kg	3.0	--	--	1
Chloroethane	ND	ug/kg	3.0	--	--	1
1,1-Dichloroethene	ND	ug/kg	1.5	--	--	1
trans-1,2-Dichloroethene	ND	ug/kg	2.3	--	--	1
Trichloroethene	ND	ug/kg	1.5	--	--	1
1,2-Dichlorobenzene	ND	ug/kg	6.1	--	--	1



**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704984  
**Report Date:** 02/21/17

**SAMPLE RESULTS**

Lab ID:	L1704984-04	Date Collected:	02/16/17 11:55		
Client ID:	VES-130 (8-10)	Date Received:	02/16/17		
Sample Location:	E. BOSTON	Field Prep:	Not Specified		
Parameter	Result	Qualifier	Units	RL	MDL
<b>MCP Volatile Organics by 8260/5035 - Westborough Lab</b>					
1,3-Dichlorobenzene	ND	ug/kg	6.1	--	1
1,4-Dichlorobenzene	ND	ug/kg	6.1	--	1
Methyl tert butyl ether	ND	ug/kg	3.0	--	1
p/m-Xylene	ND	ug/kg	3.0	--	1
o-Xylene	ND	ug/kg	3.0	--	1
Xylenes, Total	ND	ug/kg	3.0	--	1
cis-1,2-Dichloroethene	ND	ug/kg	1.5	--	1
1,2-Dichloroethene, Total	ND	ug/kg	1.5	--	1
Dibromomethane	ND	ug/kg	6.1	--	1
1,2,3-Trichloropropane	ND	ug/kg	6.1	--	1
Styrene	ND	ug/kg	3.0	--	1
Dichlorodifluoromethane	ND	ug/kg	15	--	1
Acetone	230	ug/kg	55	--	1
Carbon disulfide	6.7	ug/kg	6.1	--	1
Methyl ethyl ketone	26	ug/kg	15	--	1
Methyl isobutyl ketone	ND	ug/kg	15	--	1
2-Hexanone	ND	ug/kg	15	--	1
Bromochloromethane	ND	ug/kg	6.1	--	1
Tetrahydrofuran	ND	ug/kg	6.1	--	1
2,2-Dichloropropane	ND	ug/kg	7.6	--	1
1,2-Dibromoethane	ND	ug/kg	6.1	--	1
1,3-Dichloropropane	ND	ug/kg	6.1	--	1
1,1,1,2-Tetrachloroethane	ND	ug/kg	1.5	--	1
Bromobenzene	ND	ug/kg	7.6	--	1
n-Butylbenzene	ND	ug/kg	1.5	--	1
sec-Butylbenzene	ND	ug/kg	1.5	--	1
tert-Butylbenzene	ND	ug/kg	6.1	--	1
o-Chlorotoluene	ND	ug/kg	6.1	--	1
p-Chlorotoluene	ND	ug/kg	6.1	--	1
1,2-Dibromo-3-chloropropane	ND	ug/kg	6.1	--	1
Hexachlorobutadiene	ND	ug/kg	6.1	--	1
Isopropylbenzene	ND	ug/kg	1.5	--	1
p-Isopropyltoluene	2.1	ug/kg	1.5	--	1
Naphthalene	ND	ug/kg	6.1	--	1
n-Propylbenzene	ND	ug/kg	1.5	--	1
1,2,3-Trichlorobenzene	ND	ug/kg	6.1	--	1
1,2,4-Trichlorobenzene	ND	ug/kg	6.1	--	1
1,3,5-Trimethylbenzene	ND	ug/kg	6.1	--	1
1,2,4-Trimethylbenzene	ND	ug/kg	6.1	--	1



Project Name: E. BOSTON

Lab Number: L1704984

Project Number: 43068

Report Date: 02/21/17

**SAMPLE RESULTS**

Lab ID: L1704984-04  
 Client ID: VES-130 (8-10)  
 Sample Location: E. BOSTON

Date Collected: 02/16/17 11:55  
 Date Received: 02/16/17  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics by 8260/5035 - Westborough Lab						
Diethyl ether	ND	ug/kg	7.6	--	--	1
Diisopropyl Ether	ND	ug/kg	6.1	--	--	1
Ethyl-Tert-Butyl-Ether	ND	ug/kg	6.1	--	--	1
Tertiary-Amyl Methyl Ether	ND	ug/kg	6.1	--	--	1
1,4-Dioxane	ND	ug/kg	61	--	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	129		70-130
Toluene-d8	100		70-130
4-Bromofluorobenzene	114		70-130
Dibromofluoromethane	121		70-130

**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704984  
**Report Date:** 02/21/17

**SAMPLE RESULTS**

Lab ID: L1704984-05  
Client ID: VES-134 (2-4)  
Sample Location: E. BOSTON  
Matrix: Soil  
Analytical Method: 97,8260C  
Analytical Date: 02/17/17 17:40  
Analyst: JC  
Percent Solids: 74%

Date Collected: 02/16/17 11:00  
Date Received: 02/16/17  
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics by 8260/5035 - Westborough Lab</b>						
Methylene chloride	ND	ug/kg	10	--	--	1
1,1-Dichloroethane	ND	ug/kg	1.5	--	--	1
Chloroform	ND	ug/kg	1.5	--	--	1
Carbon tetrachloride	ND	ug/kg	1.0	--	--	1
1,2-Dichloropropane	ND	ug/kg	3.6	--	--	1
Dibromochloromethane	ND	ug/kg	1.0	--	--	1
1,1,2-Trichloroethane	ND	ug/kg	1.5	--	--	1
Tetrachloroethene	ND	ug/kg	1.0	--	--	1
Chlorobenzene	ND	ug/kg	1.0	--	--	1
Trichlorofluoromethane	ND	ug/kg	4.1	--	--	1
1,2-Dichloroethane	ND	ug/kg	1.0	--	--	1
1,1,1-Trichloroethane	ND	ug/kg	1.0	--	--	1
Bromodichloromethane	ND	ug/kg	1.0	--	--	1
trans-1,3-Dichloropropene	ND	ug/kg	1.0	--	--	1
cis-1,3-Dichloropropene	ND	ug/kg	1.0	--	--	1
1,3-Dichloropropene, Total	ND	ug/kg	1.0	--	--	1
1,1-Dichloropropene	ND	ug/kg	4.1	--	--	1
Bromoform	ND	ug/kg	4.1	--	--	1
1,1,2,2-Tetrachloroethane	ND	ug/kg	1.0	--	--	1
Benzene	ND	ug/kg	1.0	--	--	1
Toluene	ND	ug/kg	1.5	--	--	1
Ethylbenzene	ND	ug/kg	1.0	--	--	1
Chloromethane	ND	ug/kg	4.1	--	--	1
Bromomethane	ND	ug/kg	2.0	--	--	1
Vinyl chloride	ND	ug/kg	2.0	--	--	1
Chloroethane	ND	ug/kg	2.0	--	--	1
1,1-Dichloroethene	ND	ug/kg	1.0	--	--	1
trans-1,2-Dichloroethene	ND	ug/kg	1.5	--	--	1
Trichloroethene	ND	ug/kg	1.0	--	--	1
1,2-Dichlorobenzene	ND	ug/kg	4.1	--	--	1



**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704984  
**Report Date:** 02/21/17

**SAMPLE RESULTS**

Lab ID:	L1704984-05	Date Collected:	02/16/17 11:00			
Client ID:	VES-134 (2-4)	Date Received:	02/16/17			
Sample Location:	E. BOSTON	Field Prep:	Not Specified			
Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics by 8260/5035 - Westborough Lab</b>						
1,3-Dichlorobenzene	ND	ug/kg	4.1	--	1	
1,4-Dichlorobenzene	ND	ug/kg	4.1	--	1	
Methyl tert butyl ether	ND	ug/kg	2.0	--	1	
p/m-Xylene	ND	ug/kg	2.0	--	1	
o-Xylene	ND	ug/kg	2.0	--	1	
Xylenes, Total	ND	ug/kg	2.0	--	1	
cis-1,2-Dichloroethene	ND	ug/kg	1.0	--	1	
1,2-Dichloroethene, Total	ND	ug/kg	1.0	--	1	
Dibromomethane	ND	ug/kg	4.1	--	1	
1,2,3-Trichloropropane	ND	ug/kg	4.1	--	1	
Styrene	ND	ug/kg	2.0	--	1	
Dichlorodifluoromethane	ND	ug/kg	10	--	1	
Acetone	180	ug/kg	37	--	1	
Carbon disulfide	ND	ug/kg	4.1	--	1	
Methyl ethyl ketone	22	ug/kg	10	--	1	
Methyl isobutyl ketone	ND	ug/kg	10	--	1	
2-Hexanone	ND	ug/kg	10	--	1	
Bromochloromethane	ND	ug/kg	4.1	--	1	
Tetrahydrofuran	ND	ug/kg	4.1	--	1	
2,2-Dichloropropane	ND	ug/kg	5.1	--	1	
1,2-Dibromoethane	ND	ug/kg	4.1	--	1	
1,3-Dichloropropane	ND	ug/kg	4.1	--	1	
1,1,1,2-Tetrachloroethane	ND	ug/kg	1.0	--	1	
Bromobenzene	ND	ug/kg	5.1	--	1	
n-Butylbenzene	ND	ug/kg	1.0	--	1	
sec-Butylbenzene	ND	ug/kg	1.0	--	1	
tert-Butylbenzene	ND	ug/kg	4.1	--	1	
o-Chlorotoluene	ND	ug/kg	4.1	--	1	
p-Chlorotoluene	ND	ug/kg	4.1	--	1	
1,2-Dibromo-3-chloropropane	ND	ug/kg	4.1	--	1	
Hexachlorobutadiene	ND	ug/kg	4.1	--	1	
Isopropylbenzene	ND	ug/kg	1.0	--	1	
p-Isopropyltoluene	ND	ug/kg	1.0	--	1	
Naphthalene	ND	ug/kg	4.1	--	1	
n-Propylbenzene	ND	ug/kg	1.0	--	1	
1,2,3-Trichlorobenzene	ND	ug/kg	4.1	--	1	
1,2,4-Trichlorobenzene	ND	ug/kg	4.1	--	1	
1,3,5-Trimethylbenzene	ND	ug/kg	4.1	--	1	
1,2,4-Trimethylbenzene	ND	ug/kg	4.1	--	1	



Project Name: E. BOSTON

Lab Number: L1704984

Project Number: 43068

Report Date: 02/21/17

**SAMPLE RESULTS**

Lab ID: L1704984-05  
 Client ID: VES-134 (2-4)  
 Sample Location: E. BOSTON

Date Collected: 02/16/17 11:00  
 Date Received: 02/16/17  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics by 8260/5035 - Westborough Lab						
Diethyl ether	ND	ug/kg	5.1	--	--	1
Diisopropyl Ether	ND	ug/kg	4.1	--	--	1
Ethyl-Tert-Butyl-Ether	ND	ug/kg	4.1	--	--	1
Tertiary-Amyl Methyl Ether	ND	ug/kg	4.1	--	--	1
1,4-Dioxane	ND	ug/kg	41	--	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	125		70-130
Toluene-d8	94		70-130
4-Bromofluorobenzene	107		70-130
Dibromofluoromethane	114		70-130

Project Name: E. BOSTON

Lab Number: L1704984

Project Number: 43068

Report Date: 02/21/17

**SAMPLE RESULTS**

Lab ID: L1704984-07  
 Client ID: VES-136 (3-5)  
 Sample Location: E. BOSTON  
 Matrix: Soil  
 Analytical Method: 97,8260C  
 Analytical Date: 02/17/17 18:06  
 Analyst: JC  
 Percent Solids: 77%

Date Collected: 02/16/17 09:20  
 Date Received: 02/16/17  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics by 8260/5035 - Westborough Lab</b>						
Methylene chloride	ND	ug/kg	10	--	--	1
1,1-Dichloroethane	ND	ug/kg	1.5	--	--	1
Chloroform	ND	ug/kg	1.5	--	--	1
Carbon tetrachloride	ND	ug/kg	1.0	--	--	1
1,2-Dichloropropane	ND	ug/kg	3.5	--	--	1
Dibromochloromethane	ND	ug/kg	1.0	--	--	1
1,1,2-Trichloroethane	ND	ug/kg	1.5	--	--	1
Tetrachloroethene	ND	ug/kg	1.0	--	--	1
Chlorobenzene	ND	ug/kg	1.0	--	--	1
Trichlorofluoromethane	ND	ug/kg	4.0	--	--	1
1,2-Dichloroethane	ND	ug/kg	1.0	--	--	1
1,1,1-Trichloroethane	ND	ug/kg	1.0	--	--	1
Bromodichloromethane	ND	ug/kg	1.0	--	--	1
trans-1,3-Dichloropropene	ND	ug/kg	1.0	--	--	1
cis-1,3-Dichloropropene	ND	ug/kg	1.0	--	--	1
1,3-Dichloropropene, Total	ND	ug/kg	1.0	--	--	1
1,1-Dichloropropene	ND	ug/kg	4.0	--	--	1
Bromoform	ND	ug/kg	4.0	--	--	1
1,1,2,2-Tetrachloroethane	ND	ug/kg	1.0	--	--	1
Benzene	ND	ug/kg	1.0	--	--	1
Toluene	ND	ug/kg	1.5	--	--	1
Ethylbenzene	ND	ug/kg	1.0	--	--	1
Chloromethane	ND	ug/kg	4.0	--	--	1
Bromomethane	ND	ug/kg	2.0	--	--	1
Vinyl chloride	ND	ug/kg	2.0	--	--	1
Chloroethane	ND	ug/kg	2.0	--	--	1
1,1-Dichloroethene	ND	ug/kg	1.0	--	--	1
trans-1,2-Dichloroethene	ND	ug/kg	1.5	--	--	1
Trichloroethene	ND	ug/kg	1.0	--	--	1
1,2-Dichlorobenzene	ND	ug/kg	4.0	--	--	1



**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704984  
**Report Date:** 02/21/17

**SAMPLE RESULTS**

Lab ID:	L1704984-07	Date Collected:	02/16/17 09:20			
Client ID:	VES-136 (3-5)	Date Received:	02/16/17			
Sample Location:	E. BOSTON	Field Prep:	Not Specified			
Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics by 8260/5035 - Westborough Lab</b>						
1,3-Dichlorobenzene	ND	ug/kg	4.0	--	1	
1,4-Dichlorobenzene	ND	ug/kg	4.0	--	1	
Methyl tert butyl ether	ND	ug/kg	2.0	--	1	
p/m-Xylene	ND	ug/kg	2.0	--	1	
o-Xylene	ND	ug/kg	2.0	--	1	
Xylenes, Total	ND	ug/kg	2.0	--	1	
cis-1,2-Dichloroethene	ND	ug/kg	1.0	--	1	
1,2-Dichloroethene, Total	ND	ug/kg	1.0	--	1	
Dibromomethane	ND	ug/kg	4.0	--	1	
1,2,3-Trichloropropane	ND	ug/kg	4.0	--	1	
Styrene	ND	ug/kg	2.0	--	1	
Dichlorodifluoromethane	ND	ug/kg	10	--	1	
Acetone	ND	ug/kg	36	--	1	
Carbon disulfide	ND	ug/kg	4.0	--	1	
Methyl ethyl ketone	ND	ug/kg	10	--	1	
Methyl isobutyl ketone	ND	ug/kg	10	--	1	
2-Hexanone	ND	ug/kg	10	--	1	
Bromochloromethane	ND	ug/kg	4.0	--	1	
Tetrahydrofuran	ND	ug/kg	4.0	--	1	
2,2-Dichloropropane	ND	ug/kg	5.0	--	1	
1,2-Dibromoethane	ND	ug/kg	4.0	--	1	
1,3-Dichloropropane	ND	ug/kg	4.0	--	1	
1,1,1,2-Tetrachloroethane	ND	ug/kg	1.0	--	1	
Bromobenzene	ND	ug/kg	5.0	--	1	
n-Butylbenzene	ND	ug/kg	1.0	--	1	
sec-Butylbenzene	ND	ug/kg	1.0	--	1	
tert-Butylbenzene	ND	ug/kg	4.0	--	1	
o-Chlorotoluene	ND	ug/kg	4.0	--	1	
p-Chlorotoluene	ND	ug/kg	4.0	--	1	
1,2-Dibromo-3-chloropropane	ND	ug/kg	4.0	--	1	
Hexachlorobutadiene	ND	ug/kg	4.0	--	1	
Isopropylbenzene	ND	ug/kg	1.0	--	1	
p-Isopropyltoluene	ND	ug/kg	1.0	--	1	
Naphthalene	ND	ug/kg	4.0	--	1	
n-Propylbenzene	ND	ug/kg	1.0	--	1	
1,2,3-Trichlorobenzene	ND	ug/kg	4.0	--	1	
1,2,4-Trichlorobenzene	ND	ug/kg	4.0	--	1	
1,3,5-Trimethylbenzene	ND	ug/kg	4.0	--	1	
1,2,4-Trimethylbenzene	ND	ug/kg	4.0	--	1	



Project Name: E. BOSTON

Lab Number: L1704984

Project Number: 43068

Report Date: 02/21/17

**SAMPLE RESULTS**

Lab ID: L1704984-07  
 Client ID: VES-136 (3-5)  
 Sample Location: E. BOSTON

Date Collected: 02/16/17 09:20  
 Date Received: 02/16/17  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics by 8260/5035 - Westborough Lab						
Diethyl ether	ND	ug/kg	5.0	--	--	1
Diisopropyl Ether	ND	ug/kg	4.0	--	--	1
Ethyl-Tert-Butyl-Ether	ND	ug/kg	4.0	--	--	1
Tertiary-Amyl Methyl Ether	ND	ug/kg	4.0	--	--	1
1,4-Dioxane	ND	ug/kg	40	--	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	124		70-130
Toluene-d8	102		70-130
4-Bromofluorobenzene	89		70-130
Dibromofluoromethane	119		70-130

**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704984  
**Report Date:** 02/21/17

**SAMPLE RESULTS**

Lab ID: L1704984-08  
Client ID: VES-136 (10-12)  
Sample Location: E. BOSTON  
Matrix: Soil  
Analytical Method: 97,8260C  
Analytical Date: 02/17/17 18:32  
Analyst: PK  
Percent Solids: 78%

Date Collected: 02/16/17 09:25  
Date Received: 02/16/17  
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics by 8260/5035 - Westborough Lab</b>						
Methylene chloride	ND	ug/kg	6.4	--	--	1
1,1-Dichloroethane	ND	ug/kg	0.96	--	--	1
Chloroform	ND	ug/kg	0.96	--	--	1
Carbon tetrachloride	ND	ug/kg	0.64	--	--	1
1,2-Dichloropropane	ND	ug/kg	2.2	--	--	1
Dibromochloromethane	ND	ug/kg	0.64	--	--	1
1,1,2-Trichloroethane	ND	ug/kg	0.96	--	--	1
Tetrachloroethene	ND	ug/kg	0.64	--	--	1
Chlorobenzene	ND	ug/kg	0.64	--	--	1
Trichlorofluoromethane	ND	ug/kg	2.6	--	--	1
1,2-Dichloroethane	ND	ug/kg	0.64	--	--	1
1,1,1-Trichloroethane	ND	ug/kg	0.64	--	--	1
Bromodichloromethane	ND	ug/kg	0.64	--	--	1
trans-1,3-Dichloropropene	ND	ug/kg	0.64	--	--	1
cis-1,3-Dichloropropene	ND	ug/kg	0.64	--	--	1
1,3-Dichloropropene, Total	ND	ug/kg	0.64	--	--	1
1,1-Dichloropropene	ND	ug/kg	2.6	--	--	1
Bromoform	ND	ug/kg	2.6	--	--	1
1,1,2,2-Tetrachloroethane	ND	ug/kg	0.64	--	--	1
Benzene	ND	ug/kg	0.64	--	--	1
Toluene	ND	ug/kg	0.96	--	--	1
Ethylbenzene	ND	ug/kg	0.64	--	--	1
Chloromethane	ND	ug/kg	2.6	--	--	1
Bromomethane	ND	ug/kg	1.3	--	--	1
Vinyl chloride	ND	ug/kg	1.3	--	--	1
Chloroethane	ND	ug/kg	1.3	--	--	1
1,1-Dichloroethene	ND	ug/kg	0.64	--	--	1
trans-1,2-Dichloroethene	ND	ug/kg	0.96	--	--	1
Trichloroethene	ND	ug/kg	0.64	--	--	1
1,2-Dichlorobenzene	ND	ug/kg	2.6	--	--	1



**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704984  
**Report Date:** 02/21/17

**SAMPLE RESULTS**

Lab ID:	L1704984-08	Date Collected:	02/16/17 09:25		
Client ID:	VES-136 (10-12)	Date Received:	02/16/17		
Sample Location:	E. BOSTON	Field Prep:	Not Specified		
Parameter	Result	Qualifier	Units	RL	MDL
<b>MCP Volatile Organics by 8260/5035 - Westborough Lab</b>					
1,3-Dichlorobenzene	ND	ug/kg	2.6	--	1
1,4-Dichlorobenzene	ND	ug/kg	2.6	--	1
Methyl tert butyl ether	ND	ug/kg	1.3	--	1
p/m-Xylene	ND	ug/kg	1.3	--	1
o-Xylene	ND	ug/kg	1.3	--	1
Xylenes, Total	ND	ug/kg	1.3	--	1
cis-1,2-Dichloroethene	ND	ug/kg	0.64	--	1
1,2-Dichloroethene, Total	ND	ug/kg	0.64	--	1
Dibromomethane	ND	ug/kg	2.6	--	1
1,2,3-Trichloropropane	ND	ug/kg	2.6	--	1
Styrene	ND	ug/kg	1.3	--	1
Dichlorodifluoromethane	ND	ug/kg	6.4	--	1
Acetone	ND	ug/kg	23	--	1
Carbon disulfide	ND	ug/kg	2.6	--	1
Methyl ethyl ketone	ND	ug/kg	6.4	--	1
Methyl isobutyl ketone	ND	ug/kg	6.4	--	1
2-Hexanone	ND	ug/kg	6.4	--	1
Bromochloromethane	ND	ug/kg	2.6	--	1
Tetrahydrofuran	ND	ug/kg	2.6	--	1
2,2-Dichloropropane	ND	ug/kg	3.2	--	1
1,2-Dibromoethane	ND	ug/kg	2.6	--	1
1,3-Dichloropropane	ND	ug/kg	2.6	--	1
1,1,1,2-Tetrachloroethane	ND	ug/kg	0.64	--	1
Bromobenzene	ND	ug/kg	3.2	--	1
n-Butylbenzene	ND	ug/kg	0.64	--	1
sec-Butylbenzene	ND	ug/kg	0.64	--	1
tert-Butylbenzene	ND	ug/kg	2.6	--	1
o-Chlorotoluene	ND	ug/kg	2.6	--	1
p-Chlorotoluene	ND	ug/kg	2.6	--	1
1,2-Dibromo-3-chloropropane	ND	ug/kg	2.6	--	1
Hexachlorobutadiene	ND	ug/kg	2.6	--	1
Isopropylbenzene	ND	ug/kg	0.64	--	1
p-Isopropyltoluene	ND	ug/kg	0.64	--	1
Naphthalene	ND	ug/kg	2.6	--	1
n-Propylbenzene	ND	ug/kg	0.64	--	1
1,2,3-Trichlorobenzene	ND	ug/kg	2.6	--	1
1,2,4-Trichlorobenzene	ND	ug/kg	2.6	--	1
1,3,5-Trimethylbenzene	ND	ug/kg	2.6	--	1
1,2,4-Trimethylbenzene	ND	ug/kg	2.6	--	1



Project Name: E. BOSTON

Lab Number: L1704984

Project Number: 43068

Report Date: 02/21/17

**SAMPLE RESULTS**

Lab ID: L1704984-08  
 Client ID: VES-136 (10-12)  
 Sample Location: E. BOSTON

Date Collected: 02/16/17 09:25  
 Date Received: 02/16/17  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics by 8260/5035 - Westborough Lab						
Diethyl ether	ND	ug/kg	3.2	--	--	1
Diisopropyl Ether	ND	ug/kg	2.6	--	--	1
Ethyl-Tert-Butyl-Ether	ND	ug/kg	2.6	--	--	1
Tertiary-Amyl Methyl Ether	ND	ug/kg	2.6	--	--	1
1,4-Dioxane	ND	ug/kg	26	--	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	129		70-130
Toluene-d8	105		70-130
4-Bromofluorobenzene	97		70-130
Dibromofluoromethane	125		70-130

Project Name: E. BOSTON

Lab Number: L1704984

Project Number: 43068

Report Date: 02/21/17

**SAMPLE RESULTS**

Lab ID: L1704984-10  
 Client ID: VES-107 (2-4)  
 Sample Location: E. BOSTON  
 Matrix: Soil  
 Analytical Method: 97,8260C  
 Analytical Date: 02/17/17 18:58  
 Analyst: PK  
 Percent Solids: 87%

Date Collected: 02/16/17 08:20  
 Date Received: 02/16/17  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics by 8260/5035 - Westborough Lab</b>						
Methylene chloride	ND	ug/kg	7.1	--	--	1
1,1-Dichloroethane	ND	ug/kg	1.1	--	--	1
Chloroform	ND	ug/kg	1.1	--	--	1
Carbon tetrachloride	ND	ug/kg	0.71	--	--	1
1,2-Dichloropropane	ND	ug/kg	2.5	--	--	1
Dibromochloromethane	ND	ug/kg	0.71	--	--	1
1,1,2-Trichloroethane	ND	ug/kg	1.1	--	--	1
Tetrachloroethene	ND	ug/kg	0.71	--	--	1
Chlorobenzene	ND	ug/kg	0.71	--	--	1
Trichlorofluoromethane	ND	ug/kg	2.8	--	--	1
1,2-Dichloroethane	ND	ug/kg	0.71	--	--	1
1,1,1-Trichloroethane	ND	ug/kg	0.71	--	--	1
Bromodichloromethane	ND	ug/kg	0.71	--	--	1
trans-1,3-Dichloropropene	ND	ug/kg	0.71	--	--	1
cis-1,3-Dichloropropene	ND	ug/kg	0.71	--	--	1
1,3-Dichloropropene, Total	ND	ug/kg	0.71	--	--	1
1,1-Dichloropropene	ND	ug/kg	2.8	--	--	1
Bromoform	ND	ug/kg	2.8	--	--	1
1,1,2,2-Tetrachloroethane	ND	ug/kg	0.71	--	--	1
Benzene	ND	ug/kg	0.71	--	--	1
Toluene	ND	ug/kg	1.1	--	--	1
Ethylbenzene	ND	ug/kg	0.71	--	--	1
Chloromethane	ND	ug/kg	2.8	--	--	1
Bromomethane	ND	ug/kg	1.4	--	--	1
Vinyl chloride	ND	ug/kg	1.4	--	--	1
Chloroethane	ND	ug/kg	1.4	--	--	1
1,1-Dichloroethene	ND	ug/kg	0.71	--	--	1
trans-1,2-Dichloroethene	ND	ug/kg	1.1	--	--	1
Trichloroethene	ND	ug/kg	0.71	--	--	1
1,2-Dichlorobenzene	ND	ug/kg	2.8	--	--	1



**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704984  
**Report Date:** 02/21/17

**SAMPLE RESULTS**

Lab ID:	L1704984-10	Date Collected:	02/16/17 08:20			
Client ID:	VES-107 (2-4)	Date Received:	02/16/17			
Sample Location:	E. BOSTON	Field Prep:	Not Specified			
Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics by 8260/5035 - Westborough Lab</b>						
1,3-Dichlorobenzene	ND	ug/kg	2.8	--	1	
1,4-Dichlorobenzene	ND	ug/kg	2.8	--	1	
Methyl tert butyl ether	ND	ug/kg	1.4	--	1	
p/m-Xylene	ND	ug/kg	1.4	--	1	
o-Xylene	3.9	ug/kg	1.4	--	1	
Xylenes, Total	3.9	ug/kg	1.4	--	1	
cis-1,2-Dichloroethene	ND	ug/kg	0.71	--	1	
1,2-Dichloroethene, Total	ND	ug/kg	0.71	--	1	
Dibromomethane	ND	ug/kg	2.8	--	1	
1,2,3-Trichloropropane	ND	ug/kg	2.8	--	1	
Styrene	ND	ug/kg	1.4	--	1	
Dichlorodifluoromethane	ND	ug/kg	7.1	--	1	
Acetone	82	ug/kg	26	--	1	
Carbon disulfide	ND	ug/kg	2.8	--	1	
Methyl ethyl ketone	12	ug/kg	7.1	--	1	
Methyl isobutyl ketone	ND	ug/kg	7.1	--	1	
2-Hexanone	ND	ug/kg	7.1	--	1	
Bromochloromethane	ND	ug/kg	2.8	--	1	
Tetrahydrofuran	ND	ug/kg	2.8	--	1	
2,2-Dichloropropane	ND	ug/kg	3.6	--	1	
1,2-Dibromoethane	ND	ug/kg	2.8	--	1	
1,3-Dichloropropane	ND	ug/kg	2.8	--	1	
1,1,1,2-Tetrachloroethane	ND	ug/kg	0.71	--	1	
Bromobenzene	ND	ug/kg	3.6	--	1	
n-Butylbenzene	ND	ug/kg	0.71	--	1	
sec-Butylbenzene	ND	ug/kg	0.71	--	1	
tert-Butylbenzene	ND	ug/kg	2.8	--	1	
o-Chlorotoluene	ND	ug/kg	2.8	--	1	
p-Chlorotoluene	ND	ug/kg	2.8	--	1	
1,2-Dibromo-3-chloropropane	ND	ug/kg	2.8	--	1	
Hexachlorobutadiene	ND	ug/kg	2.8	--	1	
Isopropylbenzene	0.81	ug/kg	0.71	--	1	
p-Isopropyltoluene	1.1	ug/kg	0.71	--	1	
Naphthalene	5.0	ug/kg	2.8	--	1	
n-Propylbenzene	ND	ug/kg	0.71	--	1	
1,2,3-Trichlorobenzene	ND	ug/kg	2.8	--	1	
1,2,4-Trichlorobenzene	ND	ug/kg	2.8	--	1	
1,3,5-Trimethylbenzene	7.4	ug/kg	2.8	--	1	
1,2,4-Trimethylbenzene	6.7	ug/kg	2.8	--	1	

Project Name: E. BOSTON

Lab Number: L1704984

Project Number: 43068

Report Date: 02/21/17

**SAMPLE RESULTS**

Lab ID: L1704984-10  
 Client ID: VES-107 (2-4)  
 Sample Location: E. BOSTON

Date Collected: 02/16/17 08:20  
 Date Received: 02/16/17  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics by 8260/5035 - Westborough Lab						
Diethyl ether	ND	ug/kg	3.6	--	--	1
Diisopropyl Ether	ND	ug/kg	2.8	--	--	1
Ethyl-Tert-Butyl-Ether	ND	ug/kg	2.8	--	--	1
Tertiary-Amyl Methyl Ether	ND	ug/kg	2.8	--	--	1
1,4-Dioxane	ND	ug/kg	28	--	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	126		70-130
Toluene-d8	98		70-130
4-Bromofluorobenzene	125		70-130
Dibromofluoromethane	121		70-130

**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704984  
**Report Date:** 02/21/17

**SAMPLE RESULTS**

Lab ID: L1704984-11  
Client ID: VES-105 (4-6)  
Sample Location: E. BOSTON  
Matrix: Soil  
Analytical Method: 97,8260C  
Analytical Date: 02/17/17 19:23  
Analyst: PK  
Percent Solids: 74%

Date Collected: 02/16/17 07:40  
Date Received: 02/16/17  
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics by 8260/5035 - Westborough Lab</b>						
Methylene chloride	ND	ug/kg	9.4	--	--	1
1,1-Dichloroethane	ND	ug/kg	1.4	--	--	1
Chloroform	ND	ug/kg	1.4	--	--	1
Carbon tetrachloride	ND	ug/kg	0.94	--	--	1
1,2-Dichloropropane	ND	ug/kg	3.3	--	--	1
Dibromochloromethane	ND	ug/kg	0.94	--	--	1
1,1,2-Trichloroethane	ND	ug/kg	1.4	--	--	1
Tetrachloroethene	ND	ug/kg	0.94	--	--	1
Chlorobenzene	ND	ug/kg	0.94	--	--	1
Trichlorofluoromethane	ND	ug/kg	3.7	--	--	1
1,2-Dichloroethane	ND	ug/kg	0.94	--	--	1
1,1,1-Trichloroethane	ND	ug/kg	0.94	--	--	1
Bromodichloromethane	ND	ug/kg	0.94	--	--	1
trans-1,3-Dichloropropene	ND	ug/kg	0.94	--	--	1
cis-1,3-Dichloropropene	ND	ug/kg	0.94	--	--	1
1,3-Dichloropropene, Total	ND	ug/kg	0.94	--	--	1
1,1-Dichloropropene	ND	ug/kg	3.7	--	--	1
Bromoform	ND	ug/kg	3.7	--	--	1
1,1,2,2-Tetrachloroethane	ND	ug/kg	0.94	--	--	1
Benzene	ND	ug/kg	0.94	--	--	1
Toluene	ND	ug/kg	1.4	--	--	1
Ethylbenzene	ND	ug/kg	0.94	--	--	1
Chloromethane	ND	ug/kg	3.7	--	--	1
Bromomethane	ND	ug/kg	1.9	--	--	1
Vinyl chloride	ND	ug/kg	1.9	--	--	1
Chloroethane	ND	ug/kg	1.9	--	--	1
1,1-Dichloroethene	ND	ug/kg	0.94	--	--	1
trans-1,2-Dichloroethene	ND	ug/kg	1.4	--	--	1
Trichloroethene	ND	ug/kg	0.94	--	--	1
1,2-Dichlorobenzene	ND	ug/kg	3.7	--	--	1



**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704984  
**Report Date:** 02/21/17

**SAMPLE RESULTS**

Lab ID:	L1704984-11	Date Collected:	02/16/17 07:40		
Client ID:	VES-105 (4-6)	Date Received:	02/16/17		
Sample Location:	E. BOSTON	Field Prep:	Not Specified		
Parameter	Result	Qualifier	Units	RL	MDL
<b>MCP Volatile Organics by 8260/5035 - Westborough Lab</b>					
1,3-Dichlorobenzene	ND	ug/kg	3.7	--	1
1,4-Dichlorobenzene	ND	ug/kg	3.7	--	1
Methyl tert butyl ether	ND	ug/kg	1.9	--	1
p/m-Xylene	ND	ug/kg	1.9	--	1
o-Xylene	ND	ug/kg	1.9	--	1
Xylenes, Total	ND	ug/kg	1.9	--	1
cis-1,2-Dichloroethene	ND	ug/kg	0.94	--	1
1,2-Dichloroethene, Total	ND	ug/kg	0.94	--	1
Dibromomethane	ND	ug/kg	3.7	--	1
1,2,3-Trichloropropane	ND	ug/kg	3.7	--	1
Styrene	ND	ug/kg	1.9	--	1
Dichlorodifluoromethane	ND	ug/kg	9.4	--	1
Acetone	ND	ug/kg	34	--	1
Carbon disulfide	ND	ug/kg	3.7	--	1
Methyl ethyl ketone	ND	ug/kg	9.4	--	1
Methyl isobutyl ketone	ND	ug/kg	9.4	--	1
2-Hexanone	ND	ug/kg	9.4	--	1
Bromochloromethane	ND	ug/kg	3.7	--	1
Tetrahydrofuran	ND	ug/kg	3.7	--	1
2,2-Dichloropropane	ND	ug/kg	4.7	--	1
1,2-Dibromoethane	ND	ug/kg	3.7	--	1
1,3-Dichloropropane	ND	ug/kg	3.7	--	1
1,1,1,2-Tetrachloroethane	ND	ug/kg	0.94	--	1
Bromobenzene	ND	ug/kg	4.7	--	1
n-Butylbenzene	ND	ug/kg	0.94	--	1
sec-Butylbenzene	ND	ug/kg	0.94	--	1
tert-Butylbenzene	ND	ug/kg	3.7	--	1
o-Chlorotoluene	ND	ug/kg	3.7	--	1
p-Chlorotoluene	ND	ug/kg	3.7	--	1
1,2-Dibromo-3-chloropropane	ND	ug/kg	3.7	--	1
Hexachlorobutadiene	ND	ug/kg	3.7	--	1
Isopropylbenzene	ND	ug/kg	0.94	--	1
p-Isopropyltoluene	ND	ug/kg	0.94	--	1
Naphthalene	ND	ug/kg	3.7	--	1
n-Propylbenzene	ND	ug/kg	0.94	--	1
1,2,3-Trichlorobenzene	ND	ug/kg	3.7	--	1
1,2,4-Trichlorobenzene	ND	ug/kg	3.7	--	1
1,3,5-Trimethylbenzene	ND	ug/kg	3.7	--	1
1,2,4-Trimethylbenzene	ND	ug/kg	3.7	--	1



Project Name: E. BOSTON

Lab Number: L1704984

Project Number: 43068

Report Date: 02/21/17

**SAMPLE RESULTS**

Lab ID: L1704984-11  
 Client ID: VES-105 (4-6)  
 Sample Location: E. BOSTON

Date Collected: 02/16/17 07:40  
 Date Received: 02/16/17  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics by 8260/5035 - Westborough Lab						
Diethyl ether	ND	ug/kg	4.7	--	--	1
Diisopropyl Ether	ND	ug/kg	3.7	--	--	1
Ethyl-Tert-Butyl-Ether	ND	ug/kg	3.7	--	--	1
Tertiary-Amyl Methyl Ether	ND	ug/kg	3.7	--	--	1
1,4-Dioxane	ND	ug/kg	37	--	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	122		70-130
Toluene-d8	108		70-130
4-Bromofluorobenzene	96		70-130
Dibromofluoromethane	115		70-130

**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704984  
**Report Date:** 02/21/17

**SAMPLE RESULTS**

Lab ID: L1704984-12  
Client ID: VES-128 (1-2)  
Sample Location: E. BOSTON  
Matrix: Soil  
Analytical Method: 97,8260C  
Analytical Date: 02/17/17 19:49  
Analyst: PK  
Percent Solids: 89%

Date Collected: 02/16/17 12:00  
Date Received: 02/16/17  
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics by 8260/5035 - Westborough Lab</b>						
Methylene chloride	ND	ug/kg	10	--	--	1
1,1-Dichloroethane	ND	ug/kg	1.5	--	--	1
Chloroform	ND	ug/kg	1.5	--	--	1
Carbon tetrachloride	ND	ug/kg	1.0	--	--	1
1,2-Dichloropropane	ND	ug/kg	3.5	--	--	1
Dibromochloromethane	ND	ug/kg	1.0	--	--	1
1,1,2-Trichloroethane	ND	ug/kg	1.5	--	--	1
Tetrachloroethene	ND	ug/kg	1.0	--	--	1
Chlorobenzene	ND	ug/kg	1.0	--	--	1
Trichlorofluoromethane	ND	ug/kg	4.0	--	--	1
1,2-Dichloroethane	ND	ug/kg	1.0	--	--	1
1,1,1-Trichloroethane	ND	ug/kg	1.0	--	--	1
Bromodichloromethane	ND	ug/kg	1.0	--	--	1
trans-1,3-Dichloropropene	ND	ug/kg	1.0	--	--	1
cis-1,3-Dichloropropene	ND	ug/kg	1.0	--	--	1
1,3-Dichloropropene, Total	ND	ug/kg	1.0	--	--	1
1,1-Dichloropropene	ND	ug/kg	4.0	--	--	1
Bromoform	ND	ug/kg	4.0	--	--	1
1,1,2,2-Tetrachloroethane	ND	ug/kg	1.0	--	--	1
Benzene	ND	ug/kg	1.0	--	--	1
Toluene	ND	ug/kg	1.5	--	--	1
Ethylbenzene	ND	ug/kg	1.0	--	--	1
Chloromethane	ND	ug/kg	4.0	--	--	1
Bromomethane	ND	ug/kg	2.0	--	--	1
Vinyl chloride	ND	ug/kg	2.0	--	--	1
Chloroethane	ND	ug/kg	2.0	--	--	1
1,1-Dichloroethene	ND	ug/kg	1.0	--	--	1
trans-1,2-Dichloroethene	ND	ug/kg	1.5	--	--	1
Trichloroethene	ND	ug/kg	1.0	--	--	1
1,2-Dichlorobenzene	ND	ug/kg	4.0	--	--	1



**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704984  
**Report Date:** 02/21/17

**SAMPLE RESULTS**

Lab ID:	L1704984-12	Date Collected:	02/16/17 12:00			
Client ID:	VES-128 (1-2)	Date Received:	02/16/17			
Sample Location:	E. BOSTON	Field Prep:	Not Specified			
Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics by 8260/5035 - Westborough Lab</b>						
1,3-Dichlorobenzene	ND	ug/kg	4.0	--	1	
1,4-Dichlorobenzene	ND	ug/kg	4.0	--	1	
Methyl tert butyl ether	ND	ug/kg	2.0	--	1	
p/m-Xylene	ND	ug/kg	2.0	--	1	
o-Xylene	ND	ug/kg	2.0	--	1	
Xylenes, Total	ND	ug/kg	2.0	--	1	
cis-1,2-Dichloroethene	ND	ug/kg	1.0	--	1	
1,2-Dichloroethene, Total	ND	ug/kg	1.0	--	1	
Dibromomethane	ND	ug/kg	4.0	--	1	
1,2,3-Trichloropropane	ND	ug/kg	4.0	--	1	
Styrene	ND	ug/kg	2.0	--	1	
Dichlorodifluoromethane	ND	ug/kg	10	--	1	
Acetone	ND	ug/kg	36	--	1	
Carbon disulfide	ND	ug/kg	4.0	--	1	
Methyl ethyl ketone	ND	ug/kg	10	--	1	
Methyl isobutyl ketone	ND	ug/kg	10	--	1	
2-Hexanone	ND	ug/kg	10	--	1	
Bromochloromethane	ND	ug/kg	4.0	--	1	
Tetrahydrofuran	ND	ug/kg	4.0	--	1	
2,2-Dichloropropane	ND	ug/kg	5.0	--	1	
1,2-Dibromoethane	ND	ug/kg	4.0	--	1	
1,3-Dichloropropane	ND	ug/kg	4.0	--	1	
1,1,1,2-Tetrachloroethane	ND	ug/kg	1.0	--	1	
Bromobenzene	ND	ug/kg	5.0	--	1	
n-Butylbenzene	ND	ug/kg	1.0	--	1	
sec-Butylbenzene	ND	ug/kg	1.0	--	1	
tert-Butylbenzene	ND	ug/kg	4.0	--	1	
o-Chlorotoluene	ND	ug/kg	4.0	--	1	
p-Chlorotoluene	ND	ug/kg	4.0	--	1	
1,2-Dibromo-3-chloropropane	ND	ug/kg	4.0	--	1	
Hexachlorobutadiene	ND	ug/kg	4.0	--	1	
Isopropylbenzene	ND	ug/kg	1.0	--	1	
p-Isopropyltoluene	ND	ug/kg	1.0	--	1	
Naphthalene	ND	ug/kg	4.0	--	1	
n-Propylbenzene	ND	ug/kg	1.0	--	1	
1,2,3-Trichlorobenzene	ND	ug/kg	4.0	--	1	
1,2,4-Trichlorobenzene	ND	ug/kg	4.0	--	1	
1,3,5-Trimethylbenzene	ND	ug/kg	4.0	--	1	
1,2,4-Trimethylbenzene	ND	ug/kg	4.0	--	1	



Project Name: E. BOSTON

Lab Number: L1704984

Project Number: 43068

Report Date: 02/21/17

**SAMPLE RESULTS**

Lab ID: L1704984-12  
 Client ID: VES-128 (1-2)  
 Sample Location: E. BOSTON

Date Collected: 02/16/17 12:00  
 Date Received: 02/16/17  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics by 8260/5035 - Westborough Lab						
Diethyl ether	ND	ug/kg	5.0	--	--	1
Diisopropyl Ether	ND	ug/kg	4.0	--	--	1
Ethyl-Tert-Butyl-Ether	ND	ug/kg	4.0	--	--	1
Tertiary-Amyl Methyl Ether	ND	ug/kg	4.0	--	--	1
1,4-Dioxane	ND	ug/kg	40	--	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	121		70-130
Toluene-d8	104		70-130
4-Bromofluorobenzene	92		70-130
Dibromofluoromethane	115		70-130

**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704984  
**Report Date:** 02/21/17

### Method Blank Analysis Batch Quality Control

Analytical Method: 97,8260C  
Analytical Date: 02/17/17 10:44  
Analyst: JC

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics by 8260/5035 - Westborough Lab for sample(s): WG978923-5				02-05,07-08,10-12	Batch:
Methylene chloride	ND		ug/kg	10	--
1,1-Dichloroethane	ND		ug/kg	1.5	--
Chloroform	ND		ug/kg	1.5	--
Carbon tetrachloride	ND		ug/kg	1.0	--
1,2-Dichloropropane	ND		ug/kg	3.5	--
Dibromochloromethane	ND		ug/kg	1.0	--
1,1,2-Trichloroethane	ND		ug/kg	1.5	--
Tetrachloroethene	ND		ug/kg	1.0	--
Chlorobenzene	ND		ug/kg	1.0	--
Trichlorofluoromethane	ND		ug/kg	4.0	--
1,2-Dichloroethane	ND		ug/kg	1.0	--
1,1,1-Trichloroethane	ND		ug/kg	1.0	--
Bromodichloromethane	ND		ug/kg	1.0	--
trans-1,3-Dichloropropene	ND		ug/kg	1.0	--
cis-1,3-Dichloropropene	ND		ug/kg	1.0	--
1,3-Dichloropropene, Total	ND		ug/kg	1.0	--
1,1-Dichloropropene	ND		ug/kg	4.0	--
Bromoform	ND		ug/kg	4.0	--
1,1,2,2-Tetrachloroethane	ND		ug/kg	1.0	--
Benzene	ND		ug/kg	1.0	--
Toluene	ND		ug/kg	1.5	--
Ethylbenzene	ND		ug/kg	1.0	--
Chloromethane	ND		ug/kg	4.0	--
Bromomethane	ND		ug/kg	2.0	--
Vinyl chloride	ND		ug/kg	2.0	--
Chloroethane	ND		ug/kg	2.0	--
1,1-Dichloroethene	ND		ug/kg	1.0	--
trans-1,2-Dichloroethene	ND		ug/kg	1.5	--
Trichloroethene	ND		ug/kg	1.0	--



**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704984  
**Report Date:** 02/21/17

### Method Blank Analysis Batch Quality Control

Analytical Method: 97,8260C  
Analytical Date: 02/17/17 10:44  
Analyst: JC

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics by 8260/5035 - Westborough Lab for sample(s): WG978923-5				02-05,07-08,10-12	Batch:
1,2-Dichlorobenzene	ND		ug/kg	4.0	--
1,3-Dichlorobenzene	ND		ug/kg	4.0	--
1,4-Dichlorobenzene	ND		ug/kg	4.0	--
Methyl tert butyl ether	ND		ug/kg	2.0	--
p/m-Xylene	ND		ug/kg	2.0	--
o-Xylene	ND		ug/kg	2.0	--
Xylenes, Total	ND		ug/kg	2.0	--
cis-1,2-Dichloroethene	ND		ug/kg	1.0	--
1,2-Dichloroethene, Total	ND		ug/kg	1.0	--
Dibromomethane	ND		ug/kg	4.0	--
1,4-Dichlorobutane	ND		ug/kg	10	--
1,2,3-Trichloropropane	ND		ug/kg	4.0	--
Styrene	ND		ug/kg	2.0	--
Dichlorodifluoromethane	ND		ug/kg	10	--
Acetone	ND		ug/kg	36	--
Carbon disulfide	ND		ug/kg	4.0	--
Methyl ethyl ketone	ND		ug/kg	10	--
Methyl isobutyl ketone	ND		ug/kg	10	--
2-Hexanone	ND		ug/kg	10	--
Ethyl methacrylate	ND		ug/kg	10	--
Acrylonitrile	ND		ug/kg	4.0	--
Bromochloromethane	ND		ug/kg	4.0	--
Tetrahydrofuran	ND		ug/kg	4.0	--
2,2-Dichloropropane	ND		ug/kg	5.0	--
1,2-Dibromoethane	ND		ug/kg	4.0	--
1,3-Dichloropropane	ND		ug/kg	4.0	--
1,1,1,2-Tetrachloroethane	ND		ug/kg	1.0	--
Bromobenzene	ND		ug/kg	5.0	--
n-Butylbenzene	ND		ug/kg	1.0	--



**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704984  
**Report Date:** 02/21/17

### Method Blank Analysis Batch Quality Control

Analytical Method: 97,8260C  
Analytical Date: 02/17/17 10:44  
Analyst: JC

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics by 8260/5035 - Westborough Lab for sample(s): WG978923-5				02-05,07-08,10-12	Batch:
sec-Butylbenzene	ND		ug/kg	1.0	--
tert-Butylbenzene	ND		ug/kg	4.0	--
o-Chlorotoluene	ND		ug/kg	4.0	--
p-Chlorotoluene	ND		ug/kg	4.0	--
1,2-Dibromo-3-chloropropane	ND		ug/kg	4.0	--
Hexachlorobutadiene	ND		ug/kg	4.0	--
Isopropylbenzene	ND		ug/kg	1.0	--
p-Isopropyltoluene	ND		ug/kg	1.0	--
Naphthalene	ND		ug/kg	4.0	--
n-Propylbenzene	ND		ug/kg	1.0	--
1,2,3-Trichlorobenzene	ND		ug/kg	4.0	--
1,2,4-Trichlorobenzene	ND		ug/kg	4.0	--
1,3,5-Trimethylbenzene	ND		ug/kg	4.0	--
1,2,4-Trimethylbenzene	ND		ug/kg	4.0	--
trans-1,4-Dichloro-2-butene	ND		ug/kg	5.0	--
Diethyl ether	ND		ug/kg	5.0	--
Diisopropyl Ether	ND		ug/kg	4.0	--
Ethyl-Tert-Butyl-Ether	ND		ug/kg	4.0	--
Tertiary-Amyl Methyl Ether	ND		ug/kg	4.0	--
1,4-Dioxane	ND		ug/kg	40	--
2-Chloroethylvinyl ether	ND		ug/kg	20	--
Halothane	ND		ug/kg	40	--
Ethyl Acetate	ND		ug/kg	20	--
Freon-113	ND		ug/kg	20	--
Vinyl acetate	ND		ug/kg	10	--

**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704984  
**Report Date:** 02/21/17

**Method Blank Analysis**  
**Batch Quality Control**

Analytical Method: 97,8260C  
Analytical Date: 02/17/17 10:44  
Analyst: JC

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics by 8260/5035 - Westborough Lab for sample(s): 02-05,07-08,10-12 Batch: WG978923-5					

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	114		70-130
Toluene-d8	121		70-130
4-Bromofluorobenzene	96		70-130
Dibromofluoromethane	109		70-130

**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704984  
**Report Date:** 02/21/17

### Method Blank Analysis Batch Quality Control

Analytical Method: 97,8260C  
Analytical Date: 02/20/17 09:18  
Analyst: BN

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics by 5035 High - Westborough Lab for sample(s):	03			Batch:	WG979473-5
Methylene chloride	ND		ug/kg	500	--
1,1-Dichloroethane	ND		ug/kg	75	--
Chloroform	ND		ug/kg	75	--
Carbon tetrachloride	ND		ug/kg	50	--
1,2-Dichloropropane	ND		ug/kg	180	--
Dibromochloromethane	ND		ug/kg	50	--
1,1,2-Trichloroethane	ND		ug/kg	75	--
Tetrachloroethene	ND		ug/kg	50	--
Chlorobenzene	ND		ug/kg	50	--
Trichlorofluoromethane	ND		ug/kg	200	--
1,2-Dichloroethane	ND		ug/kg	50	--
1,1,1-Trichloroethane	ND		ug/kg	50	--
Bromodichloromethane	ND		ug/kg	50	--
trans-1,3-Dichloropropene	ND		ug/kg	50	--
cis-1,3-Dichloropropene	ND		ug/kg	50	--
1,3-Dichloropropene, Total	ND		ug/kg	50	--
1,1-Dichloropropene	ND		ug/kg	200	--
Bromoform	ND		ug/kg	200	--
1,1,2,2-Tetrachloroethane	ND		ug/kg	50	--
Benzene	ND		ug/kg	50	--
Toluene	ND		ug/kg	75	--
Ethylbenzene	ND		ug/kg	50	--
Chloromethane	ND		ug/kg	200	--
Bromomethane	ND		ug/kg	100	--
Vinyl chloride	ND		ug/kg	100	--
Chloroethane	ND		ug/kg	100	--
1,1-Dichloroethene	ND		ug/kg	50	--
trans-1,2-Dichloroethene	ND		ug/kg	75	--
Trichloroethene	ND		ug/kg	50	--



**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704984  
**Report Date:** 02/21/17

### Method Blank Analysis Batch Quality Control

Analytical Method: 97,8260C  
Analytical Date: 02/20/17 09:18  
Analyst: BN

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics by 5035 High - Westborough Lab for sample(s):	03			Batch:	WG979473-5
1,2-Dichlorobenzene	ND		ug/kg	200	--
1,3-Dichlorobenzene	ND		ug/kg	200	--
1,4-Dichlorobenzene	ND		ug/kg	200	--
Methyl tert butyl ether	ND		ug/kg	100	--
p/m-Xylene	ND		ug/kg	100	--
o-Xylene	ND		ug/kg	100	--
Xylenes, Total	ND		ug/kg	100	--
cis-1,2-Dichloroethene	ND		ug/kg	50	--
1,2-Dichloroethene, Total	ND		ug/kg	50	--
Dibromomethane	ND		ug/kg	200	--
1,2,3-Trichloropropane	ND		ug/kg	200	--
Styrene	ND		ug/kg	100	--
Dichlorodifluoromethane	ND		ug/kg	500	--
Acetone	ND		ug/kg	1800	--
Carbon disulfide	ND		ug/kg	200	--
Methyl ethyl ketone	ND		ug/kg	500	--
Methyl isobutyl ketone	ND		ug/kg	500	--
2-Hexanone	ND		ug/kg	500	--
Bromochloromethane	ND		ug/kg	200	--
Tetrahydrofuran	ND		ug/kg	200	--
2,2-Dichloropropane	ND		ug/kg	250	--
1,2-Dibromoethane	ND		ug/kg	200	--
1,3-Dichloropropane	ND		ug/kg	200	--
1,1,1,2-Tetrachloroethane	ND		ug/kg	50	--
Bromobenzene	ND		ug/kg	250	--
n-Butylbenzene	ND		ug/kg	50	--
sec-Butylbenzene	ND		ug/kg	50	--
tert-Butylbenzene	ND		ug/kg	200	--
o-Chlorotoluene	ND		ug/kg	200	--



**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704984  
**Report Date:** 02/21/17

### Method Blank Analysis Batch Quality Control

Analytical Method: 97,8260C  
Analytical Date: 02/20/17 09:18  
Analyst: BN

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics by 5035 High - Westborough Lab for sample(s):	03			Batch:	WG979473-5
p-Chlorotoluene	ND		ug/kg	200	--
1,2-Dibromo-3-chloropropane	ND		ug/kg	200	--
Hexachlorobutadiene	ND		ug/kg	200	--
Isopropylbenzene	ND		ug/kg	50	--
p-Isopropyltoluene	ND		ug/kg	50	--
Naphthalene	ND		ug/kg	200	--
n-Propylbenzene	ND		ug/kg	50	--
1,2,3-Trichlorobenzene	ND		ug/kg	200	--
1,2,4-Trichlorobenzene	ND		ug/kg	200	--
1,3,5-Trimethylbenzene	ND		ug/kg	200	--
1,2,4-Trimethylbenzene	ND		ug/kg	200	--
Diethyl ether	ND		ug/kg	250	--
Diisopropyl Ether	ND		ug/kg	200	--
Ethyl-Tert-Butyl-Ether	ND		ug/kg	200	--
Tertiary-Amyl Methyl Ether	ND		ug/kg	200	--
1,4-Dioxane	ND		ug/kg	5000	--
2-Chloroethylvinyl ether	ND		ug/kg	1000	--
Halothane	ND		ug/kg	2000	--
Ethyl Acetate	ND		ug/kg	1000	--
Freon-113	ND		ug/kg	1000	--
Vinyl acetate	ND		ug/kg	500	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	107		70-130
Toluene-d8	106		70-130
4-Bromofluorobenzene	111		70-130
Dibromofluoromethane	100		70-130



# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704984  
**Report Date:** 02/21/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics by 8260/5035 - Westborough Lab Associated sample(s): 02-05,07-08,10-12 Batch: WG978923-3 WG978923-4								
Methylene chloride	113		119		70-130	5		20
1,1-Dichloroethane	112		108		70-130	4		20
Chloroform	114		110		70-130	4		20
Carbon tetrachloride	118		106		70-130	11		20
1,2-Dichloropropane	110		108		70-130	2		20
Dibromochloromethane	101		101		70-130	0		20
1,1,2-Trichloroethane	118		117		70-130	1		20
Tetrachloroethene	107		101		70-130	6		20
Chlorobenzene	108		103		70-130	5		20
Trichlorofluoromethane	128		100		70-130	25	Q	20
1,2-Dichloroethane	115		109		70-130	5		20
1,1,1-Trichloroethane	116		106		70-130	9		20
Bromodichloromethane	114		109		70-130	4		20
trans-1,3-Dichloropropene	98		97		70-130	1		20
cis-1,3-Dichloropropene	107		92		70-130	15		20
1,1-Dichloropropene	109		102		70-130	7		20
Bromoform	89		96		70-130	8		20
1,1,2,2-Tetrachloroethane	112		118		70-130	5		20
Benzene	112		107		70-130	5		20
Toluene	111		106		70-130	5		20
Ethylbenzene	111		105		70-130	6		20

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704984  
**Report Date:** 02/21/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics by 8260/5035 - Westborough Lab Associated sample(s): 02-05,07-08,10-12 Batch: WG978923-3 WG978923-4								
Chloromethane	113		89		70-130	24	Q	20
Bromomethane	110		91		70-130	19		20
Vinyl chloride	112		86		70-130	26	Q	20
Chloroethane	121		95		70-130	24	Q	20
1,1-Dichloroethene	100		94		70-130	6		20
trans-1,2-Dichloroethene	102		101		70-130	1		20
Trichloroethene	114		106		70-130	7		20
1,2-Dichlorobenzene	104		94		70-130	10		20
1,3-Dichlorobenzene	104		101		70-130	3		20
1,4-Dichlorobenzene	104		99		70-130	5		20
Methyl tert butyl ether	101		101		70-130	0		20
p/m-Xylene	114		107		70-130	6		20
o-Xylene	100		96		70-130	4		20
cis-1,2-Dichloroethene	106		103		70-130	3		20
Dibromomethane	112		108		70-130	4		20
1,4-Dichlorobutane	111		117		70-130	5		20
1,2,3-Trichloropropane	110		114		70-130	4		20
Styrene	99		97		70-130	2		20
Dichlorodifluoromethane	107		83		70-130	25	Q	20
Acetone	101		107		70-130	6		20
Carbon disulfide	130		152	Q	70-130	16		20

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704984  
**Report Date:** 02/21/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics by 8260/5035 - Westborough Lab Associated sample(s): 02-05,07-08,10-12 Batch: WG978923-3 WG978923-4								
Methyl ethyl ketone	86		88		70-130	2		20
Methyl isobutyl ketone	82		88		70-130	7		20
2-Hexanone	70		72		70-130	3		20
Ethyl methacrylate	75		75		70-130	0		20
Acrylonitrile	86		103		70-130	18		20
Bromochloromethane	111		107		70-130	4		20
Tetrahydrofuran	105		106		70-130	1		20
2,2-Dichloropropane	116		106		70-130	9		20
1,2-Dibromoethane	103		103		70-130	0		20
1,3-Dichloropropane	112		111		70-130	1		20
1,1,1,2-Tetrachloroethane	114		109		70-130	4		20
Bromobenzene	98		105		70-130	7		20
n-Butylbenzene	116		107		70-130	8		20
sec-Butylbenzene	109		104		70-130	5		20
tert-Butylbenzene	104		101		70-130	3		20
o-Chlorotoluene	110		111		70-130	1		20
p-Chlorotoluene	109		111		70-130	2		20
1,2-Dibromo-3-chloropropane	96		101		70-130	5		20
Hexachlorobutadiene	101		102		70-130	1		20
Isopropylbenzene	94		97		70-130	3		20
p-Isopropyltoluene	98		88		70-130	11		20

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704984  
**Report Date:** 02/21/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics by 8260/5035 - Westborough Lab Associated sample(s): 02-05,07-08,10-12 Batch: WG978923-3 WG978923-4								
Naphthalene	80		86		70-130	7		20
n-Propylbenzene	109		110		70-130	1		20
1,2,3-Trichlorobenzene	103		107		70-130	4		20
1,2,4-Trichlorobenzene	94		100		70-130	6		20
1,3,5-Trimethylbenzene	111		111		70-130	0		20
1,2,4-Trimethylbenzene	101		100		70-130	1		20
trans-1,4-Dichloro-2-butene	98		100		70-130	2		20
Diethyl ether	89		80		70-130	11		20
Diisopropyl Ether	100		102		70-130	2		20
Ethyl-Tert-Butyl-Ether	100		100		70-130	0		20
Tertiary-Amyl Methyl Ether	90		92		70-130	2		20
1,4-Dioxane	95		98		70-130	3		20
2-Chloroethylvinyl ether	84		82		70-130	2		20
Halothane	113		107		70-130	5		20
Ethyl Acetate	86		94		70-130	9		20
Freon-113	110		101		70-130	9		20
Vinyl acetate	92		93		70-130	1		20

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704984  
**Report Date:** 02/21/17

<b>Parameter</b>	<i>LCS</i> <i>%Recovery</i>	<i>Qual</i>	<i>LCSD</i> <i>%Recovery</i>	<i>Qual</i>	<i>%Recovery</i> <i>Limits</i>	<i>RPD</i>	<i>Qual</i>	<i>RPD</i> <i>Limits</i>
	MCP Volatile Organics by 8260/5035 - Westborough Lab Associated sample(s): 02-05,07-08,10-12 Batch: WG978923-3 WG978923-4							
<b>Surrogate</b>	<i>LCS</i> <i>%Recovery</i>	<i>Qual</i>	<i>LCSD</i> <i>%Recovery</i>	<i>Qual</i>	<i>Acceptance</i> <i>Criteria</i>			
1,2-Dichloroethane-d4	111		105		70-130			
Toluene-d8	107		107		70-130			
4-Bromofluorobenzene	98		109		70-130			
Dibromofluoromethane	108		106		70-130			

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704984  
**Report Date:** 02/21/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics by 5035 High - Westborough Lab Associated sample(s): 03 Batch: WG979473-3 WG979473-4								
Methylene chloride	127		111		70-130	13		20
1,1-Dichloroethane	102		97		70-130	5		20
Chloroform	99		96		70-130	3		20
Carbon tetrachloride	98		90		70-130	9		20
1,2-Dichloropropane	104		102		70-130	2		20
Dibromochloromethane	93		91		70-130	2		20
1,1,2-Trichloroethane	108		103		70-130	5		20
Tetrachloroethene	93		87		70-130	7		20
Chlorobenzene	100		95		70-130	5		20
Trichlorofluoromethane	83		73		70-130	13		20
1,2-Dichloroethane	98		98		70-130	0		20
1,1,1-Trichloroethane	99		93		70-130	6		20
Bromodichloromethane	100		98		70-130	2		20
trans-1,3-Dichloropropene	97		94		70-130	3		20
cis-1,3-Dichloropropene	90		91		70-130	1		20
1,1-Dichloropropene	101		92		70-130	9		20
Bromoform	84		82		70-130	2		20
1,1,2,2-Tetrachloroethane	102		100		70-130	2		20
Benzene	102		98		70-130	4		20
Toluene	105		96		70-130	9		20
Ethylbenzene	101		95		70-130	6		20

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704984  
**Report Date:** 02/21/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics by 5035 High - Westborough Lab Associated sample(s): 03 Batch: WG979473-3 WG979473-4								
Chloromethane	96		85		70-130	12		20
Bromomethane	82		75		70-130	9		20
Vinyl chloride	83		72		70-130	14		20
Chloroethane	87		80		70-130	8		20
1,1-Dichloroethene	92		84		70-130	9		20
trans-1,2-Dichloroethene	98		90		70-130	9		20
Trichloroethene	96		92		70-130	4		20
1,2-Dichlorobenzene	94		94		70-130	0		20
1,3-Dichlorobenzene	95		94		70-130	1		20
1,4-Dichlorobenzene	93		91		70-130	2		20
Methyl tert butyl ether	108		106		70-130	2		20
p/m-Xylene	102		96		70-130	6		20
o-Xylene	93		89		70-130	4		20
cis-1,2-Dichloroethene	100		96		70-130	4		20
Dibromomethane	97		100		70-130	3		20
1,2,3-Trichloropropane	102		100		70-130	2		20
Styrene	91		87		70-130	4		20
Dichlorodifluoromethane	77		66	Q	70-130	15		20
Acetone	130		122		70-130	6		20
Carbon disulfide	99		96		70-130	3		20
Methyl ethyl ketone	103		90		70-130	13		20

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704984  
**Report Date:** 02/21/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics by 5035 High - Westborough Lab Associated sample(s): 03 Batch: WG979473-3 WG979473-4								
Methyl isobutyl ketone	97		95		70-130	2		20
2-Hexanone	89		85		70-130	5		20
Bromochloromethane	98		98		70-130	0		20
Tetrahydrofuran	124		108		70-130	14		20
2,2-Dichloropropane	102		96		70-130	6		20
1,2-Dibromoethane	97		95		70-130	2		20
1,3-Dichloropropane	108		103		70-130	5		20
1,1,1,2-Tetrachloroethane	102		98		70-130	4		20
Bromobenzene	95		92		70-130	3		20
n-Butylbenzene	101		95		70-130	6		20
sec-Butylbenzene	99		93		70-130	6		20
tert-Butylbenzene	99		94		70-130	5		20
o-Chlorotoluene	100		96		70-130	4		20
p-Chlorotoluene	102		98		70-130	4		20
1,2-Dibromo-3-chloropropane	90		90		70-130	0		20
Hexachlorobutadiene	93		87		70-130	7		20
Isopropylbenzene	92		86		70-130	7		20
p-Isopropyltoluene	91		87		70-130	4		20
Naphthalene	82		82		70-130	0		20
n-Propylbenzene	100		93		70-130	7		20
1,2,3-Trichlorobenzene	96		97		70-130	1		20

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704984  
**Report Date:** 02/21/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics by 5035 High - Westborough Lab Associated sample(s): 03 Batch: WG979473-3 WG979473-4								
1,2,4-Trichlorobenzene	94		93		70-130	1		20
1,3,5-Trimethylbenzene	101		96		70-130	5		20
1,2,4-Trimethylbenzene	95		91		70-130	4		20
Diethyl ether	90		87		70-130	3		20
Diisopropyl Ether	108		105		70-130	3		20
Ethyl-Tert-Butyl-Ether	108		105		70-130	3		20
Tertiary-Amyl Methyl Ether	97		96		70-130	1		20
1,4-Dioxane	104		104		70-130	0		20
2-Chloroethylvinyl ether	86		91		70-130	6		20
Halothane	96		86		70-130	11		20
Ethyl Acetate	97		94		70-130	3		20
Freon-113	90		80		70-130	12		20
Vinyl acetate	94		93		70-130	1		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	98		99		70-130
Toluene-d8	110		107		70-130
4-Bromofluorobenzene	108		109		70-130
Dibromofluoromethane	100		100		70-130

# **SEMIVOLATILES**



**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704984  
**Report Date:** 02/21/17

**SAMPLE RESULTS**

Lab ID: L1704984-02  
Client ID: VES-131 (3-5)  
Sample Location: E. BOSTON  
Matrix: Soil  
Analytical Method: 97,8270D  
Analytical Date: 02/18/17 07:58  
Analyst: KV  
Percent Solids: 88%

Date Collected: 02/16/17 13:15  
Date Received: 02/16/17  
Field Prep: Not Specified  
Extraction Method: EPA 3546  
Extraction Date: 02/17/17 01:27

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Semivolatile Organics - Westborough Lab</b>						
Acenaphthene	ND	ug/kg	150	--	--	1
1,2,4-Trichlorobenzene	ND	ug/kg	180	--	--	1
Hexachlorobenzene	ND	ug/kg	110	--	--	1
Bis(2-chloroethyl)ether	ND	ug/kg	170	--	--	1
2-Chloronaphthalene	ND	ug/kg	180	--	--	1
1,2-Dichlorobenzene	ND	ug/kg	180	--	--	1
1,3-Dichlorobenzene	ND	ug/kg	180	--	--	1
1,4-Dichlorobenzene	ND	ug/kg	180	--	--	1
3,3'-Dichlorobenzidine	ND	ug/kg	180	--	--	1
2,4-Dinitrotoluene	ND	ug/kg	180	--	--	1
2,6-Dinitrotoluene	ND	ug/kg	180	--	--	1
Azobenzene	ND	ug/kg	180	--	--	1
Fluoranthene	130	ug/kg	110	--	--	1
4-Bromophenyl phenyl ether	ND	ug/kg	180	--	--	1
Bis(2-chloroisopropyl)ether	ND	ug/kg	220	--	--	1
Bis(2-chloroethoxy)methane	ND	ug/kg	200	--	--	1
Hexachlorobutadiene	ND	ug/kg	180	--	--	1
Hexachloroethane	ND	ug/kg	150	--	--	1
Isophorone	ND	ug/kg	170	--	--	1
Naphthalene	ND	ug/kg	180	--	--	1
Nitrobenzene	ND	ug/kg	170	--	--	1
Bis(2-ethylhexyl)phthalate	ND	ug/kg	180	--	--	1
Butyl benzyl phthalate	ND	ug/kg	180	--	--	1
Di-n-butylphthalate	ND	ug/kg	180	--	--	1
Di-n-octylphthalate	ND	ug/kg	180	--	--	1
Diethyl phthalate	ND	ug/kg	180	--	--	1
Dimethyl phthalate	ND	ug/kg	180	--	--	1
Benzo(a)anthracene	ND	ug/kg	110	--	--	1
Benzo(a)pyrene	ND	ug/kg	150	--	--	1
Benzo(b)fluoranthene	120	ug/kg	110	--	--	1



**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704984  
**Report Date:** 02/21/17

**SAMPLE RESULTS**

Lab ID:	L1704984-02	Date Collected:	02/16/17 13:15			
Client ID:	VES-131 (3-5)	Date Received:	02/16/17			
Sample Location:	E. BOSTON	Field Prep:	Not Specified			
Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Semivolatile Organics - Westborough Lab</b>						
Benzo(k)fluoranthene	ND	ug/kg	110	--	--	1
Chrysene	ND	ug/kg	110	--	--	1
Acenaphthylene	ND	ug/kg	150	--	--	1
Anthracene	ND	ug/kg	110	--	--	1
Benzo(ghi)perylene	ND	ug/kg	150	--	--	1
Fluorene	ND	ug/kg	180	--	--	1
Phenanthrene	ND	ug/kg	110	--	--	1
Dibenzo(a,h)anthracene	ND	ug/kg	110	--	--	1
Indeno(1,2,3-cd)pyrene	ND	ug/kg	150	--	--	1
Pyrene	160	ug/kg	110	--	--	1
Aniline	ND	ug/kg	220	--	--	1
4-Chloroaniline	ND	ug/kg	180	--	--	1
Dibenzofuran	ND	ug/kg	180	--	--	1
2-Methylnaphthalene	ND	ug/kg	220	--	--	1
Acetophenone	ND	ug/kg	180	--	--	1
2,4,6-Trichlorophenol	ND	ug/kg	110	--	--	1
2-Chlorophenol	ND	ug/kg	180	--	--	1
2,4-Dichlorophenol	ND	ug/kg	170	--	--	1
2,4-Dimethylphenol	ND	ug/kg	180	--	--	1
2-Nitrophenol	ND	ug/kg	400	--	--	1
4-Nitrophenol	ND	ug/kg	260	--	--	1
2,4-Dinitrophenol	ND	ug/kg	890	--	--	1
Pentachlorophenol	ND	ug/kg	370	--	--	1
Phenol	ND	ug/kg	180	--	--	1
2-Methylphenol	ND	ug/kg	180	--	--	1
3-Methylphenol/4-Methylphenol	ND	ug/kg	270	--	--	1
2,4,5-Trichlorophenol	ND	ug/kg	180	--	--	1
Pyridine	ND	ug/kg	200	--	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	85		30-130
Phenol-d6	92		30-130
Nitrobenzene-d5	92		30-130
2-Fluorobiphenyl	76		30-130
2,4,6-Tribromophenol	97		30-130
4-Terphenyl-d14	76		30-130

**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704984  
**Report Date:** 02/21/17

**SAMPLE RESULTS**

Lab ID: L1704984-03  
Client ID: VES-130 (2-4)  
Sample Location: E. BOSTON  
Matrix: Soil  
Analytical Method: 97,8270D  
Analytical Date: 02/18/17 20:31  
Analyst: RC  
Percent Solids: 75%

Date Collected: 02/16/17 11:50  
Date Received: 02/16/17  
Field Prep: Not Specified  
Extraction Method: EPA 3546  
Extraction Date: 02/17/17 01:27

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Semivolatile Organics - Westborough Lab</b>						
Acenaphthene	ND	ug/kg	180	--	--	1
1,2,4-Trichlorobenzene	ND	ug/kg	220	--	--	1
Hexachlorobenzene	ND	ug/kg	130	--	--	1
Bis(2-chloroethyl)ether	ND	ug/kg	200	--	--	1
2-Chloronaphthalene	ND	ug/kg	220	--	--	1
1,2-Dichlorobenzene	ND	ug/kg	220	--	--	1
1,3-Dichlorobenzene	ND	ug/kg	220	--	--	1
1,4-Dichlorobenzene	ND	ug/kg	220	--	--	1
3,3'-Dichlorobenzidine	ND	ug/kg	220	--	--	1
2,4-Dinitrotoluene	ND	ug/kg	220	--	--	1
2,6-Dinitrotoluene	ND	ug/kg	220	--	--	1
Azobenzene	ND	ug/kg	220	--	--	1
Fluoranthene	2600	ug/kg	130	--	--	1
4-Bromophenyl phenyl ether	ND	ug/kg	220	--	--	1
Bis(2-chloroisopropyl)ether	ND	ug/kg	270	--	--	1
Bis(2-chloroethoxy)methane	ND	ug/kg	240	--	--	1
Hexachlorobutadiene	ND	ug/kg	220	--	--	1
Hexachloroethane	ND	ug/kg	180	--	--	1
Isophorone	ND	ug/kg	200	--	--	1
Naphthalene	ND	ug/kg	220	--	--	1
Nitrobenzene	ND	ug/kg	200	--	--	1
Bis(2-ethylhexyl)phthalate	ND	ug/kg	220	--	--	1
Butyl benzyl phthalate	ND	ug/kg	220	--	--	1
Di-n-butylphthalate	ND	ug/kg	220	--	--	1
Di-n-octylphthalate	ND	ug/kg	220	--	--	1
Diethyl phthalate	ND	ug/kg	220	--	--	1
Dimethyl phthalate	ND	ug/kg	220	--	--	1
Benzo(a)anthracene	1400	ug/kg	130	--	--	1
Benzo(a)pyrene	1200	ug/kg	180	--	--	1
Benzo(b)fluoranthene	1400	ug/kg	130	--	--	1



Project Name: E. BOSTON

Lab Number: L1704984

Project Number: 43068

Report Date: 02/21/17

**SAMPLE RESULTS**

Lab ID:	L1704984-03	Date Collected:	02/16/17 11:50
Client ID:	VES-130 (2-4)	Date Received:	02/16/17
Sample Location:	E. BOSTON	Field Prep:	Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Semivolatile Organics - Westborough Lab</b>						
Benzo(k)fluoranthene	480	ug/kg	130	--	--	1
Chrysene	1400	ug/kg	130	--	--	1
Acenaphthylene	ND	ug/kg	180	--	--	1
Anthracene	490	ug/kg	130	--	--	1
Benzo(ghi)perylene	800	ug/kg	180	--	--	1
Fluorene	ND	ug/kg	220	--	--	1
Phenanthrene	2000	ug/kg	130	--	--	1
Dibenzo(a,h)anthracene	190	ug/kg	130	--	--	1
Indeno(1,2,3-cd)pyrene	800	ug/kg	180	--	--	1
Pyrene	2400	ug/kg	130	--	--	1
Aniline	ND	ug/kg	270	--	--	1
4-Chloroaniline	ND	ug/kg	220	--	--	1
Dibenzofuran	ND	ug/kg	220	--	--	1
2-Methylnaphthalene	ND	ug/kg	270	--	--	1
Acetophenone	ND	ug/kg	220	--	--	1
2,4,6-Trichlorophenol	ND	ug/kg	130	--	--	1
2-Chlorophenol	ND	ug/kg	220	--	--	1
2,4-Dichlorophenol	ND	ug/kg	200	--	--	1
2,4-Dimethylphenol	ND	ug/kg	220	--	--	1
2-Nitrophenol	ND	ug/kg	480	--	--	1
4-Nitrophenol	ND	ug/kg	310	--	--	1
2,4-Dinitrophenol	ND	ug/kg	1100	--	--	1
Pentachlorophenol	ND	ug/kg	440	--	--	1
Phenol	ND	ug/kg	220	--	--	1
2-Methylphenol	ND	ug/kg	220	--	--	1
3-Methylphenol/4-Methylphenol	ND	ug/kg	320	--	--	1
2,4,5-Trichlorophenol	ND	ug/kg	220	--	--	1
Pyridine	ND	ug/kg	240	--	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	62		30-130
Phenol-d6	66		30-130
Nitrobenzene-d5	72		30-130
2-Fluorobiphenyl	57		30-130
2,4,6-Tribromophenol	73		30-130
4-Terphenyl-d14	61		30-130

**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704984  
**Report Date:** 02/21/17

**SAMPLE RESULTS**

Lab ID: L1704984-04  
Client ID: VES-130 (8-10)  
Sample Location: E. BOSTON  
Matrix: Soil  
Analytical Method: 97,8270D  
Analytical Date: 02/18/17 20:56  
Analyst: RC  
Percent Solids: 68%

Date Collected: 02/16/17 11:55  
Date Received: 02/16/17  
Field Prep: Not Specified  
Extraction Method: EPA 3546  
Extraction Date: 02/17/17 01:27

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Semivolatile Organics - Westborough Lab</b>						
Acenaphthene	ND	ug/kg	190	--	--	1
1,2,4-Trichlorobenzene	ND	ug/kg	240	--	--	1
Hexachlorobenzene	ND	ug/kg	140	--	--	1
Bis(2-chloroethyl)ether	ND	ug/kg	220	--	--	1
2-Chloronaphthalene	ND	ug/kg	240	--	--	1
1,2-Dichlorobenzene	ND	ug/kg	240	--	--	1
1,3-Dichlorobenzene	ND	ug/kg	240	--	--	1
1,4-Dichlorobenzene	ND	ug/kg	240	--	--	1
3,3'-Dichlorobenzidine	ND	ug/kg	240	--	--	1
2,4-Dinitrotoluene	ND	ug/kg	240	--	--	1
2,6-Dinitrotoluene	ND	ug/kg	240	--	--	1
Azobenzene	ND	ug/kg	240	--	--	1
Fluoranthene	1300	ug/kg	140	--	--	1
4-Bromophenyl phenyl ether	ND	ug/kg	240	--	--	1
Bis(2-chloroisopropyl)ether	ND	ug/kg	290	--	--	1
Bis(2-chloroethoxy)methane	ND	ug/kg	260	--	--	1
Hexachlorobutadiene	ND	ug/kg	240	--	--	1
Hexachloroethane	ND	ug/kg	190	--	--	1
Isophorone	ND	ug/kg	220	--	--	1
Naphthalene	ND	ug/kg	240	--	--	1
Nitrobenzene	ND	ug/kg	220	--	--	1
Bis(2-ethylhexyl)phthalate	ND	ug/kg	240	--	--	1
Butyl benzyl phthalate	ND	ug/kg	240	--	--	1
Di-n-butylphthalate	ND	ug/kg	240	--	--	1
Di-n-octylphthalate	ND	ug/kg	240	--	--	1
Diethyl phthalate	ND	ug/kg	240	--	--	1
Dimethyl phthalate	ND	ug/kg	240	--	--	1
Benzo(a)anthracene	740	ug/kg	140	--	--	1
Benzo(a)pyrene	730	ug/kg	190	--	--	1
Benzo(b)fluoranthene	860	ug/kg	140	--	--	1



Project Name: E. BOSTON

Lab Number: L1704984

Project Number: 43068

Report Date: 02/21/17

**SAMPLE RESULTS**

Lab ID:	L1704984-04	Date Collected:	02/16/17 11:55
Client ID:	VES-130 (8-10)	Date Received:	02/16/17
Sample Location:	E. BOSTON	Field Prep:	Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Semivolatile Organics - Westborough Lab</b>						
Benzo(k)fluoranthene	280	ug/kg	140	--	--	1
Chrysene	700	ug/kg	140	--	--	1
Acenaphthylene	ND	ug/kg	190	--	--	1
Anthracene	180	ug/kg	140	--	--	1
Benzo(ghi)perylene	380	ug/kg	190	--	--	1
Fluorene	ND	ug/kg	240	--	--	1
Phenanthrene	700	ug/kg	140	--	--	1
Dibenzo(a,h)anthracene	ND	ug/kg	140	--	--	1
Indeno(1,2,3-cd)pyrene	400	ug/kg	190	--	--	1
Pyrene	1200	ug/kg	140	--	--	1
Aniline	ND	ug/kg	290	--	--	1
4-Chloroaniline	ND	ug/kg	240	--	--	1
Dibenzofuran	ND	ug/kg	240	--	--	1
2-Methylnaphthalene	ND	ug/kg	290	--	--	1
Acetophenone	ND	ug/kg	240	--	--	1
2,4,6-Trichlorophenol	ND	ug/kg	140	--	--	1
2-Chlorophenol	ND	ug/kg	240	--	--	1
2,4-Dichlorophenol	ND	ug/kg	220	--	--	1
2,4-Dimethylphenol	ND	ug/kg	240	--	--	1
2-Nitrophenol	ND	ug/kg	520	--	--	1
4-Nitrophenol	ND	ug/kg	330	--	--	1
2,4-Dinitrophenol	ND	ug/kg	1100	--	--	1
Pentachlorophenol	ND	ug/kg	480	--	--	1
Phenol	ND	ug/kg	240	--	--	1
2-Methylphenol	ND	ug/kg	240	--	--	1
3-Methylphenol/4-Methylphenol	ND	ug/kg	340	--	--	1
2,4,5-Trichlorophenol	ND	ug/kg	240	--	--	1
Pyridine	ND	ug/kg	260	--	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	76		30-130
Phenol-d6	70		30-130
Nitrobenzene-d5	73		30-130
2-Fluorobiphenyl	60		30-130
2,4,6-Tribromophenol	81		30-130
4-Terphenyl-d14	71		30-130

**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704984  
**Report Date:** 02/21/17

**SAMPLE RESULTS**

Lab ID: L1704984-05  
Client ID: VES-134 (2-4)  
Sample Location: E. BOSTON  
Matrix: Soil  
Analytical Method: 97,8270D  
Analytical Date: 02/18/17 21:22  
Analyst: RC  
Percent Solids: 74%

Date Collected: 02/16/17 11:00  
Date Received: 02/16/17  
Field Prep: Not Specified  
Extraction Method: EPA 3546  
Extraction Date: 02/17/17 01:27

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Semivolatile Organics - Westborough Lab</b>						
Acenaphthene	220		ug/kg	180	--	1
1,2,4-Trichlorobenzene	ND		ug/kg	220	--	1
Hexachlorobenzene	ND		ug/kg	140	--	1
Bis(2-chloroethyl)ether	ND		ug/kg	200	--	1
2-Chloronaphthalene	ND		ug/kg	220	--	1
1,2-Dichlorobenzene	ND		ug/kg	220	--	1
1,3-Dichlorobenzene	ND		ug/kg	220	--	1
1,4-Dichlorobenzene	ND		ug/kg	220	--	1
3,3'-Dichlorobenzidine	ND		ug/kg	220	--	1
2,4-Dinitrotoluene	ND		ug/kg	220	--	1
2,6-Dinitrotoluene	ND		ug/kg	220	--	1
Azobenzene	ND		ug/kg	220	--	1
Fluoranthene	22000	E	ug/kg	140	--	1
4-Bromophenyl phenyl ether	ND		ug/kg	220	--	1
Bis(2-chloroisopropyl)ether	ND		ug/kg	270	--	1
Bis(2-chloroethoxy)methane	ND		ug/kg	240	--	1
Hexachlorobutadiene	ND		ug/kg	220	--	1
Hexachloroethane	ND		ug/kg	180	--	1
Isophorone	ND		ug/kg	200	--	1
Naphthalene	420		ug/kg	220	--	1
Nitrobenzene	ND		ug/kg	200	--	1
Bis(2-ethylhexyl)phthalate	ND		ug/kg	220	--	1
Butyl benzyl phthalate	ND		ug/kg	220	--	1
Di-n-butylphthalate	ND		ug/kg	220	--	1
Di-n-octylphthalate	ND		ug/kg	220	--	1
Diethyl phthalate	ND		ug/kg	220	--	1
Dimethyl phthalate	ND		ug/kg	220	--	1
Benzo(a)anthracene	14000	E	ug/kg	140	--	1
Benzo(a)pyrene	11000	E	ug/kg	180	--	1
Benzo(b)fluoranthene	17000	E	ug/kg	140	--	1



Project Name: E. BOSTON

Lab Number: L1704984

Project Number: 43068

Report Date: 02/21/17

**SAMPLE RESULTS**

Lab ID:	L1704984-05	Date Collected:	02/16/17 11:00
Client ID:	VES-134 (2-4)	Date Received:	02/16/17
Sample Location:	E. BOSTON	Field Prep:	Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Semivolatile Organics - Westborough Lab</b>						
Benzo(k)fluoranthene	4900		ug/kg	140	--	1
Chrysene	13000	E	ug/kg	140	--	1
Acenaphthylene	800		ug/kg	180	--	1
Anthracene	2800		ug/kg	140	--	1
Benzo(ghi)perylene	6700		ug/kg	180	--	1
Fluorene	670		ug/kg	220	--	1
Phenanthrene	14000	E	ug/kg	140	--	1
Dibenzo(a,h)anthracene	2000		ug/kg	140	--	1
Indeno(1,2,3-cd)pyrene	7600		ug/kg	180	--	1
Pyrene	19000	E	ug/kg	140	--	1
Aniline	ND		ug/kg	270	--	1
4-Chloroaniline	ND		ug/kg	220	--	1
Dibenzofuran	ND		ug/kg	220	--	1
2-Methylnaphthalene	ND		ug/kg	270	--	1
Acetophenone	ND		ug/kg	220	--	1
2,4,6-Trichlorophenol	ND		ug/kg	140	--	1
2-Chlorophenol	ND		ug/kg	220	--	1
2,4-Dichlorophenol	ND		ug/kg	200	--	1
2,4-Dimethylphenol	ND		ug/kg	220	--	1
2-Nitrophenol	ND		ug/kg	490	--	1
4-Nitrophenol	ND		ug/kg	320	--	1
2,4-Dinitrophenol	ND		ug/kg	1100	--	1
Pentachlorophenol	ND		ug/kg	450	--	1
Phenol	ND		ug/kg	220	--	1
2-Methylphenol	ND		ug/kg	220	--	1
3-Methylphenol/4-Methylphenol	ND		ug/kg	320	--	1
2,4,5-Trichlorophenol	ND		ug/kg	220	--	1
Pyridine	ND		ug/kg	240	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	71		30-130
Phenol-d6	73		30-130
Nitrobenzene-d5	70		30-130
2-Fluorobiphenyl	63		30-130
2,4,6-Tribromophenol	61		30-130
4-Terphenyl-d14	61		30-130

**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704984  
**Report Date:** 02/21/17

**SAMPLE RESULTS**

Lab ID: L1704984-05 D  
Client ID: VES-134 (2-4)  
Sample Location: E. BOSTON  
Matrix: Soil  
Analytical Method: 97,8270D  
Analytical Date: 02/20/17 12:24  
Analyst: MW  
Percent Solids: 74%

Date Collected: 02/16/17 11:00  
Date Received: 02/16/17  
Field Prep: Not Specified  
Extraction Method: EPA 3546  
Extraction Date: 02/17/17 01:27

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Semivolatile Organics - Westborough Lab</b>						
Fluoranthene	28000		ug/kg	680	--	5
Benzo(a)anthracene	14000		ug/kg	680	--	5
Benzo(a)pyrene	12000		ug/kg	900	--	5
Benzo(b)fluoranthene	17000		ug/kg	680	--	5
Chrysene	14000		ug/kg	680	--	5
Phenanthrene	16000		ug/kg	680	--	5
Pyrene	21000		ug/kg	680	--	5

**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704984  
**Report Date:** 02/21/17

**SAMPLE RESULTS**

Lab ID: L1704984-07  
Client ID: VES-136 (3-5)  
Sample Location: E. BOSTON  
Matrix: Soil  
Analytical Method: 97,8270D  
Analytical Date: 02/18/17 21:47  
Analyst: RC  
Percent Solids: 77%

Date Collected: 02/16/17 09:20  
Date Received: 02/16/17  
Field Prep: Not Specified  
Extraction Method: EPA 3546  
Extraction Date: 02/17/17 01:27

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Semivolatile Organics - Westborough Lab</b>						
Acenaphthene	ND	ug/kg	170	--	--	1
1,2,4-Trichlorobenzene	ND	ug/kg	220	--	--	1
Hexachlorobenzene	ND	ug/kg	130	--	--	1
Bis(2-chloroethyl)ether	ND	ug/kg	190	--	--	1
2-Chloronaphthalene	ND	ug/kg	220	--	--	1
1,2-Dichlorobenzene	ND	ug/kg	220	--	--	1
1,3-Dichlorobenzene	ND	ug/kg	220	--	--	1
1,4-Dichlorobenzene	ND	ug/kg	220	--	--	1
3,3'-Dichlorobenzidine	ND	ug/kg	220	--	--	1
2,4-Dinitrotoluene	ND	ug/kg	220	--	--	1
2,6-Dinitrotoluene	ND	ug/kg	220	--	--	1
Azobenzene	ND	ug/kg	220	--	--	1
Fluoranthene	380	ug/kg	130	--	--	1
4-Bromophenyl phenyl ether	ND	ug/kg	220	--	--	1
Bis(2-chloroisopropyl)ether	ND	ug/kg	260	--	--	1
Bis(2-chloroethoxy)methane	ND	ug/kg	230	--	--	1
Hexachlorobutadiene	ND	ug/kg	220	--	--	1
Hexachloroethane	ND	ug/kg	170	--	--	1
Isophorone	ND	ug/kg	190	--	--	1
Naphthalene	ND	ug/kg	220	--	--	1
Nitrobenzene	ND	ug/kg	190	--	--	1
Bis(2-ethylhexyl)phthalate	ND	ug/kg	220	--	--	1
Butyl benzyl phthalate	ND	ug/kg	220	--	--	1
Di-n-butylphthalate	ND	ug/kg	220	--	--	1
Di-n-octylphthalate	ND	ug/kg	220	--	--	1
Diethyl phthalate	ND	ug/kg	220	--	--	1
Dimethyl phthalate	ND	ug/kg	220	--	--	1
Benzo(a)anthracene	210	ug/kg	130	--	--	1
Benzo(a)pyrene	180	ug/kg	170	--	--	1
Benzo(b)fluoranthene	220	ug/kg	130	--	--	1



Project Name: E. BOSTON

Lab Number: L1704984

Project Number: 43068

Report Date: 02/21/17

**SAMPLE RESULTS**

Lab ID:	L1704984-07	Date Collected:	02/16/17 09:20
Client ID:	VES-136 (3-5)	Date Received:	02/16/17
Sample Location:	E. BOSTON	Field Prep:	Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Semivolatile Organics - Westborough Lab</b>						
Benzo(k)fluoranthene	ND	ug/kg	130	--	--	1
Chrysene	200	ug/kg	130	--	--	1
Acenaphthylene	ND	ug/kg	170	--	--	1
Anthracene	ND	ug/kg	130	--	--	1
Benzo(ghi)perylene	ND	ug/kg	170	--	--	1
Fluorene	ND	ug/kg	220	--	--	1
Phenanthrene	270	ug/kg	130	--	--	1
Dibenzo(a,h)anthracene	ND	ug/kg	130	--	--	1
Indeno(1,2,3-cd)pyrene	ND	ug/kg	170	--	--	1
Pyrene	350	ug/kg	130	--	--	1
Aniline	ND	ug/kg	260	--	--	1
4-Chloroaniline	ND	ug/kg	220	--	--	1
Dibenzofuran	ND	ug/kg	220	--	--	1
2-Methylnaphthalene	ND	ug/kg	260	--	--	1
Acetophenone	ND	ug/kg	220	--	--	1
2,4,6-Trichlorophenol	ND	ug/kg	130	--	--	1
2-Chlorophenol	ND	ug/kg	220	--	--	1
2,4-Dichlorophenol	ND	ug/kg	190	--	--	1
2,4-Dimethylphenol	ND	ug/kg	220	--	--	1
2-Nitrophenol	ND	ug/kg	470	--	--	1
4-Nitrophenol	ND	ug/kg	300	--	--	1
2,4-Dinitrophenol	ND	ug/kg	1000	--	--	1
Pentachlorophenol	ND	ug/kg	430	--	--	1
Phenol	ND	ug/kg	220	--	--	1
2-Methylphenol	ND	ug/kg	220	--	--	1
3-Methylphenol/4-Methylphenol	ND	ug/kg	310	--	--	1
2,4,5-Trichlorophenol	ND	ug/kg	220	--	--	1
Pyridine	ND	ug/kg	230	--	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	78		30-130
Phenol-d6	71		30-130
Nitrobenzene-d5	78		30-130
2-Fluorobiphenyl	76		30-130
2,4,6-Tribromophenol	82		30-130
4-Terphenyl-d14	69		30-130

**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704984  
**Report Date:** 02/21/17

**SAMPLE RESULTS**

Lab ID: L1704984-08  
Client ID: VES-136 (10-12)  
Sample Location: E. BOSTON  
Matrix: Soil  
Analytical Method: 97,8270D  
Analytical Date: 02/18/17 20:05  
Analyst: RC  
Percent Solids: 78%

Date Collected: 02/16/17 09:25  
Date Received: 02/16/17  
Field Prep: Not Specified  
Extraction Method: EPA 3546  
Extraction Date: 02/17/17 01:27

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Semivolatile Organics - Westborough Lab</b>						
Acenaphthene	ND	ug/kg	170	--	--	1
1,2,4-Trichlorobenzene	ND	ug/kg	210	--	--	1
Hexachlorobenzene	ND	ug/kg	130	--	--	1
Bis(2-chloroethyl)ether	ND	ug/kg	190	--	--	1
2-Chloronaphthalene	ND	ug/kg	210	--	--	1
1,2-Dichlorobenzene	ND	ug/kg	210	--	--	1
1,3-Dichlorobenzene	ND	ug/kg	210	--	--	1
1,4-Dichlorobenzene	ND	ug/kg	210	--	--	1
3,3'-Dichlorobenzidine	ND	ug/kg	210	--	--	1
2,4-Dinitrotoluene	ND	ug/kg	210	--	--	1
2,6-Dinitrotoluene	ND	ug/kg	210	--	--	1
Azobenzene	ND	ug/kg	210	--	--	1
Fluoranthene	ND	ug/kg	130	--	--	1
4-Bromophenyl phenyl ether	ND	ug/kg	210	--	--	1
Bis(2-chloroisopropyl)ether	ND	ug/kg	250	--	--	1
Bis(2-chloroethoxy)methane	ND	ug/kg	230	--	--	1
Hexachlorobutadiene	ND	ug/kg	210	--	--	1
Hexachloroethane	ND	ug/kg	170	--	--	1
Isophorone	ND	ug/kg	190	--	--	1
Naphthalene	ND	ug/kg	210	--	--	1
Nitrobenzene	ND	ug/kg	190	--	--	1
Bis(2-ethylhexyl)phthalate	ND	ug/kg	210	--	--	1
Butyl benzyl phthalate	ND	ug/kg	210	--	--	1
Di-n-butylphthalate	ND	ug/kg	210	--	--	1
Di-n-octylphthalate	ND	ug/kg	210	--	--	1
Diethyl phthalate	ND	ug/kg	210	--	--	1
Dimethyl phthalate	ND	ug/kg	210	--	--	1
Benzo(a)anthracene	ND	ug/kg	130	--	--	1
Benzo(a)pyrene	ND	ug/kg	170	--	--	1
Benzo(b)fluoranthene	ND	ug/kg	130	--	--	1



Project Name: E. BOSTON

Lab Number: L1704984

Project Number: 43068

Report Date: 02/21/17

**SAMPLE RESULTS**

Lab ID:	L1704984-08	Date Collected:	02/16/17 09:25
Client ID:	VES-136 (10-12)	Date Received:	02/16/17
Sample Location:	E. BOSTON	Field Prep:	Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Semivolatile Organics - Westborough Lab</b>						
Benzo(k)fluoranthene	ND	ug/kg	130	--	--	1
Chrysene	ND	ug/kg	130	--	--	1
Acenaphthylene	ND	ug/kg	170	--	--	1
Anthracene	ND	ug/kg	130	--	--	1
Benzo(ghi)perylene	ND	ug/kg	170	--	--	1
Fluorene	ND	ug/kg	210	--	--	1
Phenanthrene	ND	ug/kg	130	--	--	1
Dibenzo(a,h)anthracene	ND	ug/kg	130	--	--	1
Indeno(1,2,3-cd)pyrene	ND	ug/kg	170	--	--	1
Pyrene	ND	ug/kg	130	--	--	1
Aniline	ND	ug/kg	250	--	--	1
4-Chloroaniline	ND	ug/kg	210	--	--	1
Dibenzofuran	ND	ug/kg	210	--	--	1
2-Methylnaphthalene	ND	ug/kg	250	--	--	1
Acetophenone	ND	ug/kg	210	--	--	1
2,4,6-Trichlorophenol	ND	ug/kg	130	--	--	1
2-Chlorophenol	ND	ug/kg	210	--	--	1
2,4-Dichlorophenol	ND	ug/kg	190	--	--	1
2,4-Dimethylphenol	ND	ug/kg	210	--	--	1
2-Nitrophenol	ND	ug/kg	450	--	--	1
4-Nitrophenol	ND	ug/kg	290	--	--	1
2,4-Dinitrophenol	ND	ug/kg	1000	--	--	1
Pentachlorophenol	ND	ug/kg	420	--	--	1
Phenol	ND	ug/kg	210	--	--	1
2-Methylphenol	ND	ug/kg	210	--	--	1
3-Methylphenol/4-Methylphenol	ND	ug/kg	300	--	--	1
2,4,5-Trichlorophenol	ND	ug/kg	210	--	--	1
Pyridine	ND	ug/kg	230	--	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	70		30-130
Phenol-d6	76		30-130
Nitrobenzene-d5	74		30-130
2-Fluorobiphenyl	72		30-130
2,4,6-Tribromophenol	57		30-130
4-Terphenyl-d14	79		30-130

**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704984  
**Report Date:** 02/21/17

**SAMPLE RESULTS**

Lab ID: L1704984-10  
Client ID: VES-107 (2-4)  
Sample Location: E. BOSTON  
Matrix: Soil  
Analytical Method: 97,8270D  
Analytical Date: 02/18/17 08:28  
Analyst: SZ  
Percent Solids: 87%

Date Collected: 02/16/17 08:20  
Date Received: 02/16/17  
Field Prep: Not Specified  
Extraction Method: EPA 3546  
Extraction Date: 02/17/17 01:27

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Semivolatile Organics - Westborough Lab</b>						
Acenaphthene	200	ug/kg	150	--	--	1
1,2,4-Trichlorobenzene	ND	ug/kg	190	--	--	1
Hexachlorobenzene	ND	ug/kg	110	--	--	1
Bis(2-chloroethyl)ether	ND	ug/kg	170	--	--	1
2-Chloronaphthalene	ND	ug/kg	190	--	--	1
1,2-Dichlorobenzene	ND	ug/kg	190	--	--	1
1,3-Dichlorobenzene	ND	ug/kg	190	--	--	1
1,4-Dichlorobenzene	ND	ug/kg	190	--	--	1
3,3'-Dichlorobenzidine	ND	ug/kg	190	--	--	1
2,4-Dinitrotoluene	ND	ug/kg	190	--	--	1
2,6-Dinitrotoluene	ND	ug/kg	190	--	--	1
Azobenzene	ND	ug/kg	190	--	--	1
Fluoranthene	2500	ug/kg	110	--	--	1
4-Bromophenyl phenyl ether	ND	ug/kg	190	--	--	1
Bis(2-chloroisopropyl)ether	ND	ug/kg	220	--	--	1
Bis(2-chloroethoxy)methane	ND	ug/kg	200	--	--	1
Hexachlorobutadiene	ND	ug/kg	190	--	--	1
Hexachloroethane	ND	ug/kg	150	--	--	1
Isophorone	ND	ug/kg	170	--	--	1
Naphthalene	ND	ug/kg	190	--	--	1
Nitrobenzene	ND	ug/kg	170	--	--	1
Bis(2-ethylhexyl)phthalate	ND	ug/kg	190	--	--	1
Butyl benzyl phthalate	ND	ug/kg	190	--	--	1
Di-n-butylphthalate	ND	ug/kg	190	--	--	1
Di-n-octylphthalate	ND	ug/kg	190	--	--	1
Diethyl phthalate	ND	ug/kg	190	--	--	1
Dimethyl phthalate	ND	ug/kg	190	--	--	1
Benzo(a)anthracene	910	ug/kg	110	--	--	1
Benzo(a)pyrene	760	ug/kg	150	--	--	1
Benzo(b)fluoranthene	970	ug/kg	110	--	--	1



Project Name: E. BOSTON

Lab Number: L1704984

Project Number: 43068

Report Date: 02/21/17

**SAMPLE RESULTS**

Lab ID:	L1704984-10	Date Collected:	02/16/17 08:20
Client ID:	VES-107 (2-4)	Date Received:	02/16/17
Sample Location:	E. BOSTON	Field Prep:	Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Semivolatile Organics - Westborough Lab</b>						
Benzo(k)fluoranthene	360	ug/kg	110	--	--	1
Chrysene	1000	ug/kg	110	--	--	1
Acenaphthylene	ND	ug/kg	150	--	--	1
Anthracene	240	ug/kg	110	--	--	1
Benzo(ghi)perylene	460	ug/kg	150	--	--	1
Fluorene	200	ug/kg	190	--	--	1
Phenanthrene	2200	ug/kg	110	--	--	1
Dibenzo(a,h)anthracene	120	ug/kg	110	--	--	1
Indeno(1,2,3-cd)pyrene	540	ug/kg	150	--	--	1
Pyrene	2100	ug/kg	110	--	--	1
Aniline	ND	ug/kg	220	--	--	1
4-Chloroaniline	ND	ug/kg	190	--	--	1
Dibenzofuran	ND	ug/kg	190	--	--	1
2-Methylnaphthalene	230	ug/kg	220	--	--	1
Acetophenone	ND	ug/kg	190	--	--	1
2,4,6-Trichlorophenol	ND	ug/kg	110	--	--	1
2-Chlorophenol	ND	ug/kg	190	--	--	1
2,4-Dichlorophenol	ND	ug/kg	170	--	--	1
2,4-Dimethylphenol	ND	ug/kg	190	--	--	1
2-Nitrophenol	ND	ug/kg	400	--	--	1
4-Nitrophenol	ND	ug/kg	260	--	--	1
2,4-Dinitrophenol	ND	ug/kg	900	--	--	1
Pentachlorophenol	ND	ug/kg	370	--	--	1
Phenol	ND	ug/kg	190	--	--	1
2-Methylphenol	ND	ug/kg	190	--	--	1
3-Methylphenol/4-Methylphenol	ND	ug/kg	270	--	--	1
2,4,5-Trichlorophenol	ND	ug/kg	190	--	--	1
Pyridine	ND	ug/kg	200	--	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	61		30-130
Phenol-d6	62		30-130
Nitrobenzene-d5	82		30-130
2-Fluorobiphenyl	65		30-130
2,4,6-Tribromophenol	64		30-130
4-Terphenyl-d14	67		30-130

**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704984  
**Report Date:** 02/21/17

**SAMPLE RESULTS**

Lab ID: L1704984-11 D  
Client ID: VES-105 (4-6)  
Sample Location: E. BOSTON  
Matrix: Soil  
Analytical Method: 97,8270D  
Analytical Date: 02/21/17 16:15  
Analyst: SZ  
Percent Solids: 74%

Date Collected: 02/16/17 07:40  
Date Received: 02/16/17  
Field Prep: Not Specified  
Extraction Method: EPA 3546  
Extraction Date: 02/17/17 01:27

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Semivolatile Organics - Westborough Lab</b>						
Acenaphthene	ND	ug/kg	1800	--	10	
1,2,4-Trichlorobenzene	ND	ug/kg	2200	--	10	
Hexachlorobenzene	ND	ug/kg	1300	--	10	
Bis(2-chloroethyl)ether	ND	ug/kg	2000	--	10	
2-Chloronaphthalene	ND	ug/kg	2200	--	10	
1,2-Dichlorobenzene	ND	ug/kg	2200	--	10	
1,3-Dichlorobenzene	ND	ug/kg	2200	--	10	
1,4-Dichlorobenzene	ND	ug/kg	2200	--	10	
3,3'-Dichlorobenzidine	ND	ug/kg	2200	--	10	
2,4-Dinitrotoluene	ND	ug/kg	2200	--	10	
2,6-Dinitrotoluene	ND	ug/kg	2200	--	10	
Azobenzene	ND	ug/kg	2200	--	10	
Fluoranthene	46000	ug/kg	1300	--	10	
4-Bromophenyl phenyl ether	ND	ug/kg	2200	--	10	
Bis(2-chloroisopropyl)ether	ND	ug/kg	2600	--	10	
Bis(2-chloroethoxy)methane	ND	ug/kg	2400	--	10	
Hexachlorobutadiene	ND	ug/kg	2200	--	10	
Hexachloroethane	ND	ug/kg	1800	--	10	
Isophorone	ND	ug/kg	2000	--	10	
Naphthalene	ND	ug/kg	2200	--	10	
Nitrobenzene	ND	ug/kg	2000	--	10	
Bis(2-ethylhexyl)phthalate	ND	ug/kg	2200	--	10	
Butyl benzyl phthalate	ND	ug/kg	2200	--	10	
Di-n-butylphthalate	ND	ug/kg	2200	--	10	
Di-n-octylphthalate	ND	ug/kg	2200	--	10	
Diethyl phthalate	ND	ug/kg	2200	--	10	
Dimethyl phthalate	ND	ug/kg	2200	--	10	
Benzo(a)anthracene	20000	ug/kg	1300	--	10	
Benzo(a)pyrene	18000	ug/kg	1800	--	10	
Benzo(b)fluoranthene	23000	ug/kg	1300	--	10	



Project Name: E. BOSTON

Lab Number: L1704984

Project Number: 43068

Report Date: 02/21/17

**SAMPLE RESULTS**

Lab ID: L1704984-11 D Date Collected: 02/16/17 07:40  
 Client ID: VES-105 (4-6) Date Received: 02/16/17  
 Sample Location: E. BOSTON Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Semivolatile Organics - Westborough Lab</b>						
Benzo(k)fluoranthene	7300	ug/kg	1300	--	10	
Chrysene	18000	ug/kg	1300	--	10	
Acenaphthylene	ND	ug/kg	1800	--	10	
Anthracene	11000	ug/kg	1300	--	10	
Benzo(ghi)perylene	11000	ug/kg	1800	--	10	
Fluorene	ND	ug/kg	2200	--	10	
Phenanthrene	37000	ug/kg	1300	--	10	
Dibenzo(a,h)anthracene	2600	ug/kg	1300	--	10	
Indeno(1,2,3-cd)pyrene	12000	ug/kg	1800	--	10	
Pyrene	37000	ug/kg	1300	--	10	
Aniline	ND	ug/kg	2600	--	10	
4-Chloroaniline	ND	ug/kg	2200	--	10	
Dibenzofuran	ND	ug/kg	2200	--	10	
2-Methylnaphthalene	ND	ug/kg	2600	--	10	
Acetophenone	ND	ug/kg	2200	--	10	
2,4,6-Trichlorophenol	ND	ug/kg	1300	--	10	
2-Chlorophenol	ND	ug/kg	2200	--	10	
2,4-Dichlorophenol	ND	ug/kg	2000	--	10	
2,4-Dimethylphenol	ND	ug/kg	2200	--	10	
2-Nitrophenol	ND	ug/kg	4800	--	10	
4-Nitrophenol	ND	ug/kg	3100	--	10	
2,4-Dinitrophenol	ND	ug/kg	10000	--	10	
Pentachlorophenol	ND	ug/kg	4400	--	10	
Phenol	ND	ug/kg	2200	--	10	
2-Methylphenol	ND	ug/kg	2200	--	10	
3-Methylphenol/4-Methylphenol	ND	ug/kg	3200	--	10	
2,4,5-Trichlorophenol	ND	ug/kg	2200	--	10	
Pyridine	ND	ug/kg	2400	--	10	

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	68		30-130
Phenol-d6	65		30-130
Nitrobenzene-d5	73		30-130
2-Fluorobiphenyl	80		30-130
2,4,6-Tribromophenol	74		30-130
4-Terphenyl-d14	79		30-130

**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704984  
**Report Date:** 02/21/17

**SAMPLE RESULTS**

Lab ID: L1704984-12  
Client ID: VES-128 (1-2)  
Sample Location: E. BOSTON  
Matrix: Soil  
Analytical Method: 97,8270D  
Analytical Date: 02/18/17 22:13  
Analyst: RC  
Percent Solids: 89%

Date Collected: 02/16/17 12:00  
Date Received: 02/16/17  
Field Prep: Not Specified  
Extraction Method: EPA 3546  
Extraction Date: 02/17/17 01:27

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Semivolatile Organics - Westborough Lab</b>						
Acenaphthene	ND	ug/kg	150	--	--	1
1,2,4-Trichlorobenzene	ND	ug/kg	180	--	--	1
Hexachlorobenzene	ND	ug/kg	110	--	--	1
Bis(2-chloroethyl)ether	ND	ug/kg	170	--	--	1
2-Chloronaphthalene	ND	ug/kg	180	--	--	1
1,2-Dichlorobenzene	ND	ug/kg	180	--	--	1
1,3-Dichlorobenzene	ND	ug/kg	180	--	--	1
1,4-Dichlorobenzene	ND	ug/kg	180	--	--	1
3,3'-Dichlorobenzidine	ND	ug/kg	180	--	--	1
2,4-Dinitrotoluene	ND	ug/kg	180	--	--	1
2,6-Dinitrotoluene	ND	ug/kg	180	--	--	1
Azobenzene	ND	ug/kg	180	--	--	1
Fluoranthene	5100	ug/kg	110	--	--	1
4-Bromophenyl phenyl ether	ND	ug/kg	180	--	--	1
Bis(2-chloroisopropyl)ether	ND	ug/kg	220	--	--	1
Bis(2-chloroethoxy)methane	ND	ug/kg	200	--	--	1
Hexachlorobutadiene	ND	ug/kg	180	--	--	1
Hexachloroethane	ND	ug/kg	150	--	--	1
Isophorone	ND	ug/kg	170	--	--	1
Naphthalene	190	ug/kg	180	--	--	1
Nitrobenzene	ND	ug/kg	170	--	--	1
Bis(2-ethylhexyl)phthalate	ND	ug/kg	180	--	--	1
Butyl benzyl phthalate	ND	ug/kg	180	--	--	1
Di-n-butylphthalate	ND	ug/kg	180	--	--	1
Di-n-octylphthalate	ND	ug/kg	180	--	--	1
Diethyl phthalate	ND	ug/kg	180	--	--	1
Dimethyl phthalate	ND	ug/kg	180	--	--	1
Benzo(a)anthracene	3300	ug/kg	110	--	--	1
Benzo(a)pyrene	3300	ug/kg	150	--	--	1
Benzo(b)fluoranthene	3700	ug/kg	110	--	--	1



**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704984  
**Report Date:** 02/21/17

**SAMPLE RESULTS**

Lab ID:	L1704984-12	Date Collected:	02/16/17 12:00			
Client ID:	VES-128 (1-2)	Date Received:	02/16/17			
Sample Location:	E. BOSTON	Field Prep:	Not Specified			
Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Semivolatile Organics - Westborough Lab</b>						
Benzo(k)fluoranthene	1400	ug/kg	110	--	1	
Chrysene	3100	ug/kg	110	--	1	
Acenaphthylene	150	ug/kg	150	--	1	
Anthracene	740	ug/kg	110	--	1	
Benzo(ghi)perylene	2100	ug/kg	150	--	1	
Fluorene	ND	ug/kg	180	--	1	
Phenanthrene	2300	ug/kg	110	--	1	
Dibenzo(a,h)anthracene	490	ug/kg	110	--	1	
Indeno(1,2,3-cd)pyrene	2200	ug/kg	150	--	1	
Pyrene	5200	ug/kg	110	--	1	
Aniline	ND	ug/kg	220	--	1	
4-Chloroaniline	ND	ug/kg	180	--	1	
Dibenzofuran	ND	ug/kg	180	--	1	
2-Methylnaphthalene	ND	ug/kg	220	--	1	
Acetophenone	ND	ug/kg	180	--	1	
2,4,6-Trichlorophenol	ND	ug/kg	110	--	1	
2-Chlorophenol	ND	ug/kg	180	--	1	
2,4-Dichlorophenol	ND	ug/kg	170	--	1	
2,4-Dimethylphenol	ND	ug/kg	180	--	1	
2-Nitrophenol	ND	ug/kg	400	--	1	
4-Nitrophenol	ND	ug/kg	260	--	1	
2,4-Dinitrophenol	ND	ug/kg	890	--	1	
Pentachlorophenol	ND	ug/kg	370	--	1	
Phenol	ND	ug/kg	180	--	1	
2-Methylphenol	ND	ug/kg	180	--	1	
3-Methylphenol/4-Methylphenol	ND	ug/kg	270	--	1	
2,4,5-Trichlorophenol	ND	ug/kg	180	--	1	
Pyridine	ND	ug/kg	200	--	1	

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	56		30-130
Phenol-d6	57		30-130
Nitrobenzene-d5	84		30-130
2-Fluorobiphenyl	63		30-130
2,4,6-Tribromophenol	76		30-130
4-Terphenyl-d14	66		30-130

**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704984  
**Report Date:** 02/21/17

### Method Blank Analysis Batch Quality Control

Analytical Method: 97,8270D  
Analytical Date: 02/17/17 23:16  
Analyst: KV

Extraction Method: EPA 3546  
Extraction Date: 02/17/17 01:27

Parameter	Result	Qualifier	Units	RL	MDL
MCP Semivolatile Organics - Westborough Lab for sample(s): 02-05,07-08,10-12 Batch: WG978622-1					
Acenaphthene	ND		ug/kg	130	--
1,2,4-Trichlorobenzene	ND		ug/kg	160	--
Hexachlorobenzene	ND		ug/kg	98	--
Bis(2-chloroethyl)ether	ND		ug/kg	150	--
2-Chloronaphthalene	ND		ug/kg	160	--
1,2-Dichlorobenzene	ND		ug/kg	160	--
1,3-Dichlorobenzene	ND		ug/kg	160	--
1,4-Dichlorobenzene	ND		ug/kg	160	--
3,3'-Dichlorobenzidine	ND		ug/kg	160	--
2,4-Dinitrotoluene	ND		ug/kg	160	--
2,6-Dinitrotoluene	ND		ug/kg	160	--
Azobenzene	ND		ug/kg	160	--
Fluoranthene	ND		ug/kg	98	--
4-Bromophenyl phenyl ether	ND		ug/kg	160	--
Bis(2-chloroisopropyl)ether	ND		ug/kg	200	--
Bis(2-chloroethoxy)methane	ND		ug/kg	180	--
Hexachlorobutadiene	ND		ug/kg	160	--
Hexachloroethane	ND		ug/kg	130	--
Isophorone	ND		ug/kg	150	--
Naphthalene	ND		ug/kg	160	--
Nitrobenzene	ND		ug/kg	150	--
Bis(2-ethylhexyl)phthalate	ND		ug/kg	160	--
Butyl benzyl phthalate	ND		ug/kg	160	--
Di-n-butylphthalate	ND		ug/kg	160	--
Di-n-octylphthalate	ND		ug/kg	160	--
Diethyl phthalate	ND		ug/kg	160	--
Dimethyl phthalate	ND		ug/kg	160	--
Benzo(a)anthracene	ND		ug/kg	98	--
Benzo(a)pyrene	ND		ug/kg	130	--



**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704984  
**Report Date:** 02/21/17

### Method Blank Analysis Batch Quality Control

Analytical Method: 97,8270D  
Analytical Date: 02/17/17 23:16  
Analyst: KV

Extraction Method: EPA 3546  
Extraction Date: 02/17/17 01:27

Parameter	Result	Qualifier	Units	RL	MDL
MCP Semivolatile Organics - Westborough Lab for sample(s): 02-05,07-08,10-12 Batch: WG978622-1					
Benzo(b)fluoranthene	ND		ug/kg	98	--
Benzo(k)fluoranthene	ND		ug/kg	98	--
Chrysene	ND		ug/kg	98	--
Acenaphthylene	ND		ug/kg	130	--
Anthracene	ND		ug/kg	98	--
Benzo(ghi)perylene	ND		ug/kg	130	--
Fluorene	ND		ug/kg	160	--
Phenanthrene	ND		ug/kg	98	--
Dibenzo(a,h)anthracene	ND		ug/kg	98	--
Indeno(1,2,3-cd)pyrene	ND		ug/kg	130	--
Pyrene	ND		ug/kg	98	--
Aniline	ND		ug/kg	200	--
4-Chloroaniline	ND		ug/kg	160	--
Dibenzofuran	ND		ug/kg	160	--
2-Methylnaphthalene	ND		ug/kg	200	--
Acetophenone	ND		ug/kg	160	--
2,4,6-Trichlorophenol	ND		ug/kg	98	--
2-Chlorophenol	ND		ug/kg	160	--
2,4-Dichlorophenol	ND		ug/kg	150	--
2,4-Dimethylphenol	ND		ug/kg	160	--
2-Nitrophenol	ND		ug/kg	350	--
4-Nitrophenol	ND		ug/kg	230	--
2,4-Dinitrophenol	ND		ug/kg	790	--
Pentachlorophenol	ND		ug/kg	330	--
Phenol	ND		ug/kg	160	--
2-Methylphenol	ND		ug/kg	160	--
3-Methylphenol/4-Methylphenol	ND		ug/kg	240	--
2,4,5-Trichlorophenol	ND		ug/kg	160	--
Pyridine	ND		ug/kg	180	--



**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704984  
**Report Date:** 02/21/17

### Method Blank Analysis Batch Quality Control

Analytical Method: 97,8270D  
Analytical Date: 02/17/17 23:16  
Analyst: KV

Extraction Method: EPA 3546  
Extraction Date: 02/17/17 01:27

Parameter	Result	Qualifier	Units	RL	MDL
MCP Semivolatile Organics - Westborough Lab for sample(s): 02-05,07-08,10-12 Batch: WG978622-1					

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	81		30-130
Phenol-d6	87		30-130
Nitrobenzene-d5	83		30-130
2-Fluorobiphenyl	73		30-130
2,4,6-Tribromophenol	81		30-130
4-Terphenyl-d14	78		30-130

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704984  
**Report Date:** 02/21/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Semivolatile Organics - Westborough Lab Associated sample(s): 02-05,07-08,10-12 Batch: WG978622-2 WG978622-3								
Acenaphthene	76		75		40-140	1		30
1,2,4-Trichlorobenzene	76		72		40-140	5		30
Hexachlorobenzene	79		80		40-140	1		30
Bis(2-chloroethyl)ether	85		81		40-140	5		30
2-Chloronaphthalene	79		77		40-140	3		30
1,2-Dichlorobenzene	76		72		40-140	5		30
1,3-Dichlorobenzene	75		72		40-140	4		30
1,4-Dichlorobenzene	75		71		40-140	5		30
3,3'-Dichlorobenzidine	56		51		40-140	9		30
2,4-Dinitrotoluene	89		90		40-140	1		30
2,6-Dinitrotoluene	91		90		40-140	1		30
Azobenzene	93		93		40-140	0		30
Fluoranthene	81		81		40-140	0		30
4-Bromophenyl phenyl ether	78		78		40-140	0		30
Bis(2-chloroisopropyl)ether	89		86		40-140	3		30
Bis(2-chloroethoxy)methane	90		87		40-140	3		30
Hexachlorobutadiene	73		70		40-140	4		30
Hexachloroethane	78		73		40-140	7		30
Isophorone	100		96		40-140	4		30
Naphthalene	79		76		40-140	4		30
Nitrobenzene	99		96		40-140	3		30

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704984  
**Report Date:** 02/21/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Semivolatile Organics - Westborough Lab Associated sample(s): 02-05,07-08,10-12 Batch: WG978622-2 WG978622-3								
Bis(2-ethylhexyl)phthalate	84		83		40-140	1		30
Butyl benzyl phthalate	90		91		40-140	1		30
Di-n-butylphthalate	93		93		40-140	0		30
Di-n-octylphthalate	89		89		40-140	0		30
Diethyl phthalate	87		86		40-140	1		30
Dimethyl phthalate	90		88		40-140	2		30
Benzo(a)anthracene	78		77		40-140	1		30
Benzo(a)pyrene	86		84		40-140	2		30
Benzo(b)fluoranthene	84		83		40-140	1		30
Benzo(k)fluoranthene	84		82		40-140	2		30
Chrysene	74		73		40-140	1		30
Acenaphthylene	90		87		40-140	3		30
Anthracene	78		79		40-140	1		30
Benzo(ghi)perylene	78		77		40-140	1		30
Fluorene	77		76		40-140	1		30
Phenanthrene	75		75		40-140	0		30
Dibenz(a,h)anthracene	78		78		40-140	0		30
Indeno(1,2,3-cd)pyrene	77		78		40-140	1		30
Pyrene	81		81		40-140	0		30
Aniline	47		38	Q	40-140	21		30
4-Chloroaniline	49		40		40-140	20		30

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704984  
**Report Date:** 02/21/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Semivolatile Organics - Westborough Lab Associated sample(s): 02-05,07-08,10-12 Batch: WG978622-2 WG978622-3								
Dibenzofuran	77		76		40-140	1		30
2-Methylnaphthalene	80		77		40-140	4		30
Acetophenone	98		94		40-140	4		30
2,4,6-Trichlorophenol	90		87		30-130	3		30
2-Chlorophenol	85		83		30-130	2		30
2,4-Dichlorophenol	88		86		30-130	2		30
2,4-Dimethylphenol	103		97		30-130	6		30
2-Nitrophenol	98		95		30-130	3		30
4-Nitrophenol	101		103		30-130	2		30
2,4-Dinitrophenol	55		62		30-130	12		30
Pentachlorophenol	71		74		30-130	4		30
Phenol	95		92		30-130	3		30
2-Methylphenol	92		88		30-130	4		30
3-Methylphenol/4-Methylphenol	94		91		30-130	3		30
2,4,5-Trichlorophenol	90		88		30-130	2		30
Pyridine	76		72		30-130	5		30

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704984  
**Report Date:** 02/21/17

<b>Parameter</b>	<i>LCS</i> <b>%Recovery</b>	<i>LCSD</i> <b>%Recovery</b>	<b>%Recovery</b> <b>Limits</b>		<i>RPD</i>	<i>Qual</i>	<i>RPD</i> <b>Limits</b>
	<b>Qual</b>	<b>Qual</b>	<b>Limits</b>	<b>Qual</b>	<b>Qual</b>	<b>Qual</b>	
MCP Semivolatile Organics - Westborough Lab Associated sample(s): 02-05,07-08,10-12 Batch: WG978622-2 WG978622-3							
<i>Surrogate</i>	<i>LCS</i> <b>%Recovery</b>	<i>LCSD</i> <b>%Recovery</b>	<b>Acceptance</b> <b>Criteria</b>				
2-Fluorophenol	86	83	30-130				
Phenol-d6	92	88	30-130				
Nitrobenzene-d5	88	85	30-130				
2-Fluorobiphenyl	75	73	30-130				
2,4,6-Tribromophenol	92	90	30-130				
4-Terphenyl-d14	77	77	30-130				

# PETROLEUM HYDROCARBONS



**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704984  
**Report Date:** 02/21/17

### SAMPLE RESULTS

Lab ID:	L1704984-02	Date Collected:	02/16/17 13:15
Client ID:	VES-131 (3-5)	Date Received:	02/16/17
Sample Location:	E. BOSTON	Field Prep:	Not Specified
Matrix:	Soil		
Analytical Method:	100,VPH-04-1.1		
Analytical Date:	02/17/17 14:56		
Analyst:	JM		
Percent Solids:	88%		

### Quality Control Information

Condition of sample received:	Satisfactory
Sample Temperature upon receipt:	Received on Ice
Were samples received in methanol?	Yes (Covering the Soil)
Methanol ratio:	1:1.3

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>Volatile Petroleum Hydrocarbons - Westborough Lab</b>						
C5-C8 Aliphatics	ND		mg/kg	2.55	--	1
C9-C12 Aliphatics	ND		mg/kg	2.55	--	1
C9-C10 Aromatics	ND		mg/kg	2.55	--	1
C5-C8 Aliphatics, Adjusted	ND		mg/kg	2.55	--	1
C9-C12 Aliphatics, Adjusted	ND		mg/kg	2.55	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2,5-Dibromotoluene-PID	108		70-130
2,5-Dibromotoluene-FID	116		70-130

**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704984  
**Report Date:** 02/21/17

### SAMPLE RESULTS

Lab ID:	L1704984-02	Date Collected:	02/16/17 13:15
Client ID:	VES-131 (3-5)	Date Received:	02/16/17
Sample Location:	E. BOSTON	Field Prep:	Not Specified
Matrix:	Soil	Extraction Method:	EPA 3546
Analytical Method:	98,EPH-04-1.1	Extraction Date:	02/20/17 11:48
Analytical Date:	02/21/17 12:28	Cleanup Method1:	EPH-04-1
Analyst:	SR	Cleanup Date1:	02/21/17
Percent Solids:	88%		

### Quality Control Information

Condition of sample received:	Satisfactory
Sample Temperature upon receipt:	Received on Ice
Sample Extraction method:	Extracted Per the Method

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>Extractable Petroleum Hydrocarbons - Westborough Lab</b>						
C9-C18 Aliphatics	ND		mg/kg	7.52	--	1
C19-C36 Aliphatics	ND		mg/kg	7.52	--	1
C11-C22 Aromatics	7.79		mg/kg	7.52	--	1
C11-C22 Aromatics, Adjusted	7.79		mg/kg	7.52	--	1
Naphthalene	ND		mg/kg	0.376	--	1
2-Methylnaphthalene	ND		mg/kg	0.376	--	1
Acenaphthylene	ND		mg/kg	0.376	--	1
Acenaphthene	ND		mg/kg	0.376	--	1
Fluorene	ND		mg/kg	0.376	--	1
Phenanthrene	ND		mg/kg	0.376	--	1
Anthracene	ND		mg/kg	0.376	--	1
Fluoranthene	ND		mg/kg	0.376	--	1
Pyrene	ND		mg/kg	0.376	--	1
Benzo(a)anthracene	ND		mg/kg	0.376	--	1
Chrysene	ND		mg/kg	0.376	--	1
Benzo(b)fluoranthene	ND		mg/kg	0.376	--	1
Benzo(k)fluoranthene	ND		mg/kg	0.376	--	1
Benzo(a)pyrene	ND		mg/kg	0.376	--	1
Indeno(1,2,3-cd)Pyrene	ND		mg/kg	0.376	--	1
Dibenzo(a,h)anthracene	ND		mg/kg	0.376	--	1
Benzo(ghi)perylene	ND		mg/kg	0.376	--	1



**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704984  
**Report Date:** 02/21/17

**SAMPLE RESULTS**

Lab ID:	L1704984-02	Date Collected:	02/16/17 13:15
Client ID:	VES-131 (3-5)	Date Received:	02/16/17
Sample Location:	E. BOSTON	Field Prep:	Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
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**Extractable Petroleum Hydrocarbons - Westborough Lab**

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Chloro-Octadecane	63		40-140
o-Terphenyl	71		40-140
2-Fluorobiphenyl	74		40-140
2-Bromonaphthalene	76		40-140

**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704984  
**Report Date:** 02/21/17

### SAMPLE RESULTS

Lab ID:	L1704984-03	Date Collected:	02/16/17 11:50
Client ID:	VES-130 (2-4)	Date Received:	02/16/17
Sample Location:	E. BOSTON	Field Prep:	Not Specified
Matrix:	Soil		
Analytical Method:	100,VPH-04-1.1		
Analytical Date:	02/17/17 15:36		
Analyst:	JM		
Percent Solids:	75%		

### Quality Control Information

Condition of sample received:	Satisfactory
Sample Temperature upon receipt:	Received on Ice
Were samples received in methanol?	Yes (Covering the Soil)
Methanol ratio:	1:1.3

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>Volatile Petroleum Hydrocarbons - Westborough Lab</b>						
C5-C8 Aliphatics	ND		mg/kg	3.67	--	1
C9-C12 Aliphatics	ND		mg/kg	3.67	--	1
C9-C10 Aromatics	ND		mg/kg	3.67	--	1
C5-C8 Aliphatics, Adjusted	ND		mg/kg	3.67	--	1
C9-C12 Aliphatics, Adjusted	ND		mg/kg	3.67	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2,5-Dibromotoluene-PID	100		70-130
2,5-Dibromotoluene-FID	103		70-130

**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704984  
**Report Date:** 02/21/17

### SAMPLE RESULTS

Lab ID:	L1704984-03	Date Collected:	02/16/17 11:50
Client ID:	VES-130 (2-4)	Date Received:	02/16/17
Sample Location:	E. BOSTON	Field Prep:	Not Specified
Matrix:	Soil	Extraction Method:	EPA 3546
Analytical Method:	98,EPH-04-1.1	Extraction Date:	02/17/17 00:27
Analytical Date:	02/17/17 13:12	Cleanup Method1:	EPH-04-1
Analyst:	SR	Cleanup Date1:	02/17/17
Percent Solids:	75%		

### Quality Control Information

Condition of sample received:	Satisfactory
Sample Temperature upon receipt:	Received on Ice
Sample Extraction method:	Extracted Per the Method

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>Extractable Petroleum Hydrocarbons - Westborough Lab</b>						
C9-C18 Aliphatics	24.7		mg/kg	8.86	--	1
C19-C36 Aliphatics	104		mg/kg	8.86	--	1
C11-C22 Aromatics	165		mg/kg	8.86	--	1
C11-C22 Aromatics, Adjusted	141		mg/kg	8.86	--	1
Naphthalene	ND		mg/kg	0.443	--	1
2-Methylnaphthalene	ND		mg/kg	0.443	--	1
Acenaphthylene	ND		mg/kg	0.443	--	1
Acenaphthene	ND		mg/kg	0.443	--	1
Fluorene	ND		mg/kg	0.443	--	1
Phenanthrene	3.00		mg/kg	0.443	--	1
Anthracene	0.745		mg/kg	0.443	--	1
Fluoranthene	4.04		mg/kg	0.443	--	1
Pyrene	3.64		mg/kg	0.443	--	1
Benzo(a)anthracene	1.90		mg/kg	0.443	--	1
Chrysene	2.29		mg/kg	0.443	--	1
Benzo(b)fluoranthene	1.83		mg/kg	0.443	--	1
Benzo(k)fluoranthene	1.80		mg/kg	0.443	--	1
Benzo(a)pyrene	2.08		mg/kg	0.443	--	1
Indeno(1,2,3-cd)Pyrene	1.40		mg/kg	0.443	--	1
Dibenzo(a,h)anthracene	ND		mg/kg	0.443	--	1
Benzo(ghi)perylene	1.37		mg/kg	0.443	--	1



**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704984  
**Report Date:** 02/21/17

**SAMPLE RESULTS**

Lab ID:	L1704984-03	Date Collected:	02/16/17 11:50
Client ID:	VES-130 (2-4)	Date Received:	02/16/17
Sample Location:	E. BOSTON	Field Prep:	Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
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**Extractable Petroleum Hydrocarbons - Westborough Lab**

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Chloro-Octadecane	53		40-140
o-Terphenyl	88		40-140
2-Fluorobiphenyl	76		40-140
2-Bromonaphthalene	78		40-140

**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704984  
**Report Date:** 02/21/17

### SAMPLE RESULTS

Lab ID:	L1704984-04	Date Collected:	02/16/17 11:55
Client ID:	VES-130 (8-10)	Date Received:	02/16/17
Sample Location:	E. BOSTON	Field Prep:	Not Specified
Matrix:	Soil		
Analytical Method:	100,VPH-04-1.1		
Analytical Date:	02/17/17 16:16		
Analyst:	JM		
Percent Solids:	68%		

### Quality Control Information

Condition of sample received:	Satisfactory
Sample Temperature upon receipt:	Received on Ice
Were samples received in methanol?	Yes (Covering the Soil)
Methanol ratio:	1:1.6

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>Volatile Petroleum Hydrocarbons - Westborough Lab</b>						
C5-C8 Aliphatics	ND		mg/kg	3.63	--	1
C9-C12 Aliphatics	ND		mg/kg	3.63	--	1
C9-C10 Aromatics	ND		mg/kg	3.63	--	1
C5-C8 Aliphatics, Adjusted	ND		mg/kg	3.63	--	1
C9-C12 Aliphatics, Adjusted	ND		mg/kg	3.63	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2,5-Dibromotoluene-PID	106		70-130
2,5-Dibromotoluene-FID	111		70-130

**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704984  
**Report Date:** 02/21/17

### SAMPLE RESULTS

Lab ID:	L1704984-04	Date Collected:	02/16/17 11:55
Client ID:	VES-130 (8-10)	Date Received:	02/16/17
Sample Location:	E. BOSTON	Field Prep:	Not Specified
Matrix:	Soil	Extraction Method:	EPA 3546
Analytical Method:	98,EPH-04-1.1	Extraction Date:	02/17/17 00:27
Analytical Date:	02/17/17 13:44	Cleanup Method1:	EPH-04-1
Analyst:	SR	Cleanup Date1:	02/17/17
Percent Solids:	68%		

### Quality Control Information

Condition of sample received:	Satisfactory
Sample Temperature upon receipt:	Received on Ice
Sample Extraction method:	Extracted Per the Method

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>Extractable Petroleum Hydrocarbons - Westborough Lab</b>						
C9-C18 Aliphatics	ND		mg/kg	9.40	--	1
C19-C36 Aliphatics	63.5		mg/kg	9.40	--	1
C11-C22 Aromatics	60.0		mg/kg	9.40	--	1
C11-C22 Aromatics, Adjusted	54.0		mg/kg	9.40	--	1
Naphthalene	ND		mg/kg	0.470	--	1
2-Methylnaphthalene	ND		mg/kg	0.470	--	1
Acenaphthylene	ND		mg/kg	0.470	--	1
Acenaphthene	ND		mg/kg	0.470	--	1
Fluorene	ND		mg/kg	0.470	--	1
Phenanthrene	0.707		mg/kg	0.470	--	1
Anthracene	ND		mg/kg	0.470	--	1
Fluoranthene	1.18		mg/kg	0.470	--	1
Pyrene	1.00		mg/kg	0.470	--	1
Benzo(a)anthracene	0.624		mg/kg	0.470	--	1
Chrysene	0.758		mg/kg	0.470	--	1
Benzo(b)fluoranthene	0.562		mg/kg	0.470	--	1
Benzo(k)fluoranthene	0.528		mg/kg	0.470	--	1
Benzo(a)pyrene	0.649		mg/kg	0.470	--	1
Indeno(1,2,3-cd)Pyrene	ND		mg/kg	0.470	--	1
Dibenzo(a,h)anthracene	ND		mg/kg	0.470	--	1
Benzo(ghi)perylene	ND		mg/kg	0.470	--	1



**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704984  
**Report Date:** 02/21/17

**SAMPLE RESULTS**

Lab ID:	L1704984-04	Date Collected:	02/16/17 11:55
Client ID:	VES-130 (8-10)	Date Received:	02/16/17
Sample Location:	E. BOSTON	Field Prep:	Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
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**Extractable Petroleum Hydrocarbons - Westborough Lab**

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Chloro-Octadecane	41		40-140
o-Terphenyl	74		40-140
2-Fluorobiphenyl	76		40-140
2-Bromonaphthalene	79		40-140

**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704984  
**Report Date:** 02/21/17

### SAMPLE RESULTS

Lab ID:	L1704984-05	Date Collected:	02/16/17 11:00
Client ID:	VES-134 (2-4)	Date Received:	02/16/17
Sample Location:	E. BOSTON	Field Prep:	Not Specified
Matrix:	Soil		
Analytical Method:	100,VPH-04-1.1		
Analytical Date:	02/17/17 16:56		
Analyst:	JM		
Percent Solids:	74%		

### Quality Control Information

Condition of sample received:	Satisfactory
Sample Temperature upon receipt:	Received on Ice
Were samples received in methanol?	Yes (Covering the Soil)
Methanol ratio:	1:1 +/- 25%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>Volatile Petroleum Hydrocarbons - Westborough Lab</b>						
C5-C8 Aliphatics	ND		mg/kg	3.79	--	1
C9-C12 Aliphatics	ND		mg/kg	3.79	--	1
C9-C10 Aromatics	ND		mg/kg	3.79	--	1
C5-C8 Aliphatics, Adjusted	ND		mg/kg	3.79	--	1
C9-C12 Aliphatics, Adjusted	ND		mg/kg	3.79	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2,5-Dibromotoluene-PID	96		70-130
2,5-Dibromotoluene-FID	101		70-130

**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704984  
**Report Date:** 02/21/17

### SAMPLE RESULTS

Lab ID:	L1704984-05	Date Collected:	02/16/17 11:00
Client ID:	VES-134 (2-4)	Date Received:	02/16/17
Sample Location:	E. BOSTON	Field Prep:	Not Specified
Matrix:	Soil	Extraction Method:	EPA 3546
Analytical Method:	98,EPH-04-1.1	Extraction Date:	02/17/17 00:27
Analytical Date:	02/17/17 14:16	Cleanup Method1:	EPH-04-1
Analyst:	SR	Cleanup Date1:	02/17/17
Percent Solids:	74%		

### Quality Control Information

Condition of sample received:	Satisfactory
Sample Temperature upon receipt:	Received on Ice
Sample Extraction method:	Extracted Per the Method

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>Extractable Petroleum Hydrocarbons - Westborough Lab</b>						
C9-C18 Aliphatics	ND		mg/kg	8.84	--	1
C19-C36 Aliphatics	59.0		mg/kg	8.84	--	1
C11-C22 Aromatics	59.3		mg/kg	8.84	--	1
C11-C22 Aromatics, Adjusted	42.1		mg/kg	8.84	--	1
Naphthalene	ND		mg/kg	0.442	--	1
2-Methylnaphthalene	ND		mg/kg	0.442	--	1
Acenaphthylene	ND		mg/kg	0.442	--	1
Acenaphthene	ND		mg/kg	0.442	--	1
Fluorene	ND		mg/kg	0.442	--	1
Phenanthrene	1.92		mg/kg	0.442	--	1
Anthracene	ND		mg/kg	0.442	--	1
Fluoranthene	2.77		mg/kg	0.442	--	1
Pyrene	2.50		mg/kg	0.442	--	1
Benzo(a)anthracene	1.66		mg/kg	0.442	--	1
Chrysene	1.82		mg/kg	0.442	--	1
Benzo(b)fluoranthene	1.44		mg/kg	0.442	--	1
Benzo(k)fluoranthene	1.40		mg/kg	0.442	--	1
Benzo(a)pyrene	1.57		mg/kg	0.442	--	1
Indeno(1,2,3-cd)Pyrene	1.08		mg/kg	0.442	--	1
Dibenzo(a,h)anthracene	ND		mg/kg	0.442	--	1
Benzo(ghi)perylene	1.02		mg/kg	0.442	--	1



**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704984  
**Report Date:** 02/21/17

**SAMPLE RESULTS**

Lab ID:	L1704984-05	Date Collected:	02/16/17 11:00
Client ID:	VES-134 (2-4)	Date Received:	02/16/17
Sample Location:	E. BOSTON	Field Prep:	Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
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**Extractable Petroleum Hydrocarbons - Westborough Lab**

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Chloro-Octadecane	58		40-140
o-Terphenyl	55		40-140
2-Fluorobiphenyl	50		40-140
2-Bromonaphthalene	53		40-140

**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704984  
**Report Date:** 02/21/17

### SAMPLE RESULTS

Lab ID:	L1704984-07	Date Collected:	02/16/17 09:20
Client ID:	VES-136 (3-5)	Date Received:	02/16/17
Sample Location:	E. BOSTON	Field Prep:	Not Specified
Matrix:	Soil		
Analytical Method:	100,VPH-04-1.1		
Analytical Date:	02/17/17 17:36		
Analyst:	JM		
Percent Solids:	77%		

### Quality Control Information

Condition of sample received:	Satisfactory
Sample Temperature upon receipt:	Received on Ice
Were samples received in methanol?	Yes (Covering the Soil)
Methanol ratio:	1:1 +/- 25%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>Volatile Petroleum Hydrocarbons - Westborough Lab</b>						
C5-C8 Aliphatics	ND		mg/kg	3.89	--	1
C9-C12 Aliphatics	ND		mg/kg	3.89	--	1
C9-C10 Aromatics	ND		mg/kg	3.89	--	1
C5-C8 Aliphatics, Adjusted	ND		mg/kg	3.89	--	1
C9-C12 Aliphatics, Adjusted	ND		mg/kg	3.89	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2,5-Dibromotoluene-PID	107		70-130
2,5-Dibromotoluene-FID	113		70-130

**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704984  
**Report Date:** 02/21/17

### SAMPLE RESULTS

Lab ID:	L1704984-07	Date Collected:	02/16/17 09:20
Client ID:	VES-136 (3-5)	Date Received:	02/16/17
Sample Location:	E. BOSTON	Field Prep:	Not Specified
Matrix:	Soil	Extraction Method:	EPA 3546
Analytical Method:	98,EPH-04-1.1	Extraction Date:	02/17/17 00:27
Analytical Date:	02/17/17 15:03	Cleanup Method1:	EPH-04-1
Analyst:	SR	Cleanup Date1:	02/17/17
Percent Solids:	77%		

### Quality Control Information

Condition of sample received:	Satisfactory
Sample Temperature upon receipt:	Received on Ice
Sample Extraction method:	Extracted Per the Method

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>Extractable Petroleum Hydrocarbons - Westborough Lab</b>						
C9-C18 Aliphatics	ND		mg/kg	8.33	--	1
C19-C36 Aliphatics	ND		mg/kg	8.33	--	1
C11-C22 Aromatics	9.14		mg/kg	8.33	--	1
C11-C22 Aromatics, Adjusted	9.14		mg/kg	8.33	--	1
Naphthalene	ND		mg/kg	0.416	--	1
2-Methylnaphthalene	ND		mg/kg	0.416	--	1
Acenaphthylene	ND		mg/kg	0.416	--	1
Acenaphthene	ND		mg/kg	0.416	--	1
Fluorene	ND		mg/kg	0.416	--	1
Phenanthrene	ND		mg/kg	0.416	--	1
Anthracene	ND		mg/kg	0.416	--	1
Fluoranthene	ND		mg/kg	0.416	--	1
Pyrene	ND		mg/kg	0.416	--	1
Benzo(a)anthracene	ND		mg/kg	0.416	--	1
Chrysene	ND		mg/kg	0.416	--	1
Benzo(b)fluoranthene	ND		mg/kg	0.416	--	1
Benzo(k)fluoranthene	ND		mg/kg	0.416	--	1
Benzo(a)pyrene	ND		mg/kg	0.416	--	1
Indeno(1,2,3-cd)Pyrene	ND		mg/kg	0.416	--	1
Dibenzo(a,h)anthracene	ND		mg/kg	0.416	--	1
Benzo(ghi)perylene	ND		mg/kg	0.416	--	1



**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704984  
**Report Date:** 02/21/17

**SAMPLE RESULTS**

Lab ID:	L1704984-07	Date Collected:	02/16/17 09:20
Client ID:	VES-136 (3-5)	Date Received:	02/16/17
Sample Location:	E. BOSTON	Field Prep:	Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
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**Extractable Petroleum Hydrocarbons - Westborough Lab**

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Chloro-Octadecane	68		40-140
o-Terphenyl	79		40-140
2-Fluorobiphenyl	78		40-140
2-Bromonaphthalene	80		40-140



Project Name: E. BOSTON

Lab Number: L1704984

Project Number: 43068

Report Date: 02/21/17

**SAMPLE RESULTS**

Lab ID: L1704984-08 Date Collected: 02/16/17 09:25  
 Client ID: VES-136 (10-12) Date Received: 02/16/17  
 Sample Location: E. BOSTON Field Prep: Not Specified  
 Matrix: Soil  
 Analytical Method: 100,VPH-04-1.1  
 Analytical Date: 02/17/17 18:16  
 Analyst: JM  
 Percent Solids: 78%

**Quality Control Information**

Condition of sample received: Satisfactory  
 Sample Temperature upon receipt: Received on Ice  
 Were samples received in methanol? Yes (Covering the Soil)  
 Methanol ratio: 1:1.7

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>Volatile Petroleum Hydrocarbons - Westborough Lab</b>						
C5-C8 Aliphatics	ND		mg/kg	2.79	--	1
C9-C12 Aliphatics	ND		mg/kg	2.79	--	1
C9-C10 Aromatics	ND		mg/kg	2.79	--	1
C5-C8 Aliphatics, Adjusted	ND		mg/kg	2.79	--	1
C9-C12 Aliphatics, Adjusted	ND		mg/kg	2.79	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2,5-Dibromotoluene-PID	131	Q	70-130
2,5-Dibromotoluene-FID	138	Q	70-130

**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704984  
**Report Date:** 02/21/17

### SAMPLE RESULTS

Lab ID:	L1704984-08	Date Collected:	02/16/17 09:25
Client ID:	VES-136 (10-12)	Date Received:	02/16/17
Sample Location:	E. BOSTON	Field Prep:	Not Specified
Matrix:	Soil	Extraction Method:	EPA 3546
Analytical Method:	98,EPH-04-1.1	Extraction Date:	02/17/17 00:27
Analytical Date:	02/17/17 15:35	Cleanup Method1:	EPH-04-1
Analyst:	SR	Cleanup Date1:	02/17/17
Percent Solids:	78%		

### Quality Control Information

Condition of sample received:	Satisfactory
Sample Temperature upon receipt:	Received on Ice
Sample Extraction method:	Extracted Per the Method

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>Extractable Petroleum Hydrocarbons - Westborough Lab</b>						
C9-C18 Aliphatics	ND		mg/kg	8.34	--	1
C19-C36 Aliphatics	ND		mg/kg	8.34	--	1
C11-C22 Aromatics	ND		mg/kg	8.34	--	1
C11-C22 Aromatics, Adjusted	ND		mg/kg	8.34	--	1
Naphthalene	ND		mg/kg	0.417	--	1
2-Methylnaphthalene	ND		mg/kg	0.417	--	1
Acenaphthylene	ND		mg/kg	0.417	--	1
Acenaphthene	ND		mg/kg	0.417	--	1
Fluorene	ND		mg/kg	0.417	--	1
Phenanthrene	ND		mg/kg	0.417	--	1
Anthracene	ND		mg/kg	0.417	--	1
Fluoranthene	ND		mg/kg	0.417	--	1
Pyrene	ND		mg/kg	0.417	--	1
Benzo(a)anthracene	ND		mg/kg	0.417	--	1
Chrysene	ND		mg/kg	0.417	--	1
Benzo(b)fluoranthene	ND		mg/kg	0.417	--	1
Benzo(k)fluoranthene	ND		mg/kg	0.417	--	1
Benzo(a)pyrene	ND		mg/kg	0.417	--	1
Indeno(1,2,3-cd)Pyrene	ND		mg/kg	0.417	--	1
Dibenzo(a,h)anthracene	ND		mg/kg	0.417	--	1
Benzo(ghi)perylene	ND		mg/kg	0.417	--	1



Project Name: E. BOSTON

Lab Number: L1704984

Project Number: 43068

Report Date: 02/21/17

**SAMPLE RESULTS**

Lab ID:	L1704984-08	Date Collected:	02/16/17 09:25
Client ID:	VES-136 (10-12)	Date Received:	02/16/17
Sample Location:	E. BOSTON	Field Prep:	Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
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**Extractable Petroleum Hydrocarbons - Westborough Lab**

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Chloro-Octadecane	59		40-140
o-Terphenyl	58		40-140
2-Fluorobiphenyl	61		40-140
2-Bromonaphthalene	63		40-140

**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704984  
**Report Date:** 02/21/17

### SAMPLE RESULTS

Lab ID:	L1704984-10	Date Collected:	02/16/17 08:20
Client ID:	VES-107 (2-4)	Date Received:	02/16/17
Sample Location:	E. BOSTON	Field Prep:	Not Specified
Matrix:	Soil		
Analytical Method:	100,VPH-04-1.1		
Analytical Date:	02/17/17 23:35		
Analyst:	JM		
Percent Solids:	87%		

### Quality Control Information

Condition of sample received:	Satisfactory
Sample Temperature upon receipt:	Received on Ice
Were samples received in methanol?	Yes (Covering the Soil)
Methanol ratio:	1:1.4

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>Volatile Petroleum Hydrocarbons - Westborough Lab</b>						
C5-C8 Aliphatics	ND		mg/kg	2.63	--	1
C9-C12 Aliphatics	52.5		mg/kg	2.63	--	1
C9-C10 Aromatics	32.0		mg/kg	2.63	--	1
C5-C8 Aliphatics, Adjusted	ND		mg/kg	2.63	--	1
C9-C12 Aliphatics, Adjusted	20.6		mg/kg	2.63	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2,5-Dibromotoluene-PID	116		70-130
2,5-Dibromotoluene-FID	130		70-130



**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704984  
**Report Date:** 02/21/17

### SAMPLE RESULTS

Lab ID:	L1704984-10	Date Collected:	02/16/17 08:20
Client ID:	VES-107 (2-4)	Date Received:	02/16/17
Sample Location:	E. BOSTON	Field Prep:	Not Specified
Matrix:	Soil	Extraction Method:	EPA 3546
Analytical Method:	98,EPH-04-1.1	Extraction Date:	02/17/17 00:27
Analytical Date:	02/17/17 16:06	Cleanup Method1:	EPH-04-1
Analyst:	SR	Cleanup Date1:	02/17/17
Percent Solids:	87%		

### Quality Control Information

Condition of sample received:	Satisfactory
Sample Temperature upon receipt:	Received on Ice
Sample Extraction method:	Extracted Per the Method

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>Extractable Petroleum Hydrocarbons - Westborough Lab</b>						
C9-C18 Aliphatics	218		mg/kg	7.48	--	1
C19-C36 Aliphatics	179		mg/kg	7.48	--	1
C11-C22 Aromatics	183		mg/kg	7.48	--	1
C11-C22 Aromatics, Adjusted	161		mg/kg	7.48	--	1
Naphthalene	ND		mg/kg	0.374	--	1
2-Methylnaphthalene	ND		mg/kg	0.374	--	1
Acenaphthylene	ND		mg/kg	0.374	--	1
Acenaphthene	0.403		mg/kg	0.374	--	1
Fluorene	ND		mg/kg	0.374	--	1
Phenanthrene	3.31		mg/kg	0.374	--	1
Anthracene	0.541		mg/kg	0.374	--	1
Fluoranthene	4.02		mg/kg	0.374	--	1
Pyrene	3.42		mg/kg	0.374	--	1
Benzo(a)anthracene	1.57		mg/kg	0.374	--	1
Chrysene	1.98		mg/kg	0.374	--	1
Benzo(b)fluoranthene	1.28		mg/kg	0.374	--	1
Benzo(k)fluoranthene	1.56		mg/kg	0.374	--	1
Benzo(a)pyrene	1.56		mg/kg	0.374	--	1
Indeno(1,2,3-cd)Pyrene	1.02		mg/kg	0.374	--	1
Dibenzo(a,h)anthracene	ND		mg/kg	0.374	--	1
Benzo(ghi)perylene	1.01		mg/kg	0.374	--	1



**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704984  
**Report Date:** 02/21/17

**SAMPLE RESULTS**

Lab ID:	L1704984-10	Date Collected:	02/16/17 08:20
Client ID:	VES-107 (2-4)	Date Received:	02/16/17
Sample Location:	E. BOSTON	Field Prep:	Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
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**Extractable Petroleum Hydrocarbons - Westborough Lab**

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Chloro-Octadecane	68		40-140
o-Terphenyl	84		40-140
2-Fluorobiphenyl	76		40-140
2-Bromonaphthalene	83		40-140

**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704984  
**Report Date:** 02/21/17

### SAMPLE RESULTS

Lab ID:	L1704984-11	Date Collected:	02/16/17 07:40
Client ID:	VES-105 (4-6)	Date Received:	02/16/17
Sample Location:	E. BOSTON	Field Prep:	Not Specified
Matrix:	Soil		
Analytical Method:	100,VPH-04-1.1		
Analytical Date:	02/17/17 18:56		
Analyst:	JM		
Percent Solids:	74%		

### Quality Control Information

Condition of sample received:	Satisfactory
Sample Temperature upon receipt:	Received on Ice
Were samples received in methanol?	Yes (Covering the Soil)
Methanol ratio:	1:1.3

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>Volatile Petroleum Hydrocarbons - Westborough Lab</b>						
C5-C8 Aliphatics	ND		mg/kg	3.60	--	1
C9-C12 Aliphatics	ND		mg/kg	3.60	--	1
C9-C10 Aromatics	ND		mg/kg	3.60	--	1
C5-C8 Aliphatics, Adjusted	ND		mg/kg	3.60	--	1
C9-C12 Aliphatics, Adjusted	ND		mg/kg	3.60	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2,5-Dibromotoluene-PID	87		70-130
2,5-Dibromotoluene-FID	91		70-130



**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704984  
**Report Date:** 02/21/17

### SAMPLE RESULTS

Lab ID:	L1704984-11	D	Date Collected:	02/16/17 07:40
Client ID:	VES-105 (4-6)		Date Received:	02/16/17
Sample Location:	E. BOSTON		Field Prep:	Not Specified
Matrix:	Soil		Extraction Method:	EPA 3546
Analytical Method:	98,EPH-04-1.1		Extraction Date:	02/17/17 00:27
Analytical Date:	02/20/17 17:11		Cleanup Method1:	EPH-04-1
Analyst:	SR		Cleanup Date1:	02/17/17
Percent Solids:	74%			

### Quality Control Information

Condition of sample received:	Satisfactory
Sample Temperature upon receipt:	Received on Ice
Sample Extraction method:	Extracted Per the Method

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>Extractable Petroleum Hydrocarbons - Westborough Lab</b>						
C9-C18 Aliphatics	47.8		mg/kg	42.8	--	5
C19-C36 Aliphatics	657		mg/kg	42.8	--	5
C11-C22 Aromatics	898		mg/kg	42.8	--	5
C11-C22 Aromatics, Adjusted	616		mg/kg	42.8	--	5
Naphthalene	ND		mg/kg	2.14	--	5
2-Methylnaphthalene	ND		mg/kg	2.14	--	5
Acenaphthylene	ND		mg/kg	2.14	--	5
Acenaphthene	ND		mg/kg	2.14	--	5
Fluorene	ND		mg/kg	2.14	--	5
Phenanthrene	45.6		mg/kg	2.14	--	5
Anthracene	11.1		mg/kg	2.14	--	5
Fluoranthene	51.9		mg/kg	2.14	--	5
Pyrene	42.6		mg/kg	2.14	--	5
Benzo(a)anthracene	21.6		mg/kg	2.14	--	5
Chrysene	20.8		mg/kg	2.14	--	5
Benzo(b)fluoranthene	18.6		mg/kg	2.14	--	5
Benzo(k)fluoranthene	18.2		mg/kg	2.14	--	5
Benzo(a)pyrene	19.3		mg/kg	2.14	--	5
Indeno(1,2,3-cd)Pyrene	14.6		mg/kg	2.14	--	5
Dibenzo(a,h)anthracene	3.04		mg/kg	2.14	--	5
Benzo(ghi)perylene	14.6		mg/kg	2.14	--	5



Project Name: E. BOSTON

Lab Number: L1704984

Project Number: 43068

Report Date: 02/21/17

**SAMPLE RESULTS**

Lab ID:	L1704984-11	D	Date Collected:	02/16/17 07:40
Client ID:	VES-105 (4-6)		Date Received:	02/16/17
Sample Location:	E. BOSTON		Field Prep:	Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
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**Extractable Petroleum Hydrocarbons - Westborough Lab**

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Chloro-Octadecane	73		40-140
o-Terphenyl	85		40-140
2-Fluorobiphenyl	72		40-140
2-Bromonaphthalene	70		40-140

**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704984  
**Report Date:** 02/21/17

### SAMPLE RESULTS

Lab ID:	L1704984-12	Date Collected:	02/16/17 12:00
Client ID:	VES-128 (1-2)	Date Received:	02/16/17
Sample Location:	E. BOSTON	Field Prep:	Not Specified
Matrix:	Soil		
Analytical Method:	100,VPH-04-1.1		
Analytical Date:	02/17/17 19:36		
Analyst:	JM		
Percent Solids:	89%		

### Quality Control Information

Condition of sample received:	Satisfactory
Sample Temperature upon receipt:	Received on Ice
Were samples received in methanol?	Yes (Covering the Soil)
Methanol ratio:	4.4:1

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>Volatile Petroleum Hydrocarbons - Westborough Lab</b>						
C5-C8 Aliphatics	ND		mg/kg	13.6	--	1
C9-C12 Aliphatics	ND		mg/kg	13.6	--	1
C9-C10 Aromatics	ND		mg/kg	13.6	--	1
C5-C8 Aliphatics, Adjusted	ND		mg/kg	13.6	--	1
C9-C12 Aliphatics, Adjusted	ND		mg/kg	13.6	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2,5-Dibromotoluene-PID	99		70-130
2,5-Dibromotoluene-FID	103		70-130



**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704984  
**Report Date:** 02/21/17

### SAMPLE RESULTS

Lab ID:	L1704984-12	Date Collected:	02/16/17 12:00
Client ID:	VES-128 (1-2)	Date Received:	02/16/17
Sample Location:	E. BOSTON	Field Prep:	Not Specified
Matrix:	Soil	Extraction Method:	EPA 3546
Analytical Method:	98,EPH-04-1.1	Extraction Date:	02/17/17 00:27
Analytical Date:	02/17/17 17:10	Cleanup Method1:	EPH-04-1
Analyst:	SR	Cleanup Date1:	02/17/17
Percent Solids:	89%		

### Quality Control Information

Condition of sample received:	Satisfactory
Sample Temperature upon receipt:	Received on Ice
Sample Extraction method:	Extracted Per the Method

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>Extractable Petroleum Hydrocarbons - Westborough Lab</b>						
C9-C18 Aliphatics	8.12		mg/kg	7.15	--	1
C19-C36 Aliphatics	20.7		mg/kg	7.15	--	1
C11-C22 Aromatics	123		mg/kg	7.15	--	1
C11-C22 Aromatics, Adjusted	83.3		mg/kg	7.15	--	1
Naphthalene	ND		mg/kg	0.358	--	1
2-Methylnaphthalene	ND		mg/kg	0.358	--	1
Acenaphthylene	ND		mg/kg	0.358	--	1
Acenaphthene	ND		mg/kg	0.358	--	1
Fluorene	ND		mg/kg	0.358	--	1
Phenanthrene	4.00		mg/kg	0.358	--	1
Anthracene	1.08		mg/kg	0.358	--	1
Fluoranthene	6.61		mg/kg	0.358	--	1
Pyrene	6.15		mg/kg	0.358	--	1
Benzo(a)anthracene	3.58		mg/kg	0.358	--	1
Chrysene	3.82		mg/kg	0.358	--	1
Benzo(b)fluoranthene	2.98		mg/kg	0.358	--	1
Benzo(k)fluoranthene	2.85		mg/kg	0.358	--	1
Benzo(a)pyrene	3.56		mg/kg	0.358	--	1
Indeno(1,2,3-cd)Pyrene	2.42		mg/kg	0.358	--	1
Dibenzo(a,h)anthracene	0.418		mg/kg	0.358	--	1
Benzo(ghi)perylene	2.28		mg/kg	0.358	--	1



**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704984  
**Report Date:** 02/21/17

**SAMPLE RESULTS**

Lab ID:	L1704984-12	Date Collected:	02/16/17 12:00
Client ID:	VES-128 (1-2)	Date Received:	02/16/17
Sample Location:	E. BOSTON	Field Prep:	Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
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**Extractable Petroleum Hydrocarbons - Westborough Lab**

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Chloro-Octadecane	67		40-140
o-Terphenyl	67		40-140
2-Fluorobiphenyl	62		40-140
2-Bromonaphthalene	64		40-140

**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704984  
**Report Date:** 02/21/17

### Method Blank Analysis Batch Quality Control

Analytical Method: 98,EPH-04-1.1  
Analytical Date: 02/17/17 11:06  
Analyst: SR

Extraction Method: EPA 3546  
Extraction Date: 02/17/17 00:27  
Cleanup Method: EPH-04-1  
Cleanup Date: 02/17/17

Parameter	Result	Qualifier	Units	RL	MDL
Extractable Petroleum Hydrocarbons - Westborough Lab for sample(s): WG978610-1				03-05,07-08,10-12	Batch:
C9-C18 Aliphatics	ND		mg/kg	6.48	--
C19-C36 Aliphatics	ND		mg/kg	6.48	--
C11-C22 Aromatics	ND		mg/kg	6.48	--
C11-C22 Aromatics, Adjusted	ND		mg/kg	6.48	--
Naphthalene	ND		mg/kg	0.324	--
2-Methylnaphthalene	ND		mg/kg	0.324	--
Acenaphthylene	ND		mg/kg	0.324	--
Acenaphthene	ND		mg/kg	0.324	--
Fluorene	ND		mg/kg	0.324	--
Phenanthrene	ND		mg/kg	0.324	--
Anthracene	ND		mg/kg	0.324	--
Fluoranthene	ND		mg/kg	0.324	--
Pyrene	ND		mg/kg	0.324	--
Benzo(a)anthracene	ND		mg/kg	0.324	--
Chrysene	ND		mg/kg	0.324	--
Benzo(b)fluoranthene	ND		mg/kg	0.324	--
Benzo(k)fluoranthene	ND		mg/kg	0.324	--
Benzo(a)pyrene	ND		mg/kg	0.324	--
Indeno(1,2,3-cd)Pyrene	ND		mg/kg	0.324	--
Dibenzo(a,h)anthracene	ND		mg/kg	0.324	--
Benzo(ghi)perylene	ND		mg/kg	0.324	--

**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704984  
**Report Date:** 02/21/17

### Method Blank Analysis Batch Quality Control

Analytical Method: 98,EPH-04-1.1  
Analytical Date: 02/17/17 11:06  
Analyst: SR

Extraction Method: EPA 3546  
Extraction Date: 02/17/17 00:27  
Cleanup Method: EPH-04-1  
Cleanup Date: 02/17/17

Parameter	Result	Qualifier	Units	RL	MDL
Extractable Petroleum Hydrocarbons - Westborough Lab for sample(s): WG978610-1				03-05,07-08,10-12	Batch:

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Chloro-Octadecane	58		40-140
o-Terphenyl	59		40-140
2-Fluorobiphenyl	74		40-140
2-Bromonaphthalene	75		40-140

**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704984  
**Report Date:** 02/21/17

### Method Blank Analysis Batch Quality Control

Analytical Method: 98,EPH-04-1.1  
Analytical Date: 02/21/17 10:53  
Analyst: SR

Extraction Method: EPA 3546  
Extraction Date: 02/20/17 11:48  
Cleanup Method: EPH-04-1  
Cleanup Date: 02/21/17

Parameter	Result	Qualifier	Units	RL	MDL
Extractable Petroleum Hydrocarbons - Westborough Lab for sample(s):	02		Batch:	WG979475-1	
C9-C18 Aliphatics	ND		mg/kg	6.36	--
C19-C36 Aliphatics	ND		mg/kg	6.36	--
C11-C22 Aromatics	ND		mg/kg	6.36	--
C11-C22 Aromatics, Adjusted	ND		mg/kg	6.36	--
Naphthalene	ND		mg/kg	0.318	--
2-Methylnaphthalene	ND		mg/kg	0.318	--
Acenaphthylene	ND		mg/kg	0.318	--
Acenaphthene	ND		mg/kg	0.318	--
Fluorene	ND		mg/kg	0.318	--
Phenanthrene	ND		mg/kg	0.318	--
Anthracene	ND		mg/kg	0.318	--
Fluoranthene	ND		mg/kg	0.318	--
Pyrene	ND		mg/kg	0.318	--
Benzo(a)anthracene	ND		mg/kg	0.318	--
Chrysene	ND		mg/kg	0.318	--
Benzo(b)fluoranthene	ND		mg/kg	0.318	--
Benzo(k)fluoranthene	ND		mg/kg	0.318	--
Benzo(a)pyrene	ND		mg/kg	0.318	--
Indeno(1,2,3-cd)Pyrene	ND		mg/kg	0.318	--
Dibenzo(a,h)anthracene	ND		mg/kg	0.318	--
Benzo(ghi)perylene	ND		mg/kg	0.318	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Chloro-Octadecane	76		40-140
o-Terphenyl	73		40-140
2-Fluorobiphenyl	76		40-140
2-Bromonaphthalene	78		40-140



**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704984  
**Report Date:** 02/21/17

**Method Blank Analysis**  
**Batch Quality Control**

Analytical Method: 100,VPH-04-1.1  
Analytical Date: 02/17/17 11:18  
Analyst: JM

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Petroleum Hydrocarbons - Westborough Lab for sample(s): 02-05,07-08,10-12 Batch: WG979575-3					
C5-C8 Aliphatics	ND		mg/kg	2.67	--
C9-C12 Aliphatics	ND		mg/kg	2.67	--
C9-C10 Aromatics	ND		mg/kg	2.67	--
C5-C8 Aliphatics, Adjusted	ND		mg/kg	2.67	--
C9-C12 Aliphatics, Adjusted	ND		mg/kg	2.67	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2,5-Dibromotoluene-PID	102		70-130
2,5-Dibromotoluene-FID	107		70-130

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704984  
**Report Date:** 02/21/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Extractable Petroleum Hydrocarbons - Westborough Lab Associated sample(s): 03-05,07-08,10-12 Batch: WG978610-2 WG978610-3								
C9-C18 Aliphatics	63		57		40-140	10		25
C19-C36 Aliphatics	73		64		40-140	13		25
C11-C22 Aromatics	77		48		40-140	46	Q	25
Naphthalene	61		40		40-140	42	Q	25
2-Methylnaphthalene	63		41		40-140	42	Q	25
Acenaphthylene	64		41		40-140	44	Q	25
Acenaphthene	68		43		40-140	45	Q	25
Fluorene	72		44		40-140	48	Q	25
Phenanthrene	75		46		40-140	48	Q	25
Anthracene	78		48		40-140	48	Q	25
Fluoranthene	78		47		40-140	50	Q	25
Pyrene	78		48		40-140	48	Q	25
Benzo(a)anthracene	76		46		40-140	49	Q	25
Chrysene	79		48		40-140	49	Q	25
Benzo(b)fluoranthene	77		47		40-140	48	Q	25
Benzo(k)fluoranthene	80		49		40-140	48	Q	25
Benzo(a)pyrene	71		43		40-140	49	Q	25
Indeno(1,2,3-cd)Pyrene	75		45		40-140	50	Q	25
Dibenzo(a,h)anthracene	72		44		40-140	48	Q	25
Benzo(ghi)perylene	70		42		40-140	50	Q	25
Nonane (C9)	49		46		30-140	6		25

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704984  
**Report Date:** 02/21/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Extractable Petroleum Hydrocarbons - Westborough Lab Associated sample(s): 03-05,07-08,10-12 Batch: WG978610-2 WG978610-3								
Decane (C10)	54		52		40-140	4		25
Dodecane (C12)	56		54		40-140	4		25
Tetradecane (C14)	60		55		40-140	9		25
Hexadecane (C16)	67		58		40-140	14		25
Octadecane (C18)	71		62		40-140	14		25
Nonadecane (C19)	70		60		40-140	15		25
Eicosane (C20)	72		61		40-140	17		25
Docosane (C22)	71		61		40-140	15		25
Tetracosane (C24)	71		61		40-140	15		25
Hexacosane (C26)	71		61		40-140	15		25
Octacosane (C28)	70		61		40-140	14		25
Triacontane (C30)	70		60		40-140	15		25
Hexatriacontane (C36)	69		60		40-140	14		25

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Chloro-Octadecane	62		50		40-140
o-Terphenyl	78		49		40-140
2-Fluorobiphenyl	69		44		40-140
2-Bromonaphthalene	72		45		40-140
% Naphthalene Breakthrough	0		0		
% 2-Methylnaphthalene Breakthrough	0		0		

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704984  
**Report Date:** 02/21/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Extractable Petroleum Hydrocarbons - Westborough Lab Associated sample(s): 02 Batch: WG979475-2 WG979475-3								
C9-C18 Aliphatics	76		76		40-140	0		25
C19-C36 Aliphatics	85		89		40-140	5		25
C11-C22 Aromatics	75		80		40-140	6		25
Naphthalene	61		62		40-140	2		25
2-Methylnaphthalene	62		63		40-140	2		25
Acenaphthylene	65		67		40-140	3		25
Acenaphthene	65		68		40-140	5		25
Fluorene	68		72		40-140	6		25
Phenanthrene	70		75		40-140	7		25
Anthracene	75		80		40-140	6		25
Fluoranthene	73		78		40-140	7		25
Pyrene	73		80		40-140	9		25
Benzo(a)anthracene	73		79		40-140	8		25
Chrysene	76		82		40-140	8		25
Benzo(b)fluoranthene	73		80		40-140	9		25
Benzo(k)fluoranthene	78		84		40-140	7		25
Benzo(a)pyrene	70		76		40-140	8		25
Indeno(1,2,3-cd)Pyrene	70		78		40-140	11		25
Dibenzo(a,h)anthracene	73		81		40-140	10		25
Benzo(ghi)perylene	66		73		40-140	10		25
Nonane (C9)	61		60		30-140	2		25

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704984  
**Report Date:** 02/21/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Extractable Petroleum Hydrocarbons - Westborough Lab Associated sample(s): 02 Batch: WG979475-2 WG979475-3								
Decane (C10)	69		68		40-140	1		25
Dodecane (C12)	73		72		40-140	1		25
Tetradecane (C14)	75		76		40-140	1		25
Hexadecane (C16)	78		81		40-140	4		25
Octadecane (C18)	82		86		40-140	5		25
Nonadecane (C19)	82		86		40-140	5		25
Eicosane (C20)	83		87		40-140	5		25
Docosane (C22)	83		88		40-140	6		25
Tetracosane (C24)	84		88		40-140	5		25
Hexacosane (C26)	84		88		40-140	5		25
Octacosane (C28)	84		88		40-140	5		25
Triacontane (C30)	84		88		40-140	5		25
Hexatriacontane (C36)	82		88		40-140	7		25

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Chloro-Octadecane	62		64		40-140
o-Terphenyl	79		82		40-140
2-Fluorobiphenyl	72		75		40-140
2-Bromonaphthalene	75		78		40-140
% Naphthalene Breakthrough	0		0		
% 2-Methylnaphthalene Breakthrough	0		0		

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704984  
**Report Date:** 02/21/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Petroleum Hydrocarbons - Westborough Lab Associated sample(s): 02-05,07-08,10-12 Batch: WG979575-1 WG979575-2								
C5-C8 Aliphatics	101		103		70-130	2		25
C9-C12 Aliphatics	98		104		70-130	6		25
C9-C10 Aromatics	96		100		70-130	4		25
Benzene	92		98		70-130	7		25
Toluene	94		98		70-130	5		25
Ethylbenzene	95		98		70-130	4		25
p/m-Xylene	97		100		70-130	3		25
o-Xylene	98		100		70-130	3		25
Methyl tert butyl ether	92		102		70-130	10		25
Naphthalene	103		107		70-130	4		25
1,2,4-Trimethylbenzene	96		100		70-130	4		25
Pentane	95		96		70-130	1		25
2-Methylpentane	100		102		70-130	2		25
2,2,4-Trimethylpentane	104		106		70-130	2		25
n-Nonane	101		105		30-130	4		25
n-Decane	96		101		70-130	5		25
n-Butylcyclohexane	98		105		70-130	7		25

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704984  
**Report Date:** 02/21/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
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Volatile Petroleum Hydrocarbons - Westborough Lab Associated sample(s): 02-05,07-08,10-12 Batch: WG979575-1 WG979575-2

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2,5-Dibromotoluene-PID	101		102		70-130
2,5-Dibromotoluene-FID	102		103		70-130

**PCBS**



Project Name: E. BOSTON

Lab Number: L1704984

Project Number: 43068

Report Date: 02/21/17

**SAMPLE RESULTS**

Lab ID: L1704984-02  
 Client ID: VES-131 (3-5)  
 Sample Location: E. BOSTON  
 Matrix: Soil  
 Analytical Method: 97,8082A  
 Analytical Date: 02/19/17 19:34  
 Analyst: HT  
 Percent Solids: 88%

Date Collected: 02/16/17 13:15  
 Date Received: 02/16/17  
 Field Prep: Not Specified  
 Extraction Method: EPA 3540C  
 Extraction Date: 02/17/17 04:58  
 Cleanup Method: EPA 3665A  
 Cleanup Date: 02/18/17  
 Cleanup Method: EPA 3660B  
 Cleanup Date: 02/18/17

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
<b>MCP Polychlorinated Biphenyls - Westborough Lab</b>							
Aroclor 1016	ND		ug/kg	36.2	--	1	A
Aroclor 1221	ND		ug/kg	36.2	--	1	A
Aroclor 1232	ND		ug/kg	36.2	--	1	A
Aroclor 1242	ND		ug/kg	36.2	--	1	A
Aroclor 1248	ND		ug/kg	36.2	--	1	A
Aroclor 1254	ND		ug/kg	36.2	--	1	A
Aroclor 1260	ND		ug/kg	36.2	--	1	A
Aroclor 1262	ND		ug/kg	36.2	--	1	A
Aroclor 1268	ND		ug/kg	36.2	--	1	A
PCBs, Total	ND		ug/kg	36.2	--	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	85		30-150	A
Decachlorobiphenyl	88		30-150	A
2,4,5,6-Tetrachloro-m-xylene	78		30-150	B
Decachlorobiphenyl	66		30-150	B

**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704984  
**Report Date:** 02/21/17

**SAMPLE RESULTS**

Lab ID: L1704984-03  
Client ID: VES-130 (2-4)  
Sample Location: E. BOSTON  
Matrix: Soil  
Analytical Method: 97,8082A  
Analytical Date: 02/19/17 19:48  
Analyst: HT  
Percent Solids: 75%

Date Collected: 02/16/17 11:50  
Date Received: 02/16/17  
Field Prep: Not Specified  
Extraction Method: EPA 3540C  
Extraction Date: 02/17/17 04:58  
Cleanup Method: EPA 3665A  
Cleanup Date: 02/18/17  
Cleanup Method: EPA 3660B  
Cleanup Date: 02/18/17

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
<b>MCP Polychlorinated Biphenyls - Westborough Lab</b>							
Aroclor 1016	ND		ug/kg	43.4	--	1	A
Aroclor 1221	ND		ug/kg	43.4	--	1	A
Aroclor 1232	ND		ug/kg	43.4	--	1	A
Aroclor 1242	ND		ug/kg	43.4	--	1	A
Aroclor 1248	ND		ug/kg	43.4	--	1	A
Aroclor 1254	ND		ug/kg	43.4	--	1	A
Aroclor 1260	ND		ug/kg	43.4	--	1	A
Aroclor 1262	ND		ug/kg	43.4	--	1	A
Aroclor 1268	ND		ug/kg	43.4	--	1	A
PCBs, Total	ND		ug/kg	43.4	--	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	85		30-150	A
Decachlorobiphenyl	96		30-150	A
2,4,5,6-Tetrachloro-m-xylene	82		30-150	B
Decachlorobiphenyl	82		30-150	B

Project Name: E. BOSTON

Lab Number: L1704984

Project Number: 43068

Report Date: 02/21/17

**SAMPLE RESULTS**

Lab ID: L1704984-04  
 Client ID: VES-130 (8-10)  
 Sample Location: E. BOSTON  
 Matrix: Soil  
 Analytical Method: 97,8082A  
 Analytical Date: 02/19/17 20:02  
 Analyst: HT  
 Percent Solids: 68%

Date Collected: 02/16/17 11:55  
 Date Received: 02/16/17  
 Field Prep: Not Specified  
 Extraction Method: EPA 3540C  
 Extraction Date: 02/17/17 04:58  
 Cleanup Method: EPA 3665A  
 Cleanup Date: 02/18/17  
 Cleanup Method: EPA 3660B  
 Cleanup Date: 02/18/17

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
<b>MCP Polychlorinated Biphenyls - Westborough Lab</b>							
Aroclor 1016	ND		ug/kg	48.8	--	1	A
Aroclor 1221	ND		ug/kg	48.8	--	1	A
Aroclor 1232	ND		ug/kg	48.8	--	1	A
Aroclor 1242	ND		ug/kg	48.8	--	1	A
Aroclor 1248	ND		ug/kg	48.8	--	1	A
Aroclor 1254	ND		ug/kg	48.8	--	1	A
Aroclor 1260	ND		ug/kg	48.8	--	1	A
Aroclor 1262	ND		ug/kg	48.8	--	1	A
Aroclor 1268	ND		ug/kg	48.8	--	1	A
PCBs, Total	ND		ug/kg	48.8	--	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	72		30-150	A
Decachlorobiphenyl	79		30-150	A
2,4,5,6-Tetrachloro-m-xylene	75		30-150	B
Decachlorobiphenyl	76		30-150	B

Project Name: E. BOSTON

Lab Number: L1704984

Project Number: 43068

Report Date: 02/21/17

**SAMPLE RESULTS**

Lab ID: L1704984-05  
 Client ID: VES-134 (2-4)  
 Sample Location: E. BOSTON  
 Matrix: Soil  
 Analytical Method: 97,8082A  
 Analytical Date: 02/19/17 20:15  
 Analyst: HT  
 Percent Solids: 74%

Date Collected: 02/16/17 11:00  
 Date Received: 02/16/17  
 Field Prep: Not Specified  
 Extraction Method: EPA 3540C  
 Extraction Date: 02/17/17 04:58  
 Cleanup Method: EPA 3665A  
 Cleanup Date: 02/18/17  
 Cleanup Method: EPA 3660B  
 Cleanup Date: 02/18/17

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
<b>MCP Polychlorinated Biphenyls - Westborough Lab</b>							
Aroclor 1016	ND		ug/kg	44.0	--	1	A
Aroclor 1221	ND		ug/kg	44.0	--	1	A
Aroclor 1232	ND		ug/kg	44.0	--	1	A
Aroclor 1242	ND		ug/kg	44.0	--	1	A
Aroclor 1248	ND		ug/kg	44.0	--	1	A
Aroclor 1254	ND		ug/kg	44.0	--	1	A
Aroclor 1260	ND		ug/kg	44.0	--	1	A
Aroclor 1262	ND		ug/kg	44.0	--	1	A
Aroclor 1268	ND		ug/kg	44.0	--	1	A
PCBs, Total	ND		ug/kg	44.0	--	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	80		30-150	A
Decachlorobiphenyl	79		30-150	A
2,4,5,6-Tetrachloro-m-xylene	81		30-150	B
Decachlorobiphenyl	74		30-150	B

**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704984  
**Report Date:** 02/21/17

**SAMPLE RESULTS**

Lab ID: L1704984-07  
Client ID: VES-136 (3-5)  
Sample Location: E. BOSTON  
Matrix: Soil  
Analytical Method: 97,8082A  
Analytical Date: 02/19/17 20:29  
Analyst: HT  
Percent Solids: 77%

Date Collected: 02/16/17 09:20  
Date Received: 02/16/17  
Field Prep: Not Specified  
Extraction Method: EPA 3540C  
Extraction Date: 02/17/17 04:58  
Cleanup Method: EPA 3665A  
Cleanup Date: 02/18/17  
Cleanup Method: EPA 3660B  
Cleanup Date: 02/18/17

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
<b>MCP Polychlorinated Biphenyls - Westborough Lab</b>							
Aroclor 1016	ND		ug/kg	41.7	--	1	A
Aroclor 1221	ND		ug/kg	41.7	--	1	A
Aroclor 1232	ND		ug/kg	41.7	--	1	A
Aroclor 1242	ND		ug/kg	41.7	--	1	A
Aroclor 1248	ND		ug/kg	41.7	--	1	A
Aroclor 1254	ND		ug/kg	41.7	--	1	A
Aroclor 1260	ND		ug/kg	41.7	--	1	B
Aroclor 1262	ND		ug/kg	41.7	--	1	A
Aroclor 1268	ND		ug/kg	41.7	--	1	A
PCBs, Total	ND		ug/kg	41.7	--	1	B

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	72		30-150	A
Decachlorobiphenyl	64		30-150	A
2,4,5,6-Tetrachloro-m-xylene	80		30-150	B
Decachlorobiphenyl	75		30-150	B

Project Name: E. BOSTON

Lab Number: L1704984

Project Number: 43068

Report Date: 02/21/17

**SAMPLE RESULTS**

Lab ID: L1704984-08  
 Client ID: VES-136 (10-12)  
 Sample Location: E. BOSTON  
 Matrix: Soil  
 Analytical Method: 97,8082A  
 Analytical Date: 02/19/17 20:43  
 Analyst: HT  
 Percent Solids: 78%

Date Collected: 02/16/17 09:25  
 Date Received: 02/16/17  
 Field Prep: Not Specified  
 Extraction Method: EPA 3540C  
 Extraction Date: 02/17/17 04:58  
 Cleanup Method: EPA 3665A  
 Cleanup Date: 02/18/17  
 Cleanup Method: EPA 3660B  
 Cleanup Date: 02/18/17

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
<b>MCP Polychlorinated Biphenyls - Westborough Lab</b>							
Aroclor 1016	ND		ug/kg	41.8	--	1	A
Aroclor 1221	ND		ug/kg	41.8	--	1	A
Aroclor 1232	ND		ug/kg	41.8	--	1	A
Aroclor 1242	ND		ug/kg	41.8	--	1	A
Aroclor 1248	ND		ug/kg	41.8	--	1	A
Aroclor 1254	ND		ug/kg	41.8	--	1	A
Aroclor 1260	ND		ug/kg	41.8	--	1	A
Aroclor 1262	ND		ug/kg	41.8	--	1	A
Aroclor 1268	ND		ug/kg	41.8	--	1	A
PCBs, Total	ND		ug/kg	41.8	--	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	78		30-150	A
Decachlorobiphenyl	61		30-150	A
2,4,5,6-Tetrachloro-m-xylene	78		30-150	B
Decachlorobiphenyl	62		30-150	B

**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704984  
**Report Date:** 02/21/17

**SAMPLE RESULTS**

Lab ID: L1704984-10  
Client ID: VES-107 (2-4)  
Sample Location: E. BOSTON  
Matrix: Soil  
Analytical Method: 97,8082A  
Analytical Date: 02/20/17 03:00  
Analyst: HT  
Percent Solids: 87%

Date Collected: 02/16/17 08:20  
Date Received: 02/16/17  
Field Prep: Not Specified  
Extraction Method: EPA 3540C  
Extraction Date: 02/17/17 04:58  
Cleanup Method: EPA 3665A  
Cleanup Date: 02/18/17  
Cleanup Method: EPA 3660B  
Cleanup Date: 02/18/17

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
<b>MCP Polychlorinated Biphenyls - Westborough Lab</b>							
Aroclor 1016	ND		ug/kg	38.3	--	1	A
Aroclor 1221	ND		ug/kg	38.3	--	1	A
Aroclor 1232	ND		ug/kg	38.3	--	1	A
Aroclor 1242	ND		ug/kg	38.3	--	1	A
Aroclor 1248	ND		ug/kg	38.3	--	1	A
Aroclor 1254	ND		ug/kg	38.3	--	1	A
Aroclor 1260	ND		ug/kg	38.3	--	1	B
Aroclor 1262	ND		ug/kg	38.3	--	1	A
Aroclor 1268	ND		ug/kg	38.3	--	1	B
PCBs, Total	ND		ug/kg	38.3	--	1	B

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	86		30-150	A
Decachlorobiphenyl	75		30-150	A
2,4,5,6-Tetrachloro-m-xylene	85		30-150	B
Decachlorobiphenyl	84		30-150	B

Project Name: E. BOSTON

Lab Number: L1704984

Project Number: 43068

Report Date: 02/21/17

**SAMPLE RESULTS**

Lab ID: L1704984-11  
 Client ID: VES-105 (4-6)  
 Sample Location: E. BOSTON  
 Matrix: Soil  
 Analytical Method: 97,8082A  
 Analytical Date: 02/19/17 23:53  
 Analyst: HT  
 Percent Solids: 74%

Date Collected: 02/16/17 07:40  
 Date Received: 02/16/17  
 Field Prep: Not Specified  
 Extraction Method: EPA 3540C  
 Extraction Date: 02/17/17 04:58  
 Cleanup Method: EPA 3665A  
 Cleanup Date: 02/18/17  
 Cleanup Method: EPA 3660B  
 Cleanup Date: 02/18/17

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
<b>MCP Polychlorinated Biphenyls - Westborough Lab</b>							
Aroclor 1016	ND		ug/kg	42.4	--	1	A
Aroclor 1221	ND		ug/kg	42.4	--	1	A
Aroclor 1232	ND		ug/kg	42.4	--	1	A
Aroclor 1242	ND		ug/kg	42.4	--	1	A
Aroclor 1248	ND		ug/kg	42.4	--	1	A
Aroclor 1254	ND		ug/kg	42.4	--	1	A
Aroclor 1260	ND		ug/kg	42.4	--	1	A
Aroclor 1262	ND		ug/kg	42.4	--	1	A
Aroclor 1268	ND		ug/kg	42.4	--	1	A
PCBs, Total	ND		ug/kg	42.4	--	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	82		30-150	A
Decachlorobiphenyl	98		30-150	A
2,4,5,6-Tetrachloro-m-xylene	73		30-150	B
Decachlorobiphenyl	65		30-150	B

Project Name: E. BOSTON

Lab Number: L1704984

Project Number: 43068

Report Date: 02/21/17

**SAMPLE RESULTS**

Lab ID: L1704984-12 D  
 Client ID: VES-128 (1-2)  
 Sample Location: E. BOSTON  
 Matrix: Soil  
 Analytical Method: 97,8082A  
 Analytical Date: 02/20/17 03:12  
 Analyst: HT  
 Percent Solids: 89%

Date Collected: 02/16/17 12:00  
 Date Received: 02/16/17  
 Field Prep: Not Specified  
 Extraction Method: EPA 3540C  
 Extraction Date: 02/17/17 04:58  
 Cleanup Method: EPA 3665A  
 Cleanup Date: 02/18/17  
 Cleanup Method: EPA 3660B  
 Cleanup Date: 02/18/17

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
<b>MCP Polychlorinated Biphenyls - Westborough Lab</b>							
Aroclor 1016	ND		ug/kg	1790	--	50	A
Aroclor 1221	ND		ug/kg	1790	--	50	A
Aroclor 1232	ND		ug/kg	1790	--	50	A
Aroclor 1242	ND		ug/kg	1790	--	50	A
Aroclor 1248	ND		ug/kg	1790	--	50	A
Aroclor 1254	12300		ug/kg	1790	--	50	A
Aroclor 1260	10800		ug/kg	1790	--	50	B
Aroclor 1262	ND		ug/kg	1790	--	50	A
Aroclor 1268	ND		ug/kg	1790	--	50	A
PCBs, Total	23100		ug/kg	1790	--	50	B

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	0	Q	30-150	A
Decachlorobiphenyl	0	Q	30-150	A
2,4,5,6-Tetrachloro-m-xylene	0	Q	30-150	B
Decachlorobiphenyl	0	Q	30-150	B

**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704984  
**Report Date:** 02/21/17

### Method Blank Analysis Batch Quality Control

Analytical Method: 97,8082A  
Analytical Date: 02/20/17 01:44  
Analyst: HT

Extraction Method: EPA 3540C  
Extraction Date: 02/17/17 04:58  
Cleanup Method: EPA 3665A  
Cleanup Date: 02/18/17  
Cleanup Method: EPA 3660B  
Cleanup Date: 02/18/17

Parameter	Result	Qualifier	Units	RL	MDL	Column
MCP Polychlorinated Biphenyls - Westborough Lab for sample(s): 02-05,07-08,10-12 Batch: WG978634-1						
Aroclor 1016	ND		ug/kg	31.8	--	A
Aroclor 1221	ND		ug/kg	31.8	--	A
Aroclor 1232	ND		ug/kg	31.8	--	A
Aroclor 1242	ND		ug/kg	31.8	--	A
Aroclor 1248	ND		ug/kg	31.8	--	A
Aroclor 1254	ND		ug/kg	31.8	--	A
Aroclor 1260	ND		ug/kg	31.8	--	A
Aroclor 1262	ND		ug/kg	31.8	--	A
Aroclor 1268	ND		ug/kg	31.8	--	A
PCBs, Total	ND		ug/kg	31.8	--	A

Surrogate	%Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	83		30-150	A
Decachlorobiphenyl	94		30-150	A
2,4,5,6-Tetrachloro-m-xylene	75		30-150	B
Decachlorobiphenyl	81		30-150	B

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704984  
**Report Date:** 02/21/17

<b>Parameter</b>	<i>LCS</i> %Recovery	<i>Qual</i>	<i>LCSD</i> %Recovery	<i>Qual</i>	<i>%Recovery</i> <i>Limits</i>	<i>RPD</i>	<i>Qual</i>	<i>RPD</i> <i>Limits</i>	<i>Column</i>
MCP Polychlorinated Biphenyls - Westborough Lab Associated sample(s): 02-05,07-08,10-12 Batch: WG978634-2 WG978634-3									
Aroclor 1016	58		67		40-140	14		30	A
Aroclor 1260	44		58		40-140	27		30	A

<b>Surrogate</b>	<i>LCS</i> %Recovery	<i>Qual</i>	<i>LCSD</i> %Recovery	<i>Qual</i>	<i>Acceptance</i> <i>Criteria</i>	<i>Column</i>
2,4,5,6-Tetrachloro-m-xylene						
Decachlorobiphenyl	77		74		30-150	A
2,4,5,6-Tetrachloro-m-xylene	46		49		30-150	A
Decachlorobiphenyl	80		80		30-150	B
2,4,5,6-Tetrachloro-m-xylene	56		57		30-150	B

# PESTICIDES



**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704984  
**Report Date:** 02/21/17

**SAMPLE RESULTS**

Lab ID: L1704984-01  
Client ID: VES-131 (0-2)  
Sample Location: E. BOSTON  
Matrix: Soil  
Analytical Method: 97,8081B  
Analytical Date: 02/21/17 13:00  
Analyst: DM  
Percent Solids: 88%

Date Collected: 02/16/17 13:10  
Date Received: 02/16/17  
Field Prep: Not Specified  
Extraction Method: EPA 3546  
Extraction Date: 02/17/17 00:18  
Cleanup Method: EPA 3620B  
Cleanup Date: 02/17/17

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
<b>MCP Organochlorine Pesticides - Westborough Lab</b>							
Delta-BHC	ND		ug/kg	8.91	--	1	A
Lindane	ND		ug/kg	2.97	--	1	A
Alpha-BHC	ND		ug/kg	3.71	--	1	A
Beta-BHC	ND		ug/kg	8.91	--	1	A
Heptachlor	ND		ug/kg	4.46	--	1	A
Aldrin	ND		ug/kg	8.91	--	1	A
Heptachlor epoxide	ND		ug/kg	16.7	--	1	A
Endrin	ND		ug/kg	3.71	--	1	A
Endrin ketone	ND		ug/kg	8.91	--	1	A
Dieldrin	ND		ug/kg	5.57	--	1	A
4,4'-DDE	ND		ug/kg	8.91	--	1	A
4,4'-DDD	ND		ug/kg	8.91	--	1	A
4,4'-DDT	ND		ug/kg	16.7	--	1	B
Endosulfan I	ND		ug/kg	8.91	--	1	A
Endosulfan II	ND		ug/kg	8.91	--	1	A
Endosulfan sulfate	ND		ug/kg	3.71	--	1	A
Methoxychlor	ND		ug/kg	16.7	--	1	A
Chlordane	ND		ug/kg	72.4	--	1	A
Hexachlorobenzene	ND		ug/kg	8.91	--	1	A
Toxaphene	ND		ug/kg	167	--	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	75		30-150	B
Decachlorobiphenyl	77		30-150	B
2,4,5,6-Tetrachloro-m-xylene	81		30-150	A
Decachlorobiphenyl	70		30-150	A

**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704984  
**Report Date:** 02/21/17

**SAMPLE RESULTS**

Lab ID: L1704984-06  
Client ID: VES-136 (0-2)  
Sample Location: E. BOSTON  
Matrix: Soil  
Analytical Method: 97,8081B  
Analytical Date: 02/21/17 13:13  
Analyst: DM  
Percent Solids: 88%

Date Collected: 02/16/17 09:15  
Date Received: 02/16/17  
Field Prep: Not Specified  
Extraction Method: EPA 3546  
Extraction Date: 02/17/17 00:18  
Cleanup Method: EPA 3620B  
Cleanup Date: 02/17/17

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
<b>MCP Organochlorine Pesticides - Westborough Lab</b>							
Delta-BHC	ND		ug/kg	8.71	--	1	A
Lindane	ND		ug/kg	2.90	--	1	A
Alpha-BHC	ND		ug/kg	3.63	--	1	A
Beta-BHC	ND		ug/kg	8.71	--	1	A
Heptachlor	ND		ug/kg	4.35	--	1	A
Aldrin	ND		ug/kg	8.71	--	1	A
Heptachlor epoxide	ND		ug/kg	16.3	--	1	A
Endrin	9.42		ug/kg	3.63	--	1	B
Endrin ketone	ND		ug/kg	8.71	--	1	A
Dieldrin	ND		ug/kg	5.44	--	1	A
4,4'-DDE	33.5		ug/kg	8.71	--	1	A
4,4'-DDD	ND		ug/kg	8.71	--	1	A
4,4'-DDT	138	P	ug/kg	16.3	--	1	B
Endosulfan I	ND		ug/kg	8.71	--	1	A
Endosulfan II	ND		ug/kg	8.71	--	1	A
Endosulfan sulfate	ND		ug/kg	3.63	--	1	A
Methoxychlor	ND		ug/kg	16.3	--	1	A
Chlordane	ND		ug/kg	70.8	--	1	A
Hexachlorobenzene	ND		ug/kg	8.71	--	1	A
Toxaphene	ND		ug/kg	163	--	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	75		30-150	B
Decachlorobiphenyl	79		30-150	B
2,4,5,6-Tetrachloro-m-xylene	82		30-150	A
Decachlorobiphenyl	73		30-150	A

**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704984  
**Report Date:** 02/21/17

**SAMPLE RESULTS**

Lab ID: L1704984-09  
Client ID: VES-107 (0-2)  
Sample Location: E. BOSTON  
Matrix: Soil  
Analytical Method: 97,8081B  
Analytical Date: 02/21/17 13:25  
Analyst: DM  
Percent Solids: 91%

Date Collected: 02/16/17 08:15  
Date Received: 02/16/17  
Field Prep: Not Specified  
Extraction Method: EPA 3546  
Extraction Date: 02/17/17 00:18  
Cleanup Method: EPA 3620B  
Cleanup Date: 02/17/17

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
<b>MCP Organochlorine Pesticides - Westborough Lab</b>							
Delta-BHC	ND		ug/kg	8.68	--	1	A
Lindane	ND		ug/kg	2.89	--	1	A
Alpha-BHC	ND		ug/kg	3.62	--	1	A
Beta-BHC	ND		ug/kg	8.68	--	1	A
Heptachlor	ND		ug/kg	4.34	--	1	A
Aldrin	ND		ug/kg	8.68	--	1	A
Heptachlor epoxide	ND		ug/kg	16.3	--	1	A
Endrin	ND		ug/kg	3.62	--	1	A
Endrin ketone	ND		ug/kg	8.68	--	1	A
Dieldrin	ND		ug/kg	5.42	--	1	A
4,4'-DDE	ND		ug/kg	8.68	--	1	A
4,4'-DDD	ND		ug/kg	8.68	--	1	A
4,4'-DDT	ND		ug/kg	16.3	--	1	A
Endosulfan I	ND		ug/kg	8.68	--	1	A
Endosulfan II	ND		ug/kg	8.68	--	1	A
Endosulfan sulfate	ND		ug/kg	3.62	--	1	A
Methoxychlor	ND		ug/kg	16.3	--	1	A
Chlordane	461		ug/kg	70.5	--	1	B
Hexachlorobenzene	ND		ug/kg	8.68	--	1	A
Toxaphene	ND		ug/kg	163	--	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	72		30-150	B
Decachlorobiphenyl	76		30-150	B
2,4,5,6-Tetrachloro-m-xylene	78		30-150	A
Decachlorobiphenyl	68		30-150	A

**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704984  
**Report Date:** 02/21/17

### Method Blank Analysis Batch Quality Control

Analytical Method: 97,8081B  
Analytical Date: 02/19/17 12:46  
Analyst: KEG

Extraction Method: EPA 3546  
Extraction Date: 02/16/17 21:14  
Cleanup Method: EPA 3620B  
Cleanup Date: 02/17/17

Parameter	Result	Qualifier	Units	RL	MDL	Column
MCP Organochlorine Pesticides - Westborough Lab for sample(s): 01,06,09 Batch: WG978590-1						
Delta-BHC	ND		ug/kg	7.84	--	A
Lindane	ND		ug/kg	2.61	--	A
Alpha-BHC	ND		ug/kg	3.27	--	A
Beta-BHC	ND		ug/kg	7.84	--	A
Heptachlor	ND		ug/kg	3.92	--	A
Aldrin	ND		ug/kg	7.84	--	A
Heptachlor epoxide	ND		ug/kg	14.7	--	A
Endrin	ND		ug/kg	3.27	--	A
Endrin ketone	ND		ug/kg	7.84	--	A
Dieldrin	ND		ug/kg	4.90	--	A
4,4'-DDE	ND		ug/kg	7.84	--	A
4,4'-DDD	ND		ug/kg	7.84	--	A
4,4'-DDT	ND		ug/kg	14.7	--	A
Endosulfan I	ND		ug/kg	7.84	--	A
Endosulfan II	ND		ug/kg	7.84	--	A
Endosulfan sulfate	ND		ug/kg	3.27	--	A
Methoxychlor	ND		ug/kg	14.7	--	A
Chlordane	ND		ug/kg	63.7	--	A
Hexachlorobenzene	ND		ug/kg	7.84	--	A
Toxaphene	ND		ug/kg	147	--	A

Surrogate	%Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	78		30-150	B
Decachlorobiphenyl	78		30-150	B
2,4,5,6-Tetrachloro-m-xylene	86		30-150	A
Decachlorobiphenyl	70		30-150	A



# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704984  
**Report Date:** 02/21/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
MCP Organochlorine Pesticides - Westborough Lab Associated sample(s): 01,06,09 Batch: WG978590-2 WG978590-3									
Delta-BHC	84		93		40-140	10		30	A
Lindane	88		94		40-140	7		30	A
Alpha-BHC	97		106		40-140	9		30	A
Beta-BHC	96		100		40-140	4		30	A
Heptachlor	88		99		40-140	12		30	A
Aldrin	99		107		40-140	8		30	A
Heptachlor epoxide	93		103		40-140	10		30	A
Endrin	97		107		40-140	10		30	A
Endrin ketone	88		99		40-140	12		30	A
Dieldrin	100		112		40-140	11		30	A
4,4'-DDE	96		107		40-140	11		30	A
4,4'-DDD	96		105		40-140	9		30	A
4,4'-DDT	96		106		40-140	10		30	A
Endosulfan I	94		103		40-140	9		30	A
Endosulfan II	95		106		40-140	11		30	A
Endosulfan sulfate	73		83		40-140	13		30	A
Methoxychlor	97		108		40-140	11		30	A
Hexachlorobenzene	76		87		40-140	13		30	A

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704984  
**Report Date:** 02/21/17

<b>Parameter</b>	<i>LCS</i> <i>%Recovery</i>	<i>Qual</i>	<i>LCSD</i> <i>%Recovery</i>	<i>Qual</i>	<i>%Recovery</i> <i>Limits</i>	<i>RPD</i>	<i>Qual</i>	<i>RPD</i> <i>Limits</i>
MCP Organochlorine Pesticides - Westborough Lab Associated sample(s): 01,06,09 Batch: WG978590-2 WG978590-3								
<b>Surrogate</b>	<i>LCS</i> <i>%Recovery</i>	<i>Qual</i>	<i>LCSD</i> <i>%Recovery</i>	<i>Qual</i>	<i>Acceptance</i> <i>Criteria</i>			
2,4,5,6-Tetrachloro-m-xylene	80		89		30-150	B		
Decachlorobiphenyl	76		81		30-150	B		
2,4,5,6-Tetrachloro-m-xylene	85		93		30-150	A		
Decachlorobiphenyl	72		75		30-150	A		

## METALS



**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704984  
**Report Date:** 02/21/17

**SAMPLE RESULTS**

Lab ID: L1704984-02 Date Collected: 02/16/17 13:15  
Client ID: VES-131 (3-5) Date Received: 02/16/17  
Sample Location: E. BOSTON Field Prep: Not Specified  
Matrix: Soil  
Percent Solids: 88%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
<b>MCP Total Metals - Mansfield Lab</b>											
Arsenic, Total	3.6		mg/kg	0.44	--	1	02/17/17 20:15	02/20/17 20:27	EPA 3050B	97,6010C	PS
Barium, Total	9.0		mg/kg	0.44	--	1	02/17/17 20:15	02/20/17 20:27	EPA 3050B	97,6010C	PS
Cadmium, Total	ND		mg/kg	0.44	--	1	02/17/17 20:15	02/20/17 20:27	EPA 3050B	97,6010C	PS
Chromium, Total	6.7		mg/kg	0.44	--	1	02/17/17 20:15	02/20/17 20:27	EPA 3050B	97,6010C	PS
Lead, Total	6.4		mg/kg	2.2	--	1	02/17/17 20:15	02/20/17 20:27	EPA 3050B	97,6010C	PS
Mercury, Total	ND		mg/kg	0.077	--	1	02/17/17 10:00	02/18/17 12:27	EPA 7471B	97,7471B	BV
Selenium, Total	ND		mg/kg	2.2	--	1	02/17/17 20:15	02/20/17 20:27	EPA 3050B	97,6010C	PS
Silver, Total	ND		mg/kg	0.44	--	1	02/17/17 20:15	02/20/17 20:27	EPA 3050B	97,6010C	PS



**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704984  
**Report Date:** 02/21/17

**SAMPLE RESULTS**

Lab ID: L1704984-03 Date Collected: 02/16/17 11:50  
Client ID: VES-130 (2-4) Date Received: 02/16/17  
Sample Location: E. BOSTON Field Prep: Not Specified  
Matrix: Soil  
Percent Solids: 75%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
<b>MCP Total Metals - Mansfield Lab</b>											
Arsenic, Total	17		mg/kg	0.52	--	1	02/17/17 20:15	02/20/17 20:31	EPA 3050B	97,6010C	PS
Barium, Total	200		mg/kg	0.52	--	1	02/17/17 20:15	02/20/17 20:31	EPA 3050B	97,6010C	PS
Cadmium, Total	1.8		mg/kg	0.52	--	1	02/17/17 20:15	02/20/17 20:31	EPA 3050B	97,6010C	PS
Chromium, Total	22		mg/kg	0.52	--	1	02/17/17 20:15	02/20/17 20:31	EPA 3050B	97,6010C	PS
Lead, Total	250		mg/kg	2.6	--	1	02/17/17 20:15	02/20/17 20:31	EPA 3050B	97,6010C	PS
Mercury, Total	0.411		mg/kg	0.087	--	1	02/17/17 10:00	02/18/17 12:32	EPA 7471B	97,7471B	BV
Selenium, Total	ND		mg/kg	2.6	--	1	02/17/17 20:15	02/20/17 20:31	EPA 3050B	97,6010C	PS
Silver, Total	ND		mg/kg	0.52	--	1	02/17/17 20:15	02/20/17 20:31	EPA 3050B	97,6010C	PS



**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704984  
**Report Date:** 02/21/17

**SAMPLE RESULTS**

Lab ID: L1704984-04  
Client ID: VES-130 (8-10)  
Sample Location: E. BOSTON  
Matrix: Soil  
Percent Solids: 68%

Date Collected: 02/16/17 11:55  
Date Received: 02/16/17  
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
<b>MCP Total Metals - Mansfield Lab</b>											
Arsenic, Total	10		mg/kg	0.58	--	1	02/17/17 20:15	02/20/17 20:36	EPA 3050B	97,6010C	PS
Barium, Total	36		mg/kg	0.58	--	1	02/17/17 20:15	02/20/17 20:36	EPA 3050B	97,6010C	PS
Cadmium, Total	ND		mg/kg	0.58	--	1	02/17/17 20:15	02/20/17 20:36	EPA 3050B	97,6010C	PS
Chromium, Total	20		mg/kg	0.58	--	1	02/17/17 20:15	02/20/17 20:36	EPA 3050B	97,6010C	PS
Lead, Total	21		mg/kg	2.9	--	1	02/17/17 20:15	02/20/17 20:36	EPA 3050B	97,6010C	PS
Mercury, Total	1.92		mg/kg	0.099	--	1	02/17/17 10:00	02/18/17 12:34	EPA 7471B	97,7471B	BV
Selenium, Total	ND		mg/kg	2.9	--	1	02/17/17 20:15	02/20/17 20:36	EPA 3050B	97,6010C	PS
Silver, Total	ND		mg/kg	0.58	--	1	02/17/17 20:15	02/20/17 20:36	EPA 3050B	97,6010C	PS



**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704984  
**Report Date:** 02/21/17

**SAMPLE RESULTS**

Lab ID: L1704984-05 Date Collected: 02/16/17 11:00  
Client ID: VES-134 (2-4) Date Received: 02/16/17  
Sample Location: E. BOSTON Field Prep: Not Specified  
Matrix: Soil  
Percent Solids: 74%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
<b>MCP Total Metals - Mansfield Lab</b>											
Arsenic, Total	28		mg/kg	0.53	--	1	02/17/17 20:15	02/20/17 21:04	EPA 3050B	97,6010C	PS
Barium, Total	480		mg/kg	0.53	--	1	02/17/17 20:15	02/20/17 21:04	EPA 3050B	97,6010C	PS
Cadmium, Total	16		mg/kg	0.53	--	1	02/17/17 20:15	02/20/17 21:04	EPA 3050B	97,6010C	PS
Chromium, Total	36		mg/kg	0.53	--	1	02/17/17 20:15	02/20/17 21:04	EPA 3050B	97,6010C	PS
Lead, Total	1500		mg/kg	2.6	--	1	02/17/17 20:15	02/20/17 21:04	EPA 3050B	97,6010C	PS
Mercury, Total	2.98		mg/kg	0.090	--	1	02/17/17 10:00	02/18/17 12:36	EPA 7471B	97,7471B	BV
Selenium, Total	ND		mg/kg	2.6	--	1	02/17/17 20:15	02/20/17 21:04	EPA 3050B	97,6010C	PS
Silver, Total	1.5		mg/kg	0.53	--	1	02/17/17 20:15	02/20/17 21:04	EPA 3050B	97,6010C	PS



**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704984  
**Report Date:** 02/21/17

**SAMPLE RESULTS**

Lab ID: L1704984-07 Date Collected: 02/16/17 09:20  
Client ID: VES-136 (3-5) Date Received: 02/16/17  
Sample Location: E. BOSTON Field Prep: Not Specified  
Matrix: Soil  
Percent Solids: 77%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
<b>MCP Total Metals - Mansfield Lab</b>											
Arsenic, Total	6.4		mg/kg	0.51	--	1	02/17/17 20:15	02/20/17 21:09	EPA 3050B	97,6010C	PS
Barium, Total	49		mg/kg	0.51	--	1	02/17/17 20:15	02/20/17 21:09	EPA 3050B	97,6010C	PS
Cadmium, Total	ND		mg/kg	0.51	--	1	02/17/17 20:15	02/20/17 21:09	EPA 3050B	97,6010C	PS
Chromium, Total	12		mg/kg	0.51	--	1	02/17/17 20:15	02/20/17 21:09	EPA 3050B	97,6010C	PS
Lead, Total	97		mg/kg	2.6	--	1	02/17/17 20:15	02/20/17 21:09	EPA 3050B	97,6010C	PS
Mercury, Total	0.502		mg/kg	0.086	--	1	02/17/17 10:00	02/18/17 12:38	EPA 7471B	97,7471B	BV
Selenium, Total	ND		mg/kg	2.6	--	1	02/17/17 20:15	02/20/17 21:09	EPA 3050B	97,6010C	PS
Silver, Total	ND		mg/kg	0.51	--	1	02/17/17 20:15	02/20/17 21:09	EPA 3050B	97,6010C	PS



**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704984  
**Report Date:** 02/21/17

**SAMPLE RESULTS**

Lab ID: L1704984-08  
Client ID: VES-136 (10-12)  
Sample Location: E. BOSTON  
Matrix: Soil  
Percent Solids: 78%

Date Collected: 02/16/17 09:25  
Date Received: 02/16/17  
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
<b>MCP Total Metals - Mansfield Lab</b>											
Arsenic, Total	8.2		mg/kg	0.49	--	1	02/17/17 20:15	02/20/17 21:14	EPA 3050B	97,6010C	PS
Barium, Total	74		mg/kg	0.49	--	1	02/17/17 20:15	02/20/17 21:14	EPA 3050B	97,6010C	PS
Cadmium, Total	ND		mg/kg	0.49	--	1	02/17/17 20:15	02/20/17 21:14	EPA 3050B	97,6010C	PS
Chromium, Total	34		mg/kg	0.49	--	1	02/17/17 20:15	02/20/17 21:14	EPA 3050B	97,6010C	PS
Lead, Total	11		mg/kg	2.5	--	1	02/17/17 20:15	02/20/17 21:14	EPA 3050B	97,6010C	PS
Mercury, Total	ND		mg/kg	0.081	--	1	02/17/17 10:00	02/18/17 12:40	EPA 7471B	97,7471B	BV
Selenium, Total	ND		mg/kg	2.5	--	1	02/17/17 20:15	02/20/17 21:14	EPA 3050B	97,6010C	PS
Silver, Total	ND		mg/kg	0.49	--	1	02/17/17 20:15	02/20/17 21:14	EPA 3050B	97,6010C	PS



**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704984  
**Report Date:** 02/21/17

**SAMPLE RESULTS**

Lab ID: L1704984-10 Date Collected: 02/16/17 08:20  
Client ID: VES-107 (2-4) Date Received: 02/16/17  
Sample Location: E. BOSTON Field Prep: Not Specified  
Matrix: Soil  
Percent Solids: 87%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
<b>MCP Total Metals - Mansfield Lab</b>											
Arsenic, Total	83		mg/kg	0.46	--	1	02/17/17 20:15	02/20/17 21:19	EPA 3050B	97,6010C	PS
Barium, Total	27		mg/kg	0.46	--	1	02/17/17 20:15	02/20/17 21:19	EPA 3050B	97,6010C	PS
Cadmium, Total	ND		mg/kg	0.46	--	1	02/17/17 20:15	02/20/17 21:19	EPA 3050B	97,6010C	PS
Chromium, Total	10		mg/kg	0.46	--	1	02/17/17 20:15	02/20/17 21:19	EPA 3050B	97,6010C	PS
Lead, Total	41		mg/kg	2.3	--	1	02/17/17 20:15	02/20/17 21:19	EPA 3050B	97,6010C	PS
Mercury, Total	0.114		mg/kg	0.072	--	1	02/17/17 10:00	02/18/17 12:41	EPA 7471B	97,7471B	BV
Selenium, Total	ND		mg/kg	2.3	--	1	02/17/17 20:15	02/20/17 21:19	EPA 3050B	97,6010C	PS
Silver, Total	ND		mg/kg	0.46	--	1	02/17/17 20:15	02/20/17 21:19	EPA 3050B	97,6010C	PS



**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704984  
**Report Date:** 02/21/17

**SAMPLE RESULTS**

Lab ID: L1704984-11 Date Collected: 02/16/17 07:40  
Client ID: VES-105 (4-6) Date Received: 02/16/17  
Sample Location: E. BOSTON Field Prep: Not Specified  
Matrix: Soil  
Percent Solids: 74%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
<b>MCP Total Metals - Mansfield Lab</b>											
Arsenic, Total	12		mg/kg	0.54	--	1	02/17/17 20:15	02/20/17 21:23	EPA 3050B	97,6010C	PS
Barium, Total	310		mg/kg	0.54	--	1	02/17/17 20:15	02/20/17 21:23	EPA 3050B	97,6010C	PS
Cadmium, Total	2.2		mg/kg	0.54	--	1	02/17/17 20:15	02/20/17 21:23	EPA 3050B	97,6010C	PS
Chromium, Total	45		mg/kg	0.54	--	1	02/17/17 20:15	02/20/17 21:23	EPA 3050B	97,6010C	PS
Lead, Total	1900		mg/kg	2.7	--	1	02/17/17 20:15	02/20/17 21:23	EPA 3050B	97,6010C	PS
Mercury, Total	1.78		mg/kg	0.092	--	1	02/17/17 10:00	02/18/17 12:43	EPA 7471B	97,7471B	BV
Selenium, Total	ND		mg/kg	2.7	--	1	02/17/17 20:15	02/20/17 21:23	EPA 3050B	97,6010C	PS
Silver, Total	1.3		mg/kg	0.54	--	1	02/17/17 20:15	02/20/17 21:23	EPA 3050B	97,6010C	PS



**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704984  
**Report Date:** 02/21/17

**SAMPLE RESULTS**

Lab ID: L1704984-12 Date Collected: 02/16/17 12:00  
Client ID: VES-128 (1-2) Date Received: 02/16/17  
Sample Location: E. BOSTON Field Prep: Not Specified  
Matrix: Soil  
Percent Solids: 89%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
<b>MCP Total Metals - Mansfield Lab</b>											
Arsenic, Total	20		mg/kg	0.45	--	1	02/17/17 20:15	02/20/17 21:28	EPA 3050B	97,6010C	PS
Barium, Total	250		mg/kg	0.45	--	1	02/17/17 20:15	02/20/17 21:28	EPA 3050B	97,6010C	PS
Cadmium, Total	1.7		mg/kg	0.45	--	1	02/17/17 20:15	02/20/17 21:28	EPA 3050B	97,6010C	PS
Chromium, Total	28		mg/kg	0.45	--	1	02/17/17 20:15	02/20/17 21:28	EPA 3050B	97,6010C	PS
Lead, Total	570		mg/kg	2.2	--	1	02/17/17 20:15	02/20/17 21:28	EPA 3050B	97,6010C	PS
Mercury, Total	1.53		mg/kg	0.073	--	1	02/17/17 10:00	02/18/17 12:45	EPA 7471B	97,7471B	BV
Selenium, Total	ND		mg/kg	2.2	--	1	02/17/17 20:15	02/20/17 21:28	EPA 3050B	97,6010C	PS
Silver, Total	0.68		mg/kg	0.45	--	1	02/17/17 20:15	02/20/17 21:28	EPA 3050B	97,6010C	PS



**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704984  
**Report Date:** 02/21/17

## Method Blank Analysis Batch Quality Control

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
MCP Total Metals - Mansfield Lab for sample(s): 02-05,07-08,10-12 Batch: WG978654-1									
Mercury, Total	ND	mg/kg	0.083	--	1	02/17/17 10:00	02/18/17 12:12	97,7471B	BV

### Prep Information

Digestion Method: EPA 7471B

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
MCP Total Metals - Mansfield Lab for sample(s): 02-05,07-08,10-12 Batch: WG978902-1									
Arsenic, Total	ND	mg/kg	0.40	--	1	02/17/17 20:15	02/20/17 17:37	97,6010C	PS
Barium, Total	ND	mg/kg	0.40	--	1	02/17/17 20:15	02/20/17 17:37	97,6010C	PS
Cadmium, Total	ND	mg/kg	0.40	--	1	02/17/17 20:15	02/20/17 17:37	97,6010C	PS
Chromium, Total	ND	mg/kg	0.40	--	1	02/17/17 20:15	02/20/17 17:37	97,6010C	PS
Lead, Total	ND	mg/kg	2.0	--	1	02/17/17 20:15	02/20/17 17:37	97,6010C	PS
Selenium, Total	ND	mg/kg	2.0	--	1	02/17/17 20:15	02/20/17 17:37	97,6010C	PS
Silver, Total	ND	mg/kg	0.40	--	1	02/17/17 20:15	02/20/17 17:37	97,6010C	PS

### Prep Information

Digestion Method: EPA 3050B

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704984  
**Report Date:** 02/21/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Total Metals - Mansfield Lab Associated sample(s): 02-05,07-08,10-12 Batch: WG978654-2 WG978654-3 SRM Lot Number: D091-540								
Mercury, Total	104		95		72-128	9		30
MCP Total Metals - Mansfield Lab Associated sample(s): 02-05,07-08,10-12 Batch: WG978902-2 WG978902-3 SRM Lot Number: D091-540								
Arsenic, Total	96		83		80-121	15		30
Barium, Total	91		96		84-117	5		30
Cadmium, Total	97		89		83-117	9		30
Chromium, Total	91		84		80-119	8		30
Lead, Total	96		82		82-118	16		30
Selenium, Total	90		84		79-121	7		30
Silver, Total	96		80		76-124	18		30

# **INORGANICS & MISCELLANEOUS**



**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704984  
**Report Date:** 02/21/17

## SAMPLE RESULTS

Lab ID: L1704984-02  
Client ID: VES-131 (3-5)  
Sample Location: E. BOSTON  
Matrix: Soil

Date Collected: 02/16/17 13:15  
Date Received: 02/16/17  
Field Prep: Not Specified

### Test Material Information

Source of Material: Unknown  
Description of Material: Non-Metallic - Damp Soil  
Particle Size: Medium  
Preliminary Burning Time (sec): 120

Parameter	Result	Date Analyzed	Analytical Method	Analyst
Ignitability of Solids - Westborough Lab				
Ignitability	NI	02/17/17 09:35	1,1030	AB



**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704984  
**Report Date:** 02/21/17

## SAMPLE RESULTS

Lab ID: L1704984-03  
Client ID: VES-130 (2-4)  
Sample Location: E. BOSTON  
Matrix: Soil

Date Collected: 02/16/17 11:50  
Date Received: 02/16/17  
Field Prep: Not Specified

### Test Material Information

Source of Material: Unknown  
Description of Material: Non-Metallic - Damp Paste  
Particle Size: Coarse  
Preliminary Burning Time (sec): 120

Parameter	Result	Date Analyzed	Analytical Method	Analyst
Ignitability of Solids - Westborough Lab				
Ignitability	NI	02/17/17 09:35	1,1030	AB



**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704984  
**Report Date:** 02/21/17

## SAMPLE RESULTS

Lab ID: L1704984-04  
Client ID: VES-130 (8-10)  
Sample Location: E. BOSTON  
Matrix: Soil

Date Collected: 02/16/17 11:55  
Date Received: 02/16/17  
Field Prep: Not Specified

### Test Material Information

Source of Material: Unknown  
Description of Material: Non-Metallic - Wet Soil  
Particle Size: Medium  
Preliminary Burning Time (sec): 120

Parameter	Result	Date Analyzed	Analytical Method	Analyst
Ignitability of Solids - Westborough Lab				
Ignitability	NI	02/17/17 13:02	1,1030	AB



**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704984  
**Report Date:** 02/21/17

## SAMPLE RESULTS

Lab ID: L1704984-05  
Client ID: VES-134 (2-4)  
Sample Location: E. BOSTON  
Matrix: Soil

Date Collected: 02/16/17 11:00  
Date Received: 02/16/17  
Field Prep: Not Specified

### Test Material Information

Source of Material: Unknown  
Description of Material: Non-Metallic - Damp Soil  
Particle Size: Medium  
Preliminary Burning Time (sec): 120

Parameter	Result	Date Analyzed	Analytical Method	Analyst
Ignitability of Solids - Westborough Lab				
Ignitability	NI	02/17/17 13:02	1,1030	AB



**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704984  
**Report Date:** 02/21/17

## SAMPLE RESULTS

Lab ID: L1704984-07  
Client ID: VES-136 (3-5)  
Sample Location: E. BOSTON  
Matrix: Soil

Date Collected: 02/16/17 09:20  
Date Received: 02/16/17  
Field Prep: Not Specified

### Test Material Information

Source of Material: Unknown  
Description of Material: Non-Metallic - Damp Soil  
Particle Size: Medium  
Preliminary Burning Time (sec): 120

Parameter	Result	Date Analyzed	Analytical Method	Analyst
Ignitability of Solids - Westborough Lab				
Ignitability	NI	02/17/17 13:02	1,1030	AB



**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704984  
**Report Date:** 02/21/17

## SAMPLE RESULTS

Lab ID: L1704984-08  
Client ID: VES-136 (10-12)  
Sample Location: E. BOSTON  
Matrix: Soil

Date Collected: 02/16/17 09:25  
Date Received: 02/16/17  
Field Prep: Not Specified

### Test Material Information

Source of Material: Unknown  
Description of Material: Non-Metallic - Damp Clay  
Particle Size: Fine  
Preliminary Burning Time (sec): 120

Parameter	Result	Date Analyzed	Analytical Method	Analyst
Ignitability of Solids - Westborough Lab				
Ignitability	NI	02/17/17 13:02	1,1030	AB



**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704984  
**Report Date:** 02/21/17

## SAMPLE RESULTS

Lab ID: L1704984-10  
Client ID: VES-107 (2-4)  
Sample Location: E. BOSTON  
Matrix: Soil

Date Collected: 02/16/17 08:20  
Date Received: 02/16/17  
Field Prep: Not Specified

### Test Material Information

Source of Material: Unknown  
Description of Material: Non-Metallic - Damp Soil  
Particle Size: Medium  
Preliminary Burning Time (sec): 120

Parameter	Result	Date Analyzed	Analytical Method	Analyst
Ignitability of Solids - Westborough Lab				
Ignitability	NI	02/17/17 13:02	1,1030	AB



**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704984  
**Report Date:** 02/21/17

## SAMPLE RESULTS

Lab ID: L1704984-11  
Client ID: VES-105 (4-6)  
Sample Location: E. BOSTON  
Matrix: Soil

Date Collected: 02/16/17 07:40  
Date Received: 02/16/17  
Field Prep: Not Specified

### Test Material Information

Source of Material: Unknown  
Description of Material: Non-Metallic - Damp Soil  
Particle Size: Medium  
Preliminary Burning Time (sec): 120

Parameter	Result	Date Analyzed	Analytical Method	Analyst
Ignitability of Solids - Westborough Lab				
Ignitability	NI	02/17/17 13:02	1,1030	AB



**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704984  
**Report Date:** 02/21/17

## SAMPLE RESULTS

Lab ID: L1704984-12  
Client ID: VES-128 (1-2)  
Sample Location: E. BOSTON  
Matrix: Soil

Date Collected: 02/16/17 12:00  
Date Received: 02/16/17  
Field Prep: Not Specified

### Test Material Information

Source of Material: Unknown  
Description of Material: Non-Metallic - Damp Soil  
Particle Size: Coarse  
Preliminary Burning Time (sec): 120

Parameter	Result	Date Analyzed	Analytical Method	Analyst
Ignitability of Solids - Westborough Lab				
Ignitability	NI	02/17/17 13:02	1,1030	AB



**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704984  
**Report Date:** 02/21/17

### SAMPLE RESULTS

Lab ID: L1704984-01  
Client ID: VES-131 (0-2)  
Sample Location: E. BOSTON  
Matrix: Soil

Date Collected: 02/16/17 13:10  
Date Received: 02/16/17  
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>General Chemistry - Westborough Lab</b>										
Solids, Total	87.5		%	0.100	NA	1	-	02/17/17 13:31	121,2540G	RI



**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704984  
**Report Date:** 02/21/17

### SAMPLE RESULTS

Lab ID: L1704984-02  
Client ID: VES-131 (3-5)  
Sample Location: E. BOSTON  
Matrix: Soil

Date Collected: 02/16/17 13:15  
Date Received: 02/16/17  
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>General Chemistry - Westborough Lab</b>										
Specific Conductance @ 25 C	18		umhos/cm	10	--	1	-	02/17/17 02:59	1,9050A	VB
Solids, Total	88.1	%		0.100	NA	1	-	02/17/17 13:31	121,2540G	RI
pH (H)	7.0	SU		-	NA	1	-	02/17/17 01:24	1,9045D	VB
Cyanide, Reactive	ND		mg/kg	10	--	1	02/18/17 16:35	02/18/17 17:41	1,7.3	RP
Sulfide, Reactive	ND		mg/kg	10	--	1	02/18/17 16:35	02/18/17 17:35	1,7.3	RP



**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704984  
**Report Date:** 02/21/17

### SAMPLE RESULTS

Lab ID: L1704984-03  
Client ID: VES-130 (2-4)  
Sample Location: E. BOSTON  
Matrix: Soil

Date Collected: 02/16/17 11:50  
Date Received: 02/16/17  
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>General Chemistry - Westborough Lab</b>										
Specific Conductance @ 25 C	73		umhos/cm	10	--	1	-	02/17/17 02:59	1,9050A	VB
Solids, Total	75.0	%		0.100	NA	1	-	02/17/17 13:31	121,2540G	RI
pH (H)	7.8	SU		-	NA	1	-	02/17/17 01:24	1,9045D	VB
Cyanide, Reactive	ND		mg/kg	10	--	1	02/18/17 16:35	02/18/17 17:41	1,7.3	RP
Sulfide, Reactive	ND		mg/kg	10	--	1	02/18/17 16:35	02/18/17 17:35	1,7.3	RP



**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704984  
**Report Date:** 02/21/17

### SAMPLE RESULTS

Lab ID: L1704984-04  
Client ID: VES-130 (8-10)  
Sample Location: E. BOSTON  
Matrix: Soil

Date Collected: 02/16/17 11:55  
Date Received: 02/16/17  
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>General Chemistry - Westborough Lab</b>										
Specific Conductance @ 25 C	390		umhos/cm	10	--	1	-	02/17/17 02:59	1,9050A	VB
Solids, Total	68.1	%		0.100	NA	1	-	02/17/17 13:31	121,2540G	RI
pH (H)	7.9	SU		-	NA	1	-	02/17/17 01:24	1,9045D	VB
Cyanide, Reactive	ND		mg/kg	10	--	1	02/18/17 16:35	02/18/17 17:42	1,7.3	RP
Sulfide, Reactive	ND		mg/kg	10	--	1	02/18/17 16:35	02/18/17 17:35	1,7.3	RP



**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704984  
**Report Date:** 02/21/17

### SAMPLE RESULTS

Lab ID: L1704984-05  
Client ID: VES-134 (2-4)  
Sample Location: E. BOSTON  
Matrix: Soil

Date Collected: 02/16/17 11:00  
Date Received: 02/16/17  
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>General Chemistry - Westborough Lab</b>										
Specific Conductance @ 25 C	720		umhos/cm	10	--	1	-	02/17/17 02:59	1,9050A	VB
Solids, Total	73.7	%		0.100	NA	1	-	02/17/17 13:31	121,2540G	RI
pH (H)	7.6	SU		-	NA	1	-	02/17/17 01:24	1,9045D	VB
Cyanide, Reactive	ND		mg/kg	10	--	1	02/18/17 16:35	02/18/17 17:42	1,7.3	RP
Sulfide, Reactive	ND		mg/kg	10	--	1	02/18/17 16:35	02/18/17 17:36	1,7.3	RP



**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704984  
**Report Date:** 02/21/17

### SAMPLE RESULTS

Lab ID: L1704984-06  
Client ID: VES-136 (0-2)  
Sample Location: E. BOSTON  
Matrix: Soil

Date Collected: 02/16/17 09:15  
Date Received: 02/16/17  
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>General Chemistry - Westborough Lab</b>										
Solids, Total	87.7		%	0.100	NA	1	-	02/17/17 13:31	121,2540G	RI



**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704984  
**Report Date:** 02/21/17

### SAMPLE RESULTS

Lab ID: L1704984-07  
Client ID: VES-136 (3-5)  
Sample Location: E. BOSTON  
Matrix: Soil

Date Collected: 02/16/17 09:20  
Date Received: 02/16/17  
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>General Chemistry - Westborough Lab</b>										
Specific Conductance @ 25 C	12		umhos/cm	10	--	1	-	02/17/17 02:59	1,9050A	VB
Solids, Total	76.8	%		0.100	NA	1	-	02/17/17 13:31	121,2540G	RI
pH (H)	6.7	SU		-	NA	1	-	02/17/17 01:24	1,9045D	VB
Cyanide, Reactive	ND		mg/kg	10	--	1	02/18/17 16:35	02/18/17 17:42	1,7.3	RP
Sulfide, Reactive	ND		mg/kg	10	--	1	02/18/17 16:35	02/18/17 17:36	1,7.3	RP



**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704984  
**Report Date:** 02/21/17

### SAMPLE RESULTS

Lab ID: L1704984-08  
Client ID: VES-136 (10-12)  
Sample Location: E. BOSTON  
Matrix: Soil

Date Collected: 02/16/17 09:25  
Date Received: 02/16/17  
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>General Chemistry - Westborough Lab</b>										
Specific Conductance @ 25 C	27		umhos/cm	10	--	1	-	02/17/17 02:59	1,9050A	VB
Solids, Total	77.7	%		0.100	NA	1	-	02/17/17 13:31	121,2540G	RI
pH (H)	6.6	SU		-	NA	1	-	02/17/17 01:24	1,9045D	VB
Cyanide, Reactive	ND		mg/kg	10	--	1	02/18/17 16:35	02/18/17 17:42	1,7.3	RP
Sulfide, Reactive	ND		mg/kg	10	--	1	02/18/17 16:35	02/18/17 17:36	1,7.3	RP



**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704984  
**Report Date:** 02/21/17

### SAMPLE RESULTS

Lab ID: L1704984-09  
Client ID: VES-107 (0-2)  
Sample Location: E. BOSTON  
Matrix: Soil

Date Collected: 02/16/17 08:15  
Date Received: 02/16/17  
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>General Chemistry - Westborough Lab</b>										
Solids, Total	90.6		%	0.100	NA	1	-	02/17/17 13:31	121,2540G	RI



**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704984  
**Report Date:** 02/21/17

### SAMPLE RESULTS

Lab ID: L1704984-10  
Client ID: VES-107 (2-4)  
Sample Location: E. BOSTON  
Matrix: Soil

Date Collected: 02/16/17 08:20  
Date Received: 02/16/17  
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>General Chemistry - Westborough Lab</b>										
Specific Conductance @ 25 C	23		umhos/cm	10	--	1	-	02/17/17 02:59	1,9050A	VB
Solids, Total	86.8	%		0.100	NA	1	-	02/17/17 13:31	121,2540G	RI
pH (H)	7.2	SU		-	NA	1	-	02/17/17 01:24	1,9045D	VB
Cyanide, Reactive	ND		mg/kg	10	--	1	02/18/17 18:45	02/18/17 20:49	1,7.3	RP
Sulfide, Reactive	ND		mg/kg	10	--	1	02/18/17 18:45	02/18/17 20:43	1,7.3	RP



**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704984  
**Report Date:** 02/21/17

### SAMPLE RESULTS

Lab ID: L1704984-11  
Client ID: VES-105 (4-6)  
Sample Location: E. BOSTON  
Matrix: Soil

Date Collected: 02/16/17 07:40  
Date Received: 02/16/17  
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>General Chemistry - Westborough Lab</b>										
Specific Conductance @ 25 C	84		umhos/cm	10	--	1	-	02/17/17 02:59	1,9050A	VB
Solids, Total	74.2	%		0.100	NA	1	-	02/17/17 13:31	121,2540G	RI
pH (H)	7.3	SU		-	NA	1	-	02/17/17 01:24	1,9045D	VB
Cyanide, Reactive	ND		mg/kg	10	--	1	02/18/17 18:45	02/18/17 20:49	1,7.3	RP
Sulfide, Reactive	ND		mg/kg	10	--	1	02/18/17 18:45	02/18/17 20:43	1,7.3	RP



**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704984  
**Report Date:** 02/21/17

### SAMPLE RESULTS

Lab ID: L1704984-12  
Client ID: VES-128 (1-2)  
Sample Location: E. BOSTON  
Matrix: Soil

Date Collected: 02/16/17 12:00  
Date Received: 02/16/17  
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>General Chemistry - Westborough Lab</b>										
Specific Conductance @ 25 C	59		umhos/cm	10	--	1	-	02/17/17 02:59	1,9050A	VB
Solids, Total	88.8	%		0.100	NA	1	-	02/17/17 13:31	121,2540G	RI
pH (H)	7.6	SU		-	NA	1	-	02/17/17 01:24	1,9045D	VB
Cyanide, Reactive	ND		mg/kg	10	--	1	02/18/17 18:45	02/18/17 20:50	1,7.3	RP
Sulfide, Reactive	ND		mg/kg	10	--	1	02/18/17 18:45	02/18/17 20:43	1,7.3	RP



**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704984  
**Report Date:** 02/21/17

**Method Blank Analysis**  
**Batch Quality Control**

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab for sample(s): 02-05,07-08 Batch: WG979086-1									
Sulfide, Reactive	ND	mg/kg	10	--	1	02/18/17 16:35	02/18/17 17:33	1,7.3	RP
General Chemistry - Westborough Lab for sample(s): 02-05,07-08 Batch: WG979087-1									
Cyanide, Reactive	ND	mg/kg	10	--	1	02/18/17 16:35	02/18/17 17:38	1,7.3	RP
General Chemistry - Westborough Lab for sample(s): 10-12 Batch: WG979096-1									
Sulfide, Reactive	ND	mg/kg	10	--	1	02/18/17 18:45	02/18/17 20:40	1,7.3	RP
General Chemistry - Westborough Lab for sample(s): 10-12 Batch: WG979097-1									
Cyanide, Reactive	ND	mg/kg	10	--	1	02/18/17 18:45	02/18/17 20:46	1,7.3	RP



# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704984  
**Report Date:** 02/21/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 02-05,07-08,10-12 Batch: WG978615-1								
pH	101	-	-	-	99-101	-	-	-
General Chemistry - Westborough Lab Associated sample(s): 02-05,07-08,10-12 Batch: WG978620-1								
Specific Conductance	100	-	-	-	99-101	-	-	-
General Chemistry - Westborough Lab Associated sample(s): 02-05,07-08 Batch: WG979086-2								
Sulfide, Reactive	82	-	-	-	60-125	-	-	40
General Chemistry - Westborough Lab Associated sample(s): 02-05,07-08 Batch: WG979087-2								
Cyanide, Reactive	42	-	-	-	30-125	-	-	40
General Chemistry - Westborough Lab Associated sample(s): 10-12 Batch: WG979096-2								
Sulfide, Reactive	102	-	-	-	60-125	-	-	40
General Chemistry - Westborough Lab Associated sample(s): 10-12 Batch: WG979097-2								
Cyanide, Reactive	65	-	-	-	30-125	-	-	40

**Lab Duplicate Analysis**  
Batch Quality Control

**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704984  
**Report Date:** 02/21/17

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 02-05,07-08,10-12 QC Batch ID: WG978620-2 QC Sample: L1704984-02 Client ID: VES-131 (3-5)						
Specific Conductance @ 25 C	18	32	umhos/cm	56	Q	20
General Chemistry - Westborough Lab Associated sample(s): 01-12 QC Batch ID: WG978745-1 QC Sample: L1704984-01 Client ID: VES-131 (0-2)						
Solids, Total	87.5	88.1	%	1		20

**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704984  
**Report Date:** 02/21/17

### Sample Receipt and Container Information

Were project specific reporting limits specified? YES

**Reagent H2O Preserved Vials Frozen on:** 02/16/2017 21:29

#### Cooler Information Custody Seal

##### Cooler

C Absent

#### Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L1704984-01A	Glass 120ml/4oz unpreserved	C	N/A	2.5	Y	Absent	MCP-8081-10(14),TS(7)
L1704984-02A	Vial MeOH preserved	C	N/A	2.5	Y	Absent	VPH-10(28),MCP-8260HLW-10(14)
L1704984-02B	Vial water preserved	C	N/A	2.5	Y	Absent	MCP-8260HLW-10(14)
L1704984-02C	Vial water preserved	C	N/A	2.5	Y	Absent	MCP-8260HLW-10(14)
L1704984-02D	Glass 500ml/16oz unpreserved	C	N/A	2.5	Y	Absent	IGNIT-1030(14),REACTS(14),MCP-8270-10(14),TS(7),MCP-8082-10-3540C(365),PH-9045(1),REACTCN(14),COND-9050(28),EPH-DELUX-10(14)
L1704984-02E	Metals Only - Glass 60mL/2oz unp	C	N/A	2.5	Y	Absent	MCP-CR-6010T-10(180),MCP-AS-6010T-10(180),MCP-7471T-10(28),MCP-CD-6010T-10(180),MCP-AG-6010T-10(180),MCP-SE-6010T-10(180),MCP-BA-6010T-10(180),MCP-PB-6010T-10(180)
L1704984-03A	Vial MeOH preserved	C	N/A	2.5	Y	Absent	VPH-10(28),MCP-8260H-10(14),MCP-8260HLW-10(14)
L1704984-03B	Vial water preserved	C	N/A	2.5	Y	Absent	MCP-8260H-10(14),MCP-8260HLW-10(14)
L1704984-03C	Vial water preserved	C	N/A	2.5	Y	Absent	MCP-8260H-10(14),MCP-8260HLW-10(14)
L1704984-03D	Glass 500ml/16oz unpreserved	C	N/A	2.5	Y	Absent	IGNIT-1030(14),REACTS(14),MCP-8270-10(14),TS(7),MCP-8082-10-3540C(365),PH-9045(1),REACTCN(14),COND-9050(28),EPH-DELUX-10(14)
L1704984-03E	Metals Only - Glass 60mL/2oz unp	C	N/A	2.5	Y	Absent	MCP-CR-6010T-10(180),MCP-AS-6010T-10(180),MCP-7471T-10(28),MCP-CD-6010T-10(180),MCP-AG-6010T-10(180),MCP-SE-6010T-10(180),MCP-BA-6010T-10(180),MCP-PB-6010T-10(180)

\*Values in parentheses indicate holding time in days

**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704984  
**Report Date:** 02/21/17

**Container Information**

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L1704984-04A	Vial MeOH preserved	C	N/A	2.5	Y	Absent	VPH-10(28),MCP-8260HLW-10(14)
L1704984-04B	Vial water preserved	C	N/A	2.5	Y	Absent	MCP-8260HLW-10(14)
L1704984-04C	Vial water preserved	C	N/A	2.5	Y	Absent	MCP-8260HLW-10(14)
L1704984-04D	Glass 500ml/16oz unpreserved	C	N/A	2.5	Y	Absent	IGNIT-1030(14),REACTS(14),MCP-8270-10(14),TS(7),MCP-8082-10-3540C(365),PH-9045(1),REACTCN(14),COND-9050(28),EPH-DELUX-10(14)
L1704984-04E	Metals Only - Glass 60mL/2oz unp	C	N/A	2.5	Y	Absent	MCP-CR-6010T-10(180),MCP-AS-6010T-10(180),MCP-7471T-10(28),MCP-CD-6010T-10(180),MCP-AG-6010T-10(180),MCP-SE-6010T-10(180),MCP-BA-6010T-10(180),MCP-PB-6010T-10(180)
L1704984-05A	Vial MeOH preserved	C	N/A	2.5	Y	Absent	VPH-10(28),MCP-8260HLW-10(14)
L1704984-05B	Vial water preserved	C	N/A	2.5	Y	Absent	MCP-8260HLW-10(14)
L1704984-05C	Vial water preserved	C	N/A	2.5	Y	Absent	MCP-8260HLW-10(14)
L1704984-05D	Glass 500ml/16oz unpreserved	C	N/A	2.5	Y	Absent	IGNIT-1030(14),REACTS(14),MCP-8270-10(14),TS(7),MCP-8082-10-3540C(365),PH-9045(1),REACTCN(14),COND-9050(28),EPH-DELUX-10(14)
L1704984-05E	Metals Only - Glass 60mL/2oz unp	C	N/A	2.5	Y	Absent	MCP-CR-6010T-10(180),MCP-AS-6010T-10(180),MCP-7471T-10(28),MCP-CD-6010T-10(180),MCP-AG-6010T-10(180),MCP-SE-6010T-10(180),MCP-BA-6010T-10(180),MCP-PB-6010T-10(180)
L1704984-06A	Glass 120ml/4oz unpreserved	C	N/A	2.5	Y	Absent	MCP-8081-10(14),TS(7)
L1704984-07A	Vial MeOH preserved	C	N/A	2.5	Y	Absent	VPH-10(28),MCP-8260HLW-10(14)
L1704984-07B	Vial water preserved	C	N/A	2.5	Y	Absent	MCP-8260HLW-10(14)
L1704984-07C	Vial water preserved	C	N/A	2.5	Y	Absent	MCP-8260HLW-10(14)
L1704984-07D	Glass 500ml/16oz unpreserved	C	N/A	2.5	Y	Absent	IGNIT-1030(14),REACTS(14),MCP-8270-10(14),TS(7),MCP-8082-10-3540C(365),PH-9045(1),REACTCN(14),COND-9050(28),EPH-DELUX-10(14)

\*Values in parentheses indicate holding time in days

**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704984  
**Report Date:** 02/21/17

**Container Information**

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L1704984-07E	Metals Only - Glass 60mL/2oz unp	C	N/A	2.5	Y	Absent	MCP-CR-6010T-10(180),MCP-AS-6010T-10(180),MCP-7471T-10(28),MCP-CD-6010T-10(180),MCP-AG-6010T-10(180),MCP-SE-6010T-10(180),MCP-BA-6010T-10(180),MCP-PB-6010T-10(180)
L1704984-08A	Vial MeOH preserved	C	N/A	2.5	Y	Absent	VPH-10(28),MCP-8260HLW-10(14)
L1704984-08B	Vial water preserved	C	N/A	2.5	Y	Absent	MCP-8260HLW-10(14)
L1704984-08C	Vial water preserved	C	N/A	2.5	Y	Absent	MCP-8260HLW-10(14)
L1704984-08D	Glass 500ml/16oz unpreserved	C	N/A	2.5	Y	Absent	IGNIT-1030(14),REACTS(14),MCP-8270-10(14),TS(7),MCP-8082-10-3540C(365),PH-9045(1),REACTCN(14),COND-9050(28),EPH-DELUX-10(14)
L1704984-08E	Metals Only - Glass 60mL/2oz unp	C	N/A	2.5	Y	Absent	MCP-CR-6010T-10(180),MCP-AS-6010T-10(180),MCP-7471T-10(28),MCP-CD-6010T-10(180),MCP-AG-6010T-10(180),MCP-SE-6010T-10(180),MCP-BA-6010T-10(180),MCP-PB-6010T-10(180)
L1704984-09A	Glass 120ml/4oz unpreserved	C	N/A	2.5	Y	Absent	MCP-8081-10(14),TS(7)
L1704984-10A	Vial MeOH preserved	C	N/A	2.5	Y	Absent	VPH-10(28),MCP-8260HLW-10(14)
L1704984-10B	Vial water preserved	C	N/A	2.5	Y	Absent	MCP-8260HLW-10(14)
L1704984-10C	Vial water preserved	C	N/A	2.5	Y	Absent	MCP-8260HLW-10(14)
L1704984-10D	Glass 500ml/16oz unpreserved	C	N/A	2.5	Y	Absent	IGNIT-1030(14),REACTS(14),MCP-8270-10(14),TS(7),MCP-8082-10-3540C(365),PH-9045(1),REACTCN(14),COND-9050(28),EPH-DELUX-10(14)
L1704984-10E	Metals Only - Glass 60mL/2oz unp	C	N/A	2.5	Y	Absent	MCP-CR-6010T-10(180),MCP-AS-6010T-10(180),MCP-7471T-10(28),MCP-CD-6010T-10(180),MCP-AG-6010T-10(180),MCP-SE-6010T-10(180),MCP-BA-6010T-10(180),MCP-PB-6010T-10(180)
L1704984-11A	Vial MeOH preserved	C	N/A	2.5	Y	Absent	VPH-10(28),MCP-8260HLW-10(14)
L1704984-11B	Vial water preserved	C	N/A	2.5	Y	Absent	MCP-8260HLW-10(14)
L1704984-11C	Vial water preserved	C	N/A	2.5	Y	Absent	MCP-8260HLW-10(14)

\*Values in parentheses indicate holding time in days

**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704984  
**Report Date:** 02/21/17

**Container Information**

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L1704984-11D	Glass 500ml/16oz unpreserved	C	N/A	2.5	Y	Absent	IGNIT-1030(14),REACTS(14),MCP-8270-10(14),TS(7),MCP-8082-10-3540C(365),PH-9045(1),REACTCN(14),COND-9050(28),EPH-DELUX-10(14)
L1704984-11E	Metals Only - Glass 60mL/2oz unp	C	N/A	2.5	Y	Absent	MCP-CR-6010T-10(180),MCP-AS-6010T-10(180),MCP-7471T-10(28),MCP-CD-6010T-10(180),MCP-AG-6010T-10(180),MCP-SE-6010T-10(180),MCP-BA-6010T-10(180),MCP-PB-6010T-10(180)
L1704984-12A	Vial MeOH preserved	C	N/A	2.5	Y	Absent	VPH-10(28),MCP-8260HLW-10(14)
L1704984-12B	Vial water preserved	C	N/A	2.5	Y	Absent	MCP-8260HLW-10(14)
L1704984-12C	Vial water preserved	C	N/A	2.5	Y	Absent	MCP-8260HLW-10(14)
L1704984-12D	Glass 500ml/16oz unpreserved	C	N/A	2.5	Y	Absent	IGNIT-1030(14),REACTS(14),MCP-8270-10(14),TS(7),MCP-8082-10-3540C(365),PH-9045(1),REACTCN(14),COND-9050(28),EPH-DELUX-10(14)
L1704984-12E	Metals Only - Glass 60mL/2oz unp	C	N/A	2.5	Y	Absent	MCP-CR-6010T-10(180),MCP-AS-6010T-10(180),MCP-7471T-10(28),MCP-CD-6010T-10(180),MCP-AG-6010T-10(180),MCP-SE-6010T-10(180),MCP-BA-6010T-10(180),MCP-PB-6010T-10(180)

\*Values in parentheses indicate holding time in days

**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704984  
**Report Date:** 02/21/17

## GLOSSARY

### **Acronyms**

EDL	- Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).
EPA	- Environmental Protection Agency.
LCS	- Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCSD	- Laboratory Control Sample Duplicate: Refer to LCS.
LFB	- Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
MDL	- Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
MS	- Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available.
MSD	- Matrix Spike Sample Duplicate: Refer to MS.
NA	- Not Applicable.
NC	- Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
NDPA/DPA	- N-Nitrosodiphenylamine/Diphenylamine.
NI	- Not Ignitable.
NP	- Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.
RL	- Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
RPD	- Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.
SRM	- Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.
STLP	- Semi-dynamic Tank Leaching Procedure per EPA Method 1315.
TIC	- Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

### **Footnotes**

- 1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

### **Terms**

**Total:** With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

**Analytical Method:** Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

### **Data Qualifiers**

- A** - Spectra identified as "Aldol Condensation Product".
- B** - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the

**Report Format:** Data Usability Report



**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704984  
**Report Date:** 02/21/17

**Data Qualifiers**

reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

- C** - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.
- D** - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.
- E** - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.
- G** - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.
- H** - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.
- I** - The lower value for the two columns has been reported due to obvious interference.
- M** - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.
- NJ** - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.
- P** - The RPD between the results for the two columns exceeds the method-specified criteria.
- Q** - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)
- R** - Analytical results are from sample re-analysis.
- RE** - Analytical results are from sample re-extraction.
- S** - Analytical results are from modified screening analysis.
- J** - Estimated value. This represents an estimated concentration for Tentatively Identified Compounds (TICs).
- ND** - Not detected at the reporting limit (RL) for the sample.

*Report Format:* Data Usability Report



**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1704984  
**Report Date:** 02/21/17

## REFERENCES

- 1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - IV, 2007.
- 97 EPA Test Methods (SW-846) with QC Requirements & Performance Standards for the Analysis of EPA SW-846 Methods under the Massachusetts Contingency Plan, WSC-CAM-IIA, IIB, IIIA, IIIB, IIIC, IID, VA, VB, VC, VIA, VIB, VIIIA and VIIIB, July 2010.
- 98 Method for the Determination of Extractable Petroleum Hydrocarbons (EPH), MassDEP, May 2004, Revision 1.1 with QC Requirements & Performance Standards for the Analysis of EPH under the Massachusetts Contingency Plan, WSC-CAM-IVB, July 2010.
- 100 Method for the Determination of Volatile Petroleum Hydrocarbons (VPH), MassDEP, May 2004, Revision 1.1 with QC Requirements & Performance Standards for the Analysis of VPH under the Massachusetts Contingency Plan, WSC-CAM-IVA, July 2010.
- 121 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. Standard Methods Online.

## LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at its own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.



## Certification Information

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**The following analytes are not included in our Primary NELAP Scope of Accreditation:**

**Westborough Facility**

EPA 624: m/p-xylene, o-xylene  
EPA 8260C: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), Methyl methacrylate, 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.  
EPA 8270D: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.  
EPA 300: DW: Bromide  
EPA 6860: NPW and SCM: Perchlorate  
EPA 9010: NPW and SCM: Amenable Cyanide Distillation  
EPA 9012B: NPW: Total Cyanide  
EPA 9050A: NPW: Specific Conductance  
SM3500: NPW: Ferrous Iron  
SM4500: NPW: Amenable Cyanide, Dissolved Oxygen; SCM: Total Phosphorus, TKN, NO<sub>2</sub>, NO<sub>3</sub>.  
SM5310C: DW: Dissolved Organic Carbon

**Mansfield Facility**

SM 2540D: TSS  
EPA 3005A NPW  
EPA 8082A: NPW: PCB: 1, 5, 31, 87, 101, 110, 141, 151, 153, 180, 183, 187.  
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.  
Biological Tissue Matrix: EPA 3050B

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**The following analytes are included in our Massachusetts DEP Scope of Accreditation**

**Westborough Facility:**

**Drinking Water**

EPA 300.0: Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C**, **SM4500CN-CE**, **EPA 180.1**, **SM2130B**, **SM4500CI-D**, **SM2320B**, **SM2540C**, **SM4500H-B**  
EPA 332: Perchlorate; **EPA 524.2**: THMs and VOCs; **EPA 504.1**: EDB, DBCP.  
Microbiology: **SM9215B**; **SM9223-P/A**, **SM9223B-Colilert-QT**,**SM9222D**.

**Non-Potable Water**

**SM4500H,B**, **EPA 120.1**, **SM2510B**, **SM2540C**, **SM2320B**, **SM4500CL-E**, **SM4500F-BC**, **SM4500NH3-BH**, **EPA 350.1**: Ammonia-N, LACHAT 10-107-06-1-B: Ammonia-N, **SM4500NO3-F**, **EPA 353.2**: Nitrate-N, **EPA 351.1**, **SM4500P-E**, **SM4500P-B**, **E**, **SM4500SO4-E**, **SM5220D**, **EPA 410.4**, **SM5210B**, **SM5310C**, **SM4500CL-D**, **EPA 1664**, **EPA 420.1**, **SM4500-CN-CE**, **SM2540D**.  
**EPA 624**: Volatile Halocarbons & Aromatics,  
**EPA 608**: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs  
**EPA 625**: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045**: PCB-Oil.  
Microbiology: **SM9223B-Colilert-QT**; **Enterolert-QT**, **SM9221E**.

**Mansfield Facility:**

**Drinking Water**

**EPA 200.7**: Ba, Be, Cd, Cr, Cu, Ni, Na, Ca. **EPA 200.8**: Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Ni, Se, TL. **EPA 245.1 Hg**.

**Non-Potable Water**

**EPA 200.7**: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.  
**EPA 200.8**: Al, Sb, As, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn.  
**EPA 245.1 Hg**.  
**SM2340B**

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For a complete listing of analytes and methods, please contact your Alpha Project Manager.



8 Walkup Drive  
Westboro, MA 01581  
Tel: 508-822-9220

# CHAIN OF CUSTODY

PAGE 1 OF 2

320 Forbes Blvd  
Mansfield, MA 02048  
Tel: 508-822-9300

## Client Information

Client: VERTEX

Address: One Congress st, 10th fl  
Boston, MA

Phone: 781-974-7595

Email: b5.voncra@vertexeng.com

## Additional Project Information:

### Project Information

Project Name: E. Boston

Project Location: E. Boston

Project #: 43068

Project Manager: B. Gibbons

ALPHA Quote #:

### Turn-Around Time

Standard  RUSH (only confirmed if pre-approved)

Date Due: 72 - Hour

Date Rec'd in Lab: 02/16/17

ALPHA Job #: L1704984

### Report Information - Data Deliverables

ADEX  EMAIL

### Billing Information

Same as Client info PO #:

### Regulatory Requirements & Project Information Requirements

- Yes  No MA MCP Analytical Methods  Yes  No CT RCP Analytical Methods  
 Yes  No Matrix Spike Required on this SDG? (Required for MCP Inorganics)  
 Yes  No GW1 Standards (Info Required for Metals & EPH with Targets)  
 Yes  No NPDES RGP  
 Other State /Fed Program Criteria

ANALYSIS	SAMPLE INFO										TOTAL #
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<input type="checkbox"/>	<input type="checkbox"/>										





## CHAIN OF CUSTODY

PAGE 2 OF 2

8 Walkup Drive  
Westboro, MA 01581  
Tel: 508-898-9220

320 Forbes Blvd  
Mansfield, MA 02048  
Tel: 508-822-9300

## Client Information

Client: VERTEX

Address: one Congress St, 10th Flr  
Boston MA

Phone: 781-974-7595

Email: b51vonen@vertexeng.com

Additional Project Information:

## Project Information

Project Name: E. Boston

Project Location: E. Boston

Project #: 43068

Project Manager: D. Gibbons

ALPHA Quote #:

## Turn-Around Time

 Standard RUSH (only confirmed if pre-approved)

Date Due:

72-hour

Date Rec'd in Lab: 02/16/17

ALPHA Job #: L1704984

## Report Information - Data Deliverables

 ADEX  EMAIL

## Billing Information

 Same as Client info PO #:

## Regulatory Requirements &amp; Project Information Requirements

- Yes  No MA MCP Analytical Methods       Yes  No CT RCP Analytical Methods
- Yes  No Matrix Spike Required on this SDG? (Required for MCP Inorganics)
- Yes  No GW1 Standards (Info Required for Metals & EPH with Targets)
- Yes  No NPDES RGP
- Other State/Fed Program \_\_\_\_\_ Criteria \_\_\_\_\_

ANALYSIS	<input checked="" type="checkbox"/> VOC: 6260	<input type="checkbox"/> 624	<input type="checkbox"/> 524.2	<input type="checkbox"/> PAH	<input checked="" type="checkbox"/> PCB 15	<input type="checkbox"/> RCP 15	<input type="checkbox"/> PPT 13	<input type="checkbox"/> Ranges Only	<input type="checkbox"/> Ranges Only	<input type="checkbox"/> Ranges Only	<input type="checkbox"/> Fingerprint	<input type="checkbox"/> Charides/Sulfide Record	<input type="checkbox"/> Ionization Record
	<input type="checkbox"/> SVOC: ABN	<input type="checkbox"/> METALS: MCP 13	<input type="checkbox"/> MCP 14	<input type="checkbox"/> RCR45	<input checked="" type="checkbox"/> RCR48	<input type="checkbox"/> Ranges & Targets	<input type="checkbox"/> Ranges Only	<input type="checkbox"/> Ranges Only	<input type="checkbox"/> Ranges Only	<input type="checkbox"/> PEST	<input type="checkbox"/> Quant Only	<input type="checkbox"/> Charides/Sulfide Record	<input type="checkbox"/> Ionization Record
SAMPLE INFO													
Filtration	<input type="checkbox"/> Field	<input type="checkbox"/> Lab to do											
Preservation	<input type="checkbox"/> Lab to do												
Sample Comments													

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection		Sample Matrix	Sampler Initials
		Date	Time		
04084-11	VES-105 (4-6)	2/16	7:40	S	BS
12	VES-128 (1-2)	2/16	1200	S	KS

Container Type  
 P= Plastic  
 A= Amber glass  
 V= Vial  
 G= Glass  
 B= Bacteria cup  
 C= Cube  
 O= Other  
 E= Encore  
 D= BOD Bottle

Preservative  
 A= None  
 B= HCl  
 C= HNO<sub>3</sub>  
 D= H<sub>2</sub>SO<sub>4</sub>  
 E= NaOH  
 F= MeOH  
 G= NaHSO<sub>4</sub>  
 H= Na<sub>2</sub>SO<sub>3</sub>  
 I= Ascorbic Acid  
 J= NH<sub>4</sub>Cl  
 K= Zn Acetate  
 O= Other

Container Type

Preservative

V A A A V A A

A A

A A

**Method Blank Summary  
Form 4**

Client	: Vertex Environmental Services, Inc.	Lab Number	: L1704984
Project Name	: E. BOSTON	Project Number	: 43068
Lab Sample ID	: WG978923-5	Lab File ID	: V10170217A06
Instrument ID	: VOA110		
Matrix	: SOIL	Analysis Date	: 02/17/17 10:44

Client Sample No.	Lab Sample ID	Analysis Date
WG978923-3LCS	WG978923-3	02/17/17 09:26
WG978923-4LCSD	WG978923-4	02/17/17 09:52
VES-131 (3-5)	L1704984-02	02/17/17 16:22
VES-130 (2-4)	L1704984-03	02/17/17 16:48
VES-130 (8-10)	L1704984-04	02/17/17 17:14
VES-134 (2-4)	L1704984-05	02/17/17 17:40
VES-136 (3-5)	L1704984-07	02/17/17 18:06
VES-136 (10-12)	L1704984-08	02/17/17 18:32
VES-107 (2-4)	L1704984-10	02/17/17 18:58
VES-105 (4-6)	L1704984-11	02/17/17 19:23
VES-128 (1-2)	L1704984-12	02/17/17 19:49

## Method Blank Summary Form 4

Client : Vertex Environmental Services, Inc.      Lab Number : L1704984  
Project Name : E. BOSTON      Project Number : 43068  
Lab Sample ID : WG979473-5      Lab File ID : V10170220A05  
Instrument ID : VOA110  
Matrix : SOIL      Analysis Date : 02/20/17 09:18

Client Sample No.	Lab Sample ID	Analysis Date
WG979473-3LCS	WG979473-3	02/20/17 07:35
WG979473-4LCSD	WG979473-4	02/20/17 08:01
VES-130 (2-4)	L1704984-03	02/20/17 14:29

**Continuing Calibration  
Form 7**

Client	: Vertex Environmental Services, Inc.	Lab Number	: L1704984
Project Name	: E. BOSTON	Project Number	: 43068
Instrument ID	: VOA110	Calibration Date	: 02/17/17 09:26
Lab File ID	: V10170217A03	Init. Calib. Date(s)	: 01/12/17
Sample No	: WG978923-2	Init. Calib. Times	: 17:59 01/12/17 20:57
Channel	:		

Compound	Ave. RRF	RRF	Min RRF	%D	Max %D	Area%	Dev(min)
Fluorobenzene	1	1	-	0	20	91	0
Dichlorodifluoromethane	0.34	0.364	-	-7.1	20	96	0
Chloromethane	0.226	0.256	-	-13.3	20	102	0
Vinyl chloride	0.299	0.334	-	-11.7	20	99	0
Bromomethane	0.249	0.274	-	-10	20	100	0
Chloroethane	0.196	0.237	-	-20.9*	20	109	-.01
Trichlorofluoromethane	0.513	0.657	-	-28.1*	20	111	-.01
Ethyl ether	0.162	0.144	-	11.1	20	79	0
1,1-Dichloroethene	0.22	0.22	-	0	20	93	0
Carbon disulfide	0.765	0.996	-	-30.2*	20	126	0
Freon-113	0.211	0.232	-	-10	20	96	0
Acrolein	0.022	0.015	-	31.8*	20	74	0
Methylene chloride	0.268	0.304	-	-13.4	20	108	0
Acetone	20	20.231	-	-1.2	20	90	0
trans-1,2-Dichloroethene	0.24	0.246	-	-2.5	20	94	0
Methyl acetate	0.116	0.103	-	11.2	20	86	0
Methyl tert-butyl ether	0.64	0.646	-	-0.9	20	95	0
tert-Butyl alcohol	100	102.579	-	-2.6	20	106	0
Diisopropyl ether	0.614	0.615	-	-0.2	20	93	0
1,1-Dichloroethane	0.408	0.459	-	-12.5	20	101	0
Halothane	0.147	0.167	-	-13.6	20	100	0
Acrylonitrile	20	17.245	-	13.8	20	81	0
Ethyl tert-butyl ether	0.581	0.584	-	-0.5	20	94	0
Vinyl acetate	20	18.448	-	7.8	20	96	0
cis-1,2-Dichloroethene	0.253	0.267	-	-5.5	20	95	0
2,2-Dichloropropane	0.342	0.399	-	-16.7	20	109	0
Bromochloromethane	0.115	0.128	-	-11.3	20	97	0
Cyclohexane	0.298	0.329	-	-10.4	20	96	0
Chloroform	0.447	0.51	-	-14.1	20	101	0
Ethyl acetate	20	17.301	-	13.5	20	88	0
Carbon tetrachloride	0.309	0.364	-	-17.8	20	105	0
Tetrahydrofuran	20	21.014	-	-5.1	20	88	0
Dibromofluoromethane	0.252	0.271	-	-7.5	20	99	0
1,1,1-Trichloroethane	0.389	0.452	-	-16.2	20	104	0
2-Butanone	20	17.267	-	13.7	20	85	0
1,1-Dichloropropene	0.3	0.327	-	-9	20	97	0
Benzene	0.947	1.06	-	-11.9	20	100	0
tert-Amyl methyl ether	20	18.047	-	9.8	20	96	0
1,2-Dichloroethane-d4	0.283	0.313	-	-10.6	20	103	0
1,2-Dichloroethane	0.32	0.37	-	-15.6	20	102	0
Methyl cyclohexane	0.342	0.361	-	-5.6	20	95	0
Trichloroethene	0.256	0.291	-	-13.7	20	102	0
Dibromomethane	0.134	0.15	-	-11.9	20	101	0
1,2-Dichloropropane	0.207	0.228	-	-10.1	20	99	0
2-Chloroethyl vinyl ether	20	16.806	-	16	20	94	0

\* Value outside of QC limits.



**Continuing Calibration  
Form 7**

Client	: Vertex Environmental Services, Inc.	Lab Number	: L1704984		
Project Name	: E. BOSTON	Project Number	: 43068		
Instrument ID	: VOA110	Calibration Date	: 02/17/17 09:26		
Lab File ID	: V10170217A03	Init. Calib. Date(s)	: 01/12/17		01/12/17
Sample No	: WG978923-2	Init. Calib. Times	: 17:59		20:57
Channel	:				

Compound	Ave. RRF	RRF	Min RRF	%D	Max %D	Area%	Dev(min)
Bromodichloromethane	0.313	0.359	-	-14.7	20	105	0
1,4-Dioxane	0.00199	0.00189	-	5	20	95	0
cis-1,3-Dichloropropene	20	21.329	-	-6.6	20	113	0
Chlorobenzene-d5	1	1	-	0	20	106	0
Toluene-d8	1.21	1.295	-	-7	20	109	0
Toluene	0.82	0.913	-	-11.3	20	115	0
4-Methyl-2-pentanone	20	16.446	-	17.8	20	102	0
Tetrachloroethene	0.352	0.377	-	-7.1	20	109	0
trans-1,3-Dichloropropene	20	19.493	-	2.5	20	116	0
Ethyl methacrylate	20	15.013	-	24.9*	20	104	0
1,1,2-Trichloroethane	0.234	0.277	-	-18.4	20	118	0
Chlorodibromomethane	20	20.279	-	-1.4	20	119	0
1,3-Dichloropropane	0.463	0.517	-	-11.7	20	113	0
1,2-Dibromoethane	20	20.685	-	-3.4	20	113	0
2-Hexanone	20	14.105	-	29.5*	20	86	0
Chlorobenzene	0.89	0.966	-	-8.5	20	112	0
Ethylbenzene	1.52	1.693	-	-11.4	20	113	0
1,1,1,2-Tetrachloroethane	0.313	0.355	-	-13.4	20	118	0
p/m Xylene	0.584	0.664	-	-13.7	20	115	0
o Xylene	40	40.219	-	-0.5	20	111	0
Styrene	40	39.434	-	1.4	20	112	0
1,4-Dichlorobenzene-d4	1	1	-	0	20	110	0
Bromoform	20	17.83	-	10.9	20	120	0
Isopropylbenzene	20	18.886	-	5.6	20	109	0
4-Bromofluorobenzene	0.869	0.851	-	2.1	20	108	0
Bromobenzene	0.751	0.736	-	2	20	106	0
n-Propylbenzene	3.525	3.832	-	-8.7	20	115	0
1,4-Dichlorobutane	0.802	0.893	-	-11.3	20	119	0
1,1,2,2-Tetrachloroethane	0.689	0.772	-	-12	20	119	0
4-Ethyltoluene	2.761	3.017	-	-9.3	20	115	0
2-Chlorotoluene	2.16	2.37	-	-9.7	20	118	0
1,3,5-Trimethylbenzene	2.416	2.681	-	-11	20	114	0
1,2,3-Trichloropropane	0.558	0.613	-	-9.9	20	119	0
trans-1,4-Dichloro-2-butene	0.166	0.163	-	1.8	20	111	0
4-Chlorotoluene	2.103	2.297	-	-9.2	20	116	0
tert-Butylbenzene	2.001	2.082	-	-4	20	110	0
1,2,4-Trimethylbenzene	20	20.26	-	-1.3	20	114	0
sec-Butylbenzene	3.049	3.324	-	-9	20	113	0
p-Isopropyltoluene	20	19.585	-	2.1	20	112	0
1,3-Dichlorobenzene	1.481	1.535	-	-3.6	20	111	0
1,4-Dichlorobenzene	1.526	1.587	-	-4	20	112	0
p-Diethylbenzene	20	18.844	-	5.8	20	110	0
n-Butylbenzene	2.476	2.869	-	-15.9	20	120	0
1,2-Dichlorobenzene	1.363	1.422	-	-4.3	20	113	0
1,2,4,5-Tetramethylbenzene	20	16.343	-	18.3	20	103	0

\* Value outside of QC limits.



# Continuing Calibration

## Form 7

Client : Vertex Environmental Services, Inc.      Lab Number : L1704984  
 Project Name : E. BOSTON      Project Number : 43068  
 Instrument ID : VOA110      Calibration Date : 02/17/17 09:26  
 Lab File ID : V10170217A03      Init. Calib. Date(s) : 01/12/17      01/12/17  
 Sample No : WG978923-2      Init. Calib. Times : 17:59      20:57  
 Channel :

Compound	Ave. RRF	RRF	Min RRF	%D	Max %D	Area%	Dev(min)
1,2-Dibromo-3-chloropropan	20	19.133	-	4.3	20	117	0
1,3,5-Trichlorobenzene	1.02	1.058	-	-3.7	20	114	0
Hexachlorobutadiene	0.5	0.504	-	-0.8	20	115	0
1,2,4-Trichlorobenzene	0.869	0.818	-	5.9	20	105	0
Naphthalene	20	16.029	-	19.9	20	102	0
1,2,3-Trichlorobenzene	0.812	0.834	-	-2.7	20	110	0

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\* Value outside of QC limits.



**Continuing Calibration  
Form 7**

Client	: Vertex Environmental Services, Inc.	Lab Number	: L1704984
Project Name	: E. BOSTON	Project Number	: 43068
Instrument ID	: VOA110	Calibration Date	: 02/20/17 07:35
Lab File ID	: V10170220A01	Init. Calib. Date(s)	: 01/12/17
Sample No	: WG979473-2	Init. Calib. Times	: 01/12/17 17:59 20:57
Channel	:		

Compound	Ave. RRF	RRF	Min RRF	%D	Max %D	Area%	Dev(min)
Fluorobenzene	1	1	-	0	20	158	0
Dichlorodifluoromethane	0.34	0.262	-	22.9*	20	120	0
Chloromethane	0.226	0.216	-	4.4	20	150	0
Vinyl chloride	0.299	0.249	-	16.7	20	128	0
Bromomethane	0.249	0.203	-	18.5	20	128	0
Chloroethane	0.196	0.17	-	13.3	20	135	0
Trichlorofluoromethane	0.513	0.428	-	16.6	20	125	0
Ethyl ether	0.162	0.145	-	10.5	20	138	0
1,1-Dichloroethene	0.22	0.202	-	8.2	20	148	0
Carbon disulfide	0.765	0.756	-	1.2	20	166	0
Freon-113	0.211	0.19	-	10	20	137	0
Acrolein	0.022	0.024	-	-9.1	20	203	0
Methylene chloride	0.268	0.34	-	-26.9*	20	208	0
Acetone	20	26.041	-	-30.2*	20	198	-0.1
trans-1,2-Dichloroethene	0.24	0.234	-	2.5	20	155	0
Methyl acetate	0.116	0.114	-	1.7	20	165	0
Methyl tert-butyl ether	0.64	0.69	-	-7.8	20	176	0
tert-Butyl alcohol	100	110.694	-	-10.7	20	199	0
Diisopropyl ether	0.614	0.664	-	-8.1	20	173	0
1,1-Dichloroethane	0.408	0.416	-	-2	20	159	0
Halothane	0.147	0.142	-	3.4	20	148	0
Acrylonitrile	20	21.197	-	-6	20	177	0
Ethyl tert-butyl ether	0.581	0.624	-	-7.4	20	173	0
Vinyl acetate	20	18.707	-	6.5	20	170	0
cis-1,2-Dichloroethene	0.253	0.254	-	-0.4	20	156	0
2,2-Dichloropropane	0.342	0.349	-	-2	20	166	0
Bromochloromethane	0.115	0.113	-	1.7	20	147	0
Cyclohexane	0.298	0.308	-	-3.4	20	155	0
Chloroform	0.447	0.442	-	1.1	20	151	0
Ethyl acetate	20	19.326	-	3.4	20	172	0
Carbon tetrachloride	0.309	0.304	-	1.6	20	152	0
Tetrahydrofuran	20	24.732	-	-23.7*	20	181	0
Dibromofluoromethane	0.252	0.252	-	0	20	159	0
1,1,1-Trichloroethane	0.389	0.385	-	1	20	154	0
2-Butanone	20	20.591	-	-3	20	182	-0.1
1,1-Dichloropropene	0.3	0.303	-	-1	20	156	0
Benzene	0.947	0.963	-	-1.7	20	157	-0.1
tert-Amyl methyl ether	20	19.377	-	3.1	20	179	0
1,2-Dichloroethane-d4	0.283	0.278	-	1.8	20	158	0
1,2-Dichloroethane	0.32	0.315	-	1.6	20	150	0
Methyl cyclohexane	0.342	0.327	-	4.4	20	149	-0.1
Trichloroethene	0.256	0.245	-	4.3	20	149	0
Dibromomethane	0.134	0.131	-	2.2	20	153	0
1,2-Dichloropropane	0.207	0.216	-	-4.3	20	163	0
2-Chloroethyl vinyl ether	20	17.199	-	14	20	167	0

\* Value outside of QC limits.



**Continuing Calibration  
Form 7**

Client	: Vertex Environmental Services, Inc.	Lab Number	: L1704984		
Project Name	: E. BOSTON	Project Number	: 43068		
Instrument ID	: VOA110	Calibration Date	: 02/20/17 07:35		
Lab File ID	: V10170220A01	Init. Calib. Date(s)	: 01/12/17		01/12/17
Sample No	: WG979473-2	Init. Calib. Times	: 17:59		20:57
Channel	:				

Compound	Ave. RRF	RRF	Min RRF	%D	Max %D	Area%	Dev(min)
Bromodichloromethane	0.313	0.313	-	0	20	159	0
1,4-Dioxane	0.00199	0.00208	-	-4.5	20	181	0
cis-1,3-Dichloropropene	20	18.046	-	9.8	20	165	0
Chlorobenzene-d5	1	1	-	0	20	152	0
Toluene-d8	1.21	1.334	-	-10.2	20	162	0
Toluene	0.82	0.859	-	-4.8	20	156	0
4-Methyl-2-pentanone	20	19.38	-	3.1	20	181	0
Tetrachloroethene	0.352	0.329	-	6.5	20	136	0
trans-1,3-Dichloropropene	20	19.368	-	3.2	20	165	0
Ethyl methacrylate	20	16.92	-	15.4	20	171	0
1,1,2-Trichloroethane	0.234	0.253	-	-8.1	20	155	0
Chlorodibromomethane	20	18.61	-	7	20	156	0
1,3-Dichloropropane	0.463	0.5	-	-8	20	158	0
1,2-Dibromoethane	20	19.342	-	3.3	20	152	0
2-Hexanone	20	17.711	-	11.4	20	170	0
Chlorobenzene	0.89	0.893	-	-0.3	20	149	0
Ethylbenzene	1.52	1.542	-	-1.4	20	148	0
1,1,1,2-Tetrachloroethane	0.313	0.32	-	-2.2	20	153	0
p/m Xylene	0.584	0.596	-	-2.1	20	148	0
o Xylene	40	37.281	-	6.8	20	147	0
Styrene	40	36.406	-	9	20	149	0
1,4-Dichlorobenzene-d4	1	1	-	0	20	151	0
Bromoform	20	16.828	-	15.9	20	155	0
Isopropylbenzene	20	18.353	-	8.2	20	145	0
4-Bromofluorobenzene	0.869	0.944	-	-8.6	20	165	0
Bromobenzene	0.751	0.711	-	5.3	20	141	0
n-Propylbenzene	3.525	3.53	-	-0.1	20	146	0
1,4-Dichlorobutane	0.802	0.837	-	-4.4	20	153	0
1,1,2,2-Tetrachloroethane	0.689	0.704	-	-2.2	20	150	0
4-Ethyltoluene	2.761	2.791	-	-1.1	20	146	0
2-Chlorotoluene	2.16	2.156	-	0.2	20	147	0
1,3,5-Trimethylbenzene	2.416	2.437	-	-0.9	20	143	0
1,2,3-Trichloropropane	0.558	0.567	-	-1.6	20	151	0
trans-1,4-Dichloro-2-butene	0.166	0.155	-	6.6	20	145	0
4-Chlorotoluene	2.103	2.144	-	-1.9	20	149	0
tert-Butylbenzene	2.001	1.982	-	0.9	20	144	0
1,2,4-Trimethylbenzene	20	19.01	-	4.9	20	146	0
sec-Butylbenzene	3.049	3.032	-	0.6	20	142	0
p-Isopropyltoluene	20	18.229	-	8.9	20	143	0
1,3-Dichlorobenzene	1.481	1.405	-	5.1	20	139	0
1,4-Dichlorobenzene	1.526	1.42	-	6.9	20	138	0
p-Diethylbenzene	20	17.95	-	10.3	20	144	0
n-Butylbenzene	2.476	2.505	-	-1.2	20	144	0
1,2-Dichlorobenzene	1.363	1.281	-	6	20	140	0
1,2,4,5-Tetramethylbenzene	20	16.713	-	16.4	20	146	0

\* Value outside of QC limits.



# Continuing Calibration

## Form 7

Client : Vertex Environmental Services, Inc.      Lab Number : L1704984  
 Project Name : E. BOSTON      Project Number : 43068  
 Instrument ID : VOA110      Calibration Date : 02/20/17 07:35  
 Lab File ID : V10170220A01      Init. Calib. Date(s) : 01/12/17      01/12/17  
 Sample No : WG979473-2      Init. Calib. Times : 17:59      20:57  
 Channel :

Compound	Ave. RRF	RRF	Min RRF	%D	Max %D	Area%	Dev(min)
1,2-Dibromo-3-chloropropan	20	17.962	-	10.2	20	150	0
1,3,5-Trichlorobenzene	1.02	0.986	-	3.3	20	146	0
Hexachlorobutadiene	0.5	0.464	-	7.2	20	145	0
1,2,4-Trichlorobenzene	0.869	0.815	-	6.2	20	143	0
Naphthalene	20	16.36	-	18.2	20	143	0
1,2,3-Trichlorobenzene	0.812	0.776	-	4.4	20	141	0

---

\* Value outside of QC limits.



I:\Pest18\170721\18170221-01.d

Data File Name **18170221-01.d**  
 Data File Path **I:\Pest18\170721\**  
 Operator **PEST18:dm**  
 Date Acquired **2/21/2017 9:45**  
 Acq. Method File **PEST.M**  
 Sample Name **pem1817022101,42ee,,de**  
 Instrument Name **Pest 18**

Name	Ret Time	Response	
4,4'-DDT	4.77	516210949.7	% Breakdown
4,4'-DDE	4.10	1149288.673	
4,4'-DDD	4.56	2267515.203	0.66%
Endrin	4.49	260989623.1	% Breakdown
Endrin Aldehyde	4.96	3384964.45	
Endrin Ketone	5.46	5885273.497	3.43%
4,4'-DDT #2	5.40	315838092.1	% Breakdown
4,4'-DDE #2	4.75	1062632.68	
4,4'-DDD #2	5.18	1834440	0.91%
Endrin #2	5.10	169909429.4	% Breakdown
Endrin Aldehyde #2	5.49	2693618.936	
Endrin Ketone #2	6.04	2365563.846	2.89%

# ##### Data File Path **I:\Pest17\150918\****L1704984-01,06,09**

I:\Pest18\170219\18170219-01.d

Data File Name **18170219-01.d**  
 Data File Path **I:\Pest18\170219\**  
 Operator **PEST18:keg**  
 Date Acquired **2/19/2017 6:39**  
 Acq. Method File **PEST.M**  
 Sample Name **pem1817021901,42ee,,de**  
 Instrument Name **Pest 18**

Name	Ret Time	Response	
4,4'-DDT	4.77	596512694	% Breakdown
4,4'-DDE	4.10	1313720.5	
4,4'-DDD	4.56	2805222.74	0.69%
Endrin	4.49	312359165	% Breakdown
Endrin Aldehyde	4.96	3214489.238	
Endrin Ketone	5.46	3458992.346	2.09%
4,4'-DDT #2	5.40	352986076.7	% Breakdown
4,4'-DDE #2	4.75	1439625.154	
4,4'-DDD #2	5.18	3968664.015	1.51%
Endrin #2	5.11	202335181.3	% Breakdown
Endrin Aldehyde #2	5.50	2230195.539	
Endrin Ketone #2	6.05	1946107.989	2.02%

# ##### Data File Path **I:\Pest17\150918\**

WG978590-1 , 2 , 3



## ANALYTICAL REPORT

Lab Number:	L1704993
Client:	Vertex Environmental Services, Inc. 400 Libbey Pkwy Weymouth, MA 02184
ATTN:	Bill Gibbons
Phone:	(617) 830-1540
Project Name:	EAST BOSTON
Project Number:	43068
Report Date:	02/21/17

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Certifications & Approvals: MA (M-MA086), NH NELAP (2064), NJ NELAP (MA935), CT (PH-0574), IL (200077), ME (MA00086), MD (348), NH (2003), NY (11148), NC (25700/666), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #P330-14-00197).

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Eight Walkup Drive, Westborough, MA 01581-1019  
508-898-9220 (Fax) 508-898-9193 800-624-9220 - [www.alphalab.com](http://www.alphalab.com)



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704993  
**Report Date:** 02/21/17

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L1704993-01	VES-101 (GW)	WATER	MA	02/16/17 08:40	02/16/17
L1704993-02	VES-104 (GW)	WATER	MA	02/16/17 11:30	02/16/17
L1704993-03	VES-102 (GW)	WATER	MA	02/16/17 13:35	02/16/17
L1704993-04	VES-103 (GW)	WATER	MA	02/16/17 12:45	02/16/17
L1704993-05	VES-123 (GW)	WATER	MA	02/16/17 15:10	02/16/17
L1704993-06	VES-121 (GW)	WATER	MA	02/16/17 10:15	02/16/17

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704993  
**Report Date:** 02/21/17

### MADEP MCP Response Action Analytical Report Certification

This form provides certifications for all samples performed by MCP methods. Please refer to the Sample Results and Container Information sections of this report for specification of MCP methods used for each analysis. The following questions pertain only to MCP Analytical Methods.

<b>An affirmative response to questions A through F is required for "Presumptive Certainty" status</b>		
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
B	Were the analytical method(s) and all associated QC requirements specified in the selected CAM protocol(s) followed?	YES
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
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
E a.	VPH, EPH, and APH Methods only: Was each method conducted without significant modification(s)? (Refer to the individual method(s) for a list of significant modifications).	YES
E b.	APH and TO-15 Methods only: Was the complete analyte list reported for each method?	N/A
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

<b>A response to questions G, H and I is required for "Presumptive Certainty" status</b>		
G	Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocol(s)?	NO
H	Were all QC performance standards specified in the CAM protocol(s) achieved?	NO
I	Were results reported for the complete analyte list specified in the selected CAM protocol(s)?	NO

**For any questions answered "No", please refer to the case narrative section on the following page(s).**

Please note that sample matrix information is located in the Sample Results section of this report.



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704993  
**Report Date:** 02/21/17

### Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively. When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. All specific QC information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated usability implications. Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances the specific failure is not narrated but noted in the associated QC table. The information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated usability implications.

Please see the associated ADEx data file for a comparison of laboratory reporting limits that were achieved with the regulatory Numerical Standards requested on the Chain of Custody.

#### HOLD POLICY

For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Client Service Representative and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Client Services at 800-624-9220 with any questions.

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704993  
**Report Date:** 02/21/17

### Case Narrative (continued)

#### MCP Related Narratives

##### Volatile Organics

In reference to question H:

The initial calibration, associated with L1704993-01 through -05, did not meet the method required minimum response factor on the lowest calibration standard for 2-butanone (0.0732) and 1,4-dioxane (0.0014), as well as the average response factor for 2-butanone and 1,4-dioxane.

The initial calibration, associated with L1704993-06, did not meet the method required minimum response factor on the lowest calibration standard for 4-methyl-2-pentanone (0.0761) and 1,4-dioxane (0.0017), as well as the average response factor for 4-methyl-2-pentanone and 1,4-dioxane.

The continuing calibration standards, associated with L1704993-01 through -06, are outside the acceptance criteria for several compounds; however, they are within overall method allowances. Copies of the continuing calibration standards are included as an addendum to this report.

#### Volatile Organics by SIM

A copy of the continuing calibration standard, associated with L1704993-01, -03, -04, and -05, is included as an addendum to this report.

#### VPH

In reference to question I:

All samples were analyzed for a subset of MCP analytes per the Chain of Custody.

#### EPH

In reference to question H:

The initial calibration, associated with L1704993-01 through -06 utilized a quadratic fit for o-terphenyl-MS.

#### Dissolved Metals

L1704993-04: The sample has an elevated detection limit for mercury due to limited sample volume available for analysis.

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704993  
**Report Date:** 02/21/17

### Case Narrative (continued)

In reference to question G:

L1704993-04: One or more of the target analytes did not achieve the requested CAM reporting limits.

In reference to question H:

The WG979365-2 LCS recovery, associated with L1704993-01, -03, and -05, is outside the acceptance criteria for zinc (128%). Re-analysis of the LCS yielded an unacceptable recovery of 128%. The LCSD recovery was within acceptance criteria for this analyte; therefore, no further action was taken.

The WG979366-3 MS recovery for iron (0%), performed on L1704993-01, does not apply because the sample concentration is greater than four times the spike amount added.

In reference to question I:

All samples were analyzed for a subset of MCP analytes per the Chain of Custody.

#### Total Metals

In reference to question H:

The WG979391-3 MS recovery for iron (60%), performed on L1704993-01, does not apply because the sample concentration is greater than four times the spike amount added.

In reference to question I:

All samples were analyzed for a subset of MCP analytes per the Chain of Custody.

#### Non-MCP Related Narratives

##### Semivolatile Organics

The WG978284-2/3 LCS/LCSD recoveries, associated with L1704993-01, -03, and -05, are below the acceptance criteria for benzidine (9%/5%); however, it has been identified as a "difficult" analyte. The results of the associated samples are reported.

The WG979019-3 LCSD recovery, associated with L1704993-04, is below the acceptance criteria for benzidine (0%); however, it has been identified as a "difficult" analyte. The results of the associated sample are reported.

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704993  
**Report Date:** 02/21/17

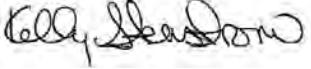
#### Case Narrative (continued)

Phenolics, Total

The WG979610-3 Laboratory Duplicate RPD (29%), performed on L1704993-04, is above the acceptance criteria; however, the sample and duplicate results are less than five times the reporting limit. Therefore, the RPD is valid.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature:

 Kelly Stenstrom

Title: Technical Director/Representative

Date: 02/21/17

# ORGANICS



# VOLATILES



**Project Name:** EAST BOSTON  
**Project Number:** 43068

Serial\_No:02211719:13

**Lab Number:** L1704993  
**Report Date:** 02/21/17

### SAMPLE RESULTS

Lab ID: L1704993-01  
Client ID: VES-101 (GW)  
Sample Location: MA  
  
Matrix: Water  
Analytical Method: 14,504.1  
Analytical Date: 02/17/17 15:17  
Analyst: AM

Date Collected: 02/16/17 08:40  
Date Received: 02/16/17  
Field Prep: Field Filtered (Dissolved Metals)  
Extraction Method:EPA 504.1  
Extraction Date: 02/17/17 12:35

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Microextractables by GC - Westborough Lab							
1,2-Dibromoethane	ND		ug/l	0.010	--	1	A

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704993  
**Report Date:** 02/21/17

**SAMPLE RESULTS**

Lab ID: L1704993-01  
Client ID: VES-101 (GW)  
Sample Location: MA

Date Collected: 02/16/17 08:40  
Date Received: 02/16/17  
Field Prep: Field Filtered (Dissolved Metals)

Matrix: Water  
Analytical Method: 97,8260C  
Analytical Date: 02/20/17 08:01  
Analyst: MM

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics - Westborough Lab</b>						
Methylene chloride	ND	ug/l	2.0	--	--	1
1,1-Dichloroethane	ND	ug/l	1.0	--	--	1
Chloroform	ND	ug/l	1.0	--	--	1
Carbon tetrachloride	ND	ug/l	1.0	--	--	1
1,2-Dichloropropane	ND	ug/l	1.0	--	--	1
Dibromochloromethane	ND	ug/l	1.0	--	--	1
1,1,2-Trichloroethane	ND	ug/l	1.0	--	--	1
Tetrachloroethene	ND	ug/l	1.0	--	--	1
Chlorobenzene	ND	ug/l	1.0	--	--	1
Trichlorofluoromethane	ND	ug/l	2.0	--	--	1
1,2-Dichloroethane	ND	ug/l	1.0	--	--	1
1,1,1-Trichloroethane	ND	ug/l	1.0	--	--	1
Bromodichloromethane	ND	ug/l	1.0	--	--	1
trans-1,3-Dichloropropene	ND	ug/l	0.50	--	--	1
cis-1,3-Dichloropropene	ND	ug/l	0.50	--	--	1
1,1-Dichloropropene	ND	ug/l	2.0	--	--	1
Bromoform	ND	ug/l	2.0	--	--	1
1,1,2,2-Tetrachloroethane	ND	ug/l	1.0	--	--	1
Benzene	ND	ug/l	0.50	--	--	1
Toluene	ND	ug/l	1.0	--	--	1
Ethylbenzene	ND	ug/l	1.0	--	--	1
Chloromethane	ND	ug/l	2.0	--	--	1
Bromomethane	ND	ug/l	2.0	--	--	1
Vinyl chloride	ND	ug/l	1.0	--	--	1
Chloroethane	ND	ug/l	2.0	--	--	1
1,1-Dichloroethene	ND	ug/l	1.0	--	--	1
trans-1,2-Dichloroethene	ND	ug/l	1.0	--	--	1
Trichloroethene	ND	ug/l	1.0	--	--	1
1,2-Dichlorobenzene	ND	ug/l	1.0	--	--	1



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704993  
**Report Date:** 02/21/17

**SAMPLE RESULTS**

Lab ID:	L1704993-01	Date Collected:	02/16/17 08:40
Client ID:	VES-101 (GW)	Date Received:	02/16/17
Sample Location:	MA	Field Prep:	Field Filtered (Dissolved Metals)

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics - Westborough Lab</b>						
1,3-Dichlorobenzene	ND		ug/l	1.0	--	1
1,4-Dichlorobenzene	ND		ug/l	1.0	--	1
Methyl tert butyl ether	ND		ug/l	2.0	--	1
p/m-Xylene	ND		ug/l	2.0	--	1
o-Xylene	ND		ug/l	1.0	--	1
cis-1,2-Dichloroethene	ND		ug/l	1.0	--	1
Dibromomethane	ND		ug/l	2.0	--	1
1,2,3-Trichloropropane	ND		ug/l	2.0	--	1
Styrene	ND		ug/l	1.0	--	1
Dichlorodifluoromethane	ND		ug/l	2.0	--	1
Acetone	5.8		ug/l	5.0	--	1
Carbon disulfide	ND		ug/l	2.0	--	1
Methyl ethyl ketone	ND		ug/l	5.0	--	1
Methyl isobutyl ketone	ND		ug/l	5.0	--	1
2-Hexanone	ND		ug/l	5.0	--	1
Bromochloromethane	ND		ug/l	2.0	--	1
Tetrahydrofuran	ND		ug/l	2.0	--	1
2,2-Dichloropropane	ND		ug/l	2.0	--	1
1,2-Dibromoethane	ND		ug/l	2.0	--	1
1,3-Dichloropropane	ND		ug/l	2.0	--	1
1,1,1,2-Tetrachloroethane	ND		ug/l	1.0	--	1
Bromobenzene	ND		ug/l	2.0	--	1
n-Butylbenzene	ND		ug/l	2.0	--	1
sec-Butylbenzene	ND		ug/l	2.0	--	1
tert-Butylbenzene	ND		ug/l	2.0	--	1
o-Chlorotoluene	ND		ug/l	2.0	--	1
p-Chlorotoluene	ND		ug/l	2.0	--	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.0	--	1
Hexachlorobutadiene	ND		ug/l	0.60	--	1
Isopropylbenzene	ND		ug/l	2.0	--	1
p-Isopropyltoluene	ND		ug/l	2.0	--	1
Naphthalene	ND		ug/l	2.0	--	1
n-Propylbenzene	ND		ug/l	2.0	--	1
1,2,3-Trichlorobenzene	ND		ug/l	2.0	--	1
1,2,4-Trichlorobenzene	ND		ug/l	2.0	--	1
1,3,5-Trimethylbenzene	ND		ug/l	2.0	--	1
1,2,4-Trimethylbenzene	ND		ug/l	2.0	--	1
Diethyl ether	ND		ug/l	2.0	--	1

Project Name: EAST BOSTON

Lab Number: L1704993

Project Number: 43068

Report Date: 02/21/17

**SAMPLE RESULTS**

Lab ID: L1704993-01  
 Client ID: VES-101 (GW)  
 Sample Location: MA

Date Collected: 02/16/17 08:40  
 Date Received: 02/16/17  
 Field Prep: Field Filtered (Dissolved Metals)

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics - Westborough Lab</b>						
Diisopropyl Ether	ND		ug/l	2.0	--	1
Ethyl-Tert-Butyl-Ether	ND		ug/l	2.0	--	1
Tertiary-Amyl Methyl Ether	ND		ug/l	2.0	--	1
Tert-Butyl Alcohol	ND		ug/l	10	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	118		70-130
Toluene-d8	95		70-130
4-Bromofluorobenzene	95		70-130
Dibromofluoromethane	120		70-130

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704993  
**Report Date:** 02/21/17

**SAMPLE RESULTS**

Lab ID: L1704993-01  
Client ID: VES-101 (GW)  
Sample Location: MA

Date Collected: 02/16/17 08:40  
Date Received: 02/16/17  
Field Prep: Field Filtered (Dissolved Metals)

Matrix: Water  
Analytical Method: 97,8260C-SIM  
Analytical Date: 02/20/17 08:01  
Analyst: MM

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics by SIM - Westborough Lab</b>						
1,4-Dioxane	ND		ug/l	3.0	--	1

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704993  
**Report Date:** 02/21/17

**SAMPLE RESULTS**

Lab ID: L1704993-02  
Client ID: VES-104 (GW)  
Sample Location: MA

Date Collected: 02/16/17 11:30  
Date Received: 02/16/17  
Field Prep: Field Filtered (Dissolved Metals)

Matrix: Water  
Analytical Method: 97,8260C  
Analytical Date: 02/20/17 08:26  
Analyst: MM

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics - Westborough Lab</b>						
Methylene chloride	ND	ug/l	2.0	--	--	1
1,1-Dichloroethane	ND	ug/l	1.0	--	--	1
Chloroform	ND	ug/l	1.0	--	--	1
Carbon tetrachloride	ND	ug/l	1.0	--	--	1
1,2-Dichloropropane	ND	ug/l	1.0	--	--	1
Dibromochloromethane	ND	ug/l	1.0	--	--	1
1,1,2-Trichloroethane	ND	ug/l	1.0	--	--	1
Tetrachloroethene	ND	ug/l	1.0	--	--	1
Chlorobenzene	ND	ug/l	1.0	--	--	1
Trichlorofluoromethane	ND	ug/l	2.0	--	--	1
1,2-Dichloroethane	ND	ug/l	1.0	--	--	1
1,1,1-Trichloroethane	ND	ug/l	1.0	--	--	1
Bromodichloromethane	ND	ug/l	1.0	--	--	1
trans-1,3-Dichloropropene	ND	ug/l	0.50	--	--	1
cis-1,3-Dichloropropene	ND	ug/l	0.50	--	--	1
1,1-Dichloropropene	ND	ug/l	2.0	--	--	1
Bromoform	ND	ug/l	2.0	--	--	1
1,1,2,2-Tetrachloroethane	ND	ug/l	1.0	--	--	1
Benzene	ND	ug/l	0.50	--	--	1
Toluene	1.3	ug/l	1.0	--	--	1
Ethylbenzene	ND	ug/l	1.0	--	--	1
Chloromethane	ND	ug/l	2.0	--	--	1
Bromomethane	ND	ug/l	2.0	--	--	1
Vinyl chloride	ND	ug/l	1.0	--	--	1
Chloroethane	ND	ug/l	2.0	--	--	1
1,1-Dichloroethene	ND	ug/l	1.0	--	--	1
trans-1,2-Dichloroethene	ND	ug/l	1.0	--	--	1
Trichloroethene	ND	ug/l	1.0	--	--	1
1,2-Dichlorobenzene	ND	ug/l	1.0	--	--	1



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704993  
**Report Date:** 02/21/17

**SAMPLE RESULTS**

Lab ID:	L1704993-02	Date Collected:	02/16/17 11:30
Client ID:	VES-104 (GW)	Date Received:	02/16/17
Sample Location:	MA	Field Prep:	Field Filtered (Dissolved Metals)

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics - Westborough Lab</b>						
1,3-Dichlorobenzene	ND		ug/l	1.0	--	1
1,4-Dichlorobenzene	ND		ug/l	1.0	--	1
Methyl tert butyl ether	ND		ug/l	2.0	--	1
p/m-Xylene	ND		ug/l	2.0	--	1
o-Xylene	1.1		ug/l	1.0	--	1
cis-1,2-Dichloroethene	ND		ug/l	1.0	--	1
Dibromomethane	ND		ug/l	2.0	--	1
1,2,3-Trichloropropane	ND		ug/l	2.0	--	1
Styrene	ND		ug/l	1.0	--	1
Dichlorodifluoromethane	ND		ug/l	2.0	--	1
Acetone	33		ug/l	5.0	--	1
Carbon disulfide	ND		ug/l	2.0	--	1
2-Butanone	ND		ug/l	5.0	--	1
4-Methyl-2-pentanone	ND		ug/l	5.0	--	1
2-Hexanone	ND		ug/l	5.0	--	1
Bromochloromethane	ND		ug/l	2.0	--	1
Tetrahydrofuran	ND		ug/l	2.0	--	1
2,2-Dichloropropane	ND		ug/l	2.0	--	1
1,2-Dibromoethane	ND		ug/l	2.0	--	1
1,3-Dichloropropane	ND		ug/l	2.0	--	1
1,1,1,2-Tetrachloroethane	ND		ug/l	1.0	--	1
Bromobenzene	ND		ug/l	2.0	--	1
n-Butylbenzene	ND		ug/l	2.0	--	1
sec-Butylbenzene	ND		ug/l	2.0	--	1
tert-Butylbenzene	ND		ug/l	2.0	--	1
o-Chlorotoluene	ND		ug/l	2.0	--	1
p-Chlorotoluene	ND		ug/l	2.0	--	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.0	--	1
Hexachlorobutadiene	ND		ug/l	0.60	--	1
Isopropylbenzene	ND		ug/l	2.0	--	1
p-Isopropyltoluene	ND		ug/l	2.0	--	1
Naphthalene	ND		ug/l	2.0	--	1
n-Propylbenzene	ND		ug/l	2.0	--	1
1,2,3-Trichlorobenzene	ND		ug/l	2.0	--	1
1,2,4-Trichlorobenzene	ND		ug/l	2.0	--	1
1,3,5-Trimethylbenzene	ND		ug/l	2.0	--	1
1,2,4-Trimethylbenzene	ND		ug/l	2.0	--	1
Ethyl ether	ND		ug/l	2.0	--	1

Project Name: EAST BOSTON

Lab Number: L1704993

Project Number: 43068

Report Date: 02/21/17

**SAMPLE RESULTS**

Lab ID:	L1704993-02	Date Collected:	02/16/17 11:30
Client ID:	VES-104 (GW)	Date Received:	02/16/17
Sample Location:	MA	Field Prep:	Field Filtered (Dissolved Metals)

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics - Westborough Lab						
Isopropyl Ether	ND		ug/l	2.0	--	1
Ethyl-Tert-Butyl-Ether	ND		ug/l	2.0	--	1
Tertiary-Amyl Methyl Ether	ND		ug/l	2.0	--	1
1,4-Dioxane	ND		ug/l	250	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	114		70-130
Toluene-d8	92		70-130
4-Bromofluorobenzene	96		70-130
Dibromofluoromethane	121		70-130

**Project Name:** EAST BOSTON  
**Project Number:** 43068

Serial\_No:02211719:13

**Lab Number:** L1704993  
**Report Date:** 02/21/17

### SAMPLE RESULTS

Lab ID: L1704993-03  
Client ID: VES-102 (GW)  
Sample Location: MA  
  
Matrix: Water  
Analytical Method: 14,504.1  
Analytical Date: 02/17/17 15:34  
Analyst: AM

Date Collected: 02/16/17 13:35  
Date Received: 02/16/17  
Field Prep: Field Filtered (Dissolved Metals)  
Extraction Method:EPA 504.1  
Extraction Date: 02/17/17 12:35

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Microextractables by GC - Westborough Lab							
1,2-Dibromoethane	ND		ug/l	0.010	--	1	A

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704993  
**Report Date:** 02/21/17

**SAMPLE RESULTS**

Lab ID: L1704993-03  
Client ID: VES-102 (GW)  
Sample Location: MA

Date Collected: 02/16/17 13:35  
Date Received: 02/16/17  
Field Prep: Field Filtered (Dissolved Metals)

Matrix: Water  
Analytical Method: 97,8260C  
Analytical Date: 02/20/17 08:51  
Analyst: MM

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics - Westborough Lab</b>						
Methylene chloride	ND	ug/l	2.0	--	--	1
1,1-Dichloroethane	ND	ug/l	1.0	--	--	1
Chloroform	ND	ug/l	1.0	--	--	1
Carbon tetrachloride	ND	ug/l	1.0	--	--	1
1,2-Dichloropropane	ND	ug/l	1.0	--	--	1
Dibromochloromethane	ND	ug/l	1.0	--	--	1
1,1,2-Trichloroethane	ND	ug/l	1.0	--	--	1
Tetrachloroethene	ND	ug/l	1.0	--	--	1
Chlorobenzene	ND	ug/l	1.0	--	--	1
Trichlorofluoromethane	ND	ug/l	2.0	--	--	1
1,2-Dichloroethane	ND	ug/l	1.0	--	--	1
1,1,1-Trichloroethane	ND	ug/l	1.0	--	--	1
Bromodichloromethane	ND	ug/l	1.0	--	--	1
trans-1,3-Dichloropropene	ND	ug/l	0.50	--	--	1
cis-1,3-Dichloropropene	ND	ug/l	0.50	--	--	1
1,1-Dichloropropene	ND	ug/l	2.0	--	--	1
Bromoform	ND	ug/l	2.0	--	--	1
1,1,2,2-Tetrachloroethane	ND	ug/l	1.0	--	--	1
Benzene	ND	ug/l	0.50	--	--	1
Toluene	ND	ug/l	1.0	--	--	1
Ethylbenzene	ND	ug/l	1.0	--	--	1
Chloromethane	ND	ug/l	2.0	--	--	1
Bromomethane	ND	ug/l	2.0	--	--	1
Vinyl chloride	ND	ug/l	1.0	--	--	1
Chloroethane	ND	ug/l	2.0	--	--	1
1,1-Dichloroethene	ND	ug/l	1.0	--	--	1
trans-1,2-Dichloroethene	ND	ug/l	1.0	--	--	1
Trichloroethene	ND	ug/l	1.0	--	--	1
1,2-Dichlorobenzene	ND	ug/l	1.0	--	--	1



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704993  
**Report Date:** 02/21/17

**SAMPLE RESULTS**

Lab ID:	L1704993-03	Date Collected:	02/16/17 13:35
Client ID:	VES-102 (GW)	Date Received:	02/16/17
Sample Location:	MA	Field Prep:	Field Filtered (Dissolved Metals)

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics - Westborough Lab</b>						
1,3-Dichlorobenzene	ND	ug/l	1.0	--	--	1
1,4-Dichlorobenzene	ND	ug/l	1.0	--	--	1
Methyl tert butyl ether	ND	ug/l	2.0	--	--	1
p/m-Xylene	ND	ug/l	2.0	--	--	1
o-Xylene	ND	ug/l	1.0	--	--	1
cis-1,2-Dichloroethene	ND	ug/l	1.0	--	--	1
Dibromomethane	ND	ug/l	2.0	--	--	1
1,2,3-Trichloropropane	ND	ug/l	2.0	--	--	1
Styrene	ND	ug/l	1.0	--	--	1
Dichlorodifluoromethane	ND	ug/l	2.0	--	--	1
Acetone	ND	ug/l	5.0	--	--	1
Carbon disulfide	ND	ug/l	2.0	--	--	1
Methyl ethyl ketone	ND	ug/l	5.0	--	--	1
Methyl isobutyl ketone	ND	ug/l	5.0	--	--	1
2-Hexanone	ND	ug/l	5.0	--	--	1
Bromochloromethane	ND	ug/l	2.0	--	--	1
Tetrahydrofuran	ND	ug/l	2.0	--	--	1
2,2-Dichloropropane	ND	ug/l	2.0	--	--	1
1,2-Dibromoethane	ND	ug/l	2.0	--	--	1
1,3-Dichloropropane	ND	ug/l	2.0	--	--	1
1,1,1,2-Tetrachloroethane	ND	ug/l	1.0	--	--	1
Bromobenzene	ND	ug/l	2.0	--	--	1
n-Butylbenzene	ND	ug/l	2.0	--	--	1
sec-Butylbenzene	ND	ug/l	2.0	--	--	1
tert-Butylbenzene	ND	ug/l	2.0	--	--	1
o-Chlorotoluene	ND	ug/l	2.0	--	--	1
p-Chlorotoluene	ND	ug/l	2.0	--	--	1
1,2-Dibromo-3-chloropropane	ND	ug/l	2.0	--	--	1
Hexachlorobutadiene	ND	ug/l	0.60	--	--	1
Isopropylbenzene	ND	ug/l	2.0	--	--	1
p-Isopropyltoluene	ND	ug/l	2.0	--	--	1
Naphthalene	ND	ug/l	2.0	--	--	1
n-Propylbenzene	ND	ug/l	2.0	--	--	1
1,2,3-Trichlorobenzene	ND	ug/l	2.0	--	--	1
1,2,4-Trichlorobenzene	ND	ug/l	2.0	--	--	1
1,3,5-Trimethylbenzene	ND	ug/l	2.0	--	--	1
1,2,4-Trimethylbenzene	ND	ug/l	2.0	--	--	1
Diethyl ether	ND	ug/l	2.0	--	--	1



Project Name: EAST BOSTON

Lab Number: L1704993

Project Number: 43068

Report Date: 02/21/17

**SAMPLE RESULTS**

Lab ID: L1704993-03  
 Client ID: VES-102 (GW)  
 Sample Location: MA

Date Collected: 02/16/17 13:35  
 Date Received: 02/16/17  
 Field Prep: Field Filtered (Dissolved Metals)

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics - Westborough Lab</b>						
Diisopropyl Ether	ND		ug/l	2.0	--	1
Ethyl-Tert-Butyl-Ether	ND		ug/l	2.0	--	1
Tertiary-Amyl Methyl Ether	ND		ug/l	2.0	--	1
Tert-Butyl Alcohol	ND		ug/l	10	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	113		70-130
Toluene-d8	92		70-130
4-Bromofluorobenzene	90		70-130
Dibromofluoromethane	117		70-130

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704993  
**Report Date:** 02/21/17

**SAMPLE RESULTS**

Lab ID: L1704993-03  
Client ID: VES-102 (GW)  
Sample Location: MA

Date Collected: 02/16/17 13:35  
Date Received: 02/16/17  
Field Prep: Field Filtered (Dissolved Metals)

Matrix: Water  
Analytical Method: 97,8260C-SIM  
Analytical Date: 02/20/17 08:51  
Analyst: MM

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics by SIM - Westborough Lab</b>						
1,4-Dioxane	ND		ug/l	3.0	--	1

**Project Name:** EAST BOSTON  
**Project Number:** 43068

Serial\_No:02211719:13

**Lab Number:** L1704993  
**Report Date:** 02/21/17

### SAMPLE RESULTS

Lab ID: L1704993-04  
Client ID: VES-103 (GW)  
Sample Location: MA  
  
Matrix: Water  
Analytical Method: 14,504.1  
Analytical Date: 02/17/17 15:52  
Analyst: AM

Date Collected: 02/16/17 12:45  
Date Received: 02/16/17  
Field Prep: Field Filtered (Dissolved Metals)  
Extraction Method:EPA 504.1  
Extraction Date: 02/17/17 12:35

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Microextractables by GC - Westborough Lab							
1,2-Dibromoethane	ND		ug/l	0.010	--	1	A

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704993  
**Report Date:** 02/21/17

**SAMPLE RESULTS**

Lab ID: L1704993-04  
Client ID: VES-103 (GW)  
Sample Location: MA

Date Collected: 02/16/17 12:45  
Date Received: 02/16/17  
Field Prep: Field Filtered (Dissolved Metals)

Matrix: Water  
Analytical Method: 97,8260C  
Analytical Date: 02/20/17 09:16  
Analyst: MM

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics - Westborough Lab</b>						
Methylene chloride	ND	ug/l	2.0	--	--	1
1,1-Dichloroethane	ND	ug/l	1.0	--	--	1
Chloroform	ND	ug/l	1.0	--	--	1
Carbon tetrachloride	ND	ug/l	1.0	--	--	1
1,2-Dichloropropane	ND	ug/l	1.0	--	--	1
Dibromochloromethane	ND	ug/l	1.0	--	--	1
1,1,2-Trichloroethane	ND	ug/l	1.0	--	--	1
Tetrachloroethene	ND	ug/l	1.0	--	--	1
Chlorobenzene	ND	ug/l	1.0	--	--	1
Trichlorofluoromethane	ND	ug/l	2.0	--	--	1
1,2-Dichloroethane	ND	ug/l	1.0	--	--	1
1,1,1-Trichloroethane	ND	ug/l	1.0	--	--	1
Bromodichloromethane	ND	ug/l	1.0	--	--	1
trans-1,3-Dichloropropene	ND	ug/l	0.50	--	--	1
cis-1,3-Dichloropropene	ND	ug/l	0.50	--	--	1
1,1-Dichloropropene	ND	ug/l	2.0	--	--	1
Bromoform	ND	ug/l	2.0	--	--	1
1,1,2,2-Tetrachloroethane	ND	ug/l	1.0	--	--	1
Benzene	ND	ug/l	0.50	--	--	1
Toluene	ND	ug/l	1.0	--	--	1
Ethylbenzene	ND	ug/l	1.0	--	--	1
Chloromethane	ND	ug/l	2.0	--	--	1
Bromomethane	ND	ug/l	2.0	--	--	1
Vinyl chloride	ND	ug/l	1.0	--	--	1
Chloroethane	7.1	ug/l	2.0	--	--	1
1,1-Dichloroethene	ND	ug/l	1.0	--	--	1
trans-1,2-Dichloroethene	ND	ug/l	1.0	--	--	1
Trichloroethene	ND	ug/l	1.0	--	--	1
1,2-Dichlorobenzene	ND	ug/l	1.0	--	--	1



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704993  
**Report Date:** 02/21/17

**SAMPLE RESULTS**

Lab ID:	L1704993-04	Date Collected:	02/16/17 12:45
Client ID:	VES-103 (GW)	Date Received:	02/16/17
Sample Location:	MA	Field Prep:	Field Filtered (Dissolved Metals)

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics - Westborough Lab</b>						
1,3-Dichlorobenzene	ND		ug/l	1.0	--	1
1,4-Dichlorobenzene	ND		ug/l	1.0	--	1
Methyl tert butyl ether	ND		ug/l	2.0	--	1
p/m-Xylene	ND		ug/l	2.0	--	1
o-Xylene	ND		ug/l	1.0	--	1
cis-1,2-Dichloroethene	ND		ug/l	1.0	--	1
Dibromomethane	ND		ug/l	2.0	--	1
1,2,3-Trichloropropane	ND		ug/l	2.0	--	1
Styrene	ND		ug/l	1.0	--	1
Dichlorodifluoromethane	ND		ug/l	2.0	--	1
Acetone	7.8		ug/l	5.0	--	1
Carbon disulfide	ND		ug/l	2.0	--	1
Methyl ethyl ketone	ND		ug/l	5.0	--	1
Methyl isobutyl ketone	ND		ug/l	5.0	--	1
2-Hexanone	ND		ug/l	5.0	--	1
Bromochloromethane	ND		ug/l	2.0	--	1
Tetrahydrofuran	ND		ug/l	2.0	--	1
2,2-Dichloropropane	ND		ug/l	2.0	--	1
1,2-Dibromoethane	ND		ug/l	2.0	--	1
1,3-Dichloropropane	ND		ug/l	2.0	--	1
1,1,1,2-Tetrachloroethane	ND		ug/l	1.0	--	1
Bromobenzene	ND		ug/l	2.0	--	1
n-Butylbenzene	ND		ug/l	2.0	--	1
sec-Butylbenzene	ND		ug/l	2.0	--	1
tert-Butylbenzene	ND		ug/l	2.0	--	1
o-Chlorotoluene	ND		ug/l	2.0	--	1
p-Chlorotoluene	ND		ug/l	2.0	--	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.0	--	1
Hexachlorobutadiene	ND		ug/l	0.60	--	1
Isopropylbenzene	ND		ug/l	2.0	--	1
p-Isopropyltoluene	ND		ug/l	2.0	--	1
Naphthalene	ND		ug/l	2.0	--	1
n-Propylbenzene	ND		ug/l	2.0	--	1
1,2,3-Trichlorobenzene	ND		ug/l	2.0	--	1
1,2,4-Trichlorobenzene	ND		ug/l	2.0	--	1
1,3,5-Trimethylbenzene	ND		ug/l	2.0	--	1
1,2,4-Trimethylbenzene	ND		ug/l	2.0	--	1
Diethyl ether	ND		ug/l	2.0	--	1



Project Name: EAST BOSTON

Lab Number: L1704993

Project Number: 43068

Report Date: 02/21/17

**SAMPLE RESULTS**

Lab ID: L1704993-04  
 Client ID: VES-103 (GW)  
 Sample Location: MA

Date Collected: 02/16/17 12:45  
 Date Received: 02/16/17  
 Field Prep: Field Filtered (Dissolved Metals)

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics - Westborough Lab</b>						
Diisopropyl Ether	ND		ug/l	2.0	--	1
Ethyl-Tert-Butyl-Ether	ND		ug/l	2.0	--	1
Tertiary-Amyl Methyl Ether	ND		ug/l	2.0	--	1
Tert-Butyl Alcohol	ND		ug/l	10	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	116		70-130
Toluene-d8	93		70-130
4-Bromofluorobenzene	97		70-130
Dibromofluoromethane	119		70-130

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704993  
**Report Date:** 02/21/17

**SAMPLE RESULTS**

Lab ID: L1704993-04  
Client ID: VES-103 (GW)  
Sample Location: MA  
Matrix: Water  
Analytical Method: 97,8260C-SIM  
Analytical Date: 02/20/17 09:16  
Analyst: MM

Date Collected: 02/16/17 12:45  
Date Received: 02/16/17  
Field Prep: Field Filtered (Dissolved Metals)

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics by SIM - Westborough Lab</b>						
1,4-Dioxane	ND		ug/l	3.0	--	1

**Project Name:** EAST BOSTON  
**Project Number:** 43068

Serial\_No:02211719:13

**Lab Number:** L1704993  
**Report Date:** 02/21/17

### SAMPLE RESULTS

Lab ID: L1704993-05  
Client ID: VES-123 (GW)  
Sample Location: MA  
  
Matrix: Water  
Analytical Method: 14,504.1  
Analytical Date: 02/17/17 16:08  
Analyst: AM

Date Collected: 02/16/17 15:10  
Date Received: 02/16/17  
Field Prep: Field Filtered (Dissolved Metals)  
Extraction Method:EPA 504.1  
Extraction Date: 02/17/17 12:35

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Microextractables by GC - Westborough Lab							
1,2-Dibromoethane	ND		ug/l	0.010	--	1	A

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704993  
**Report Date:** 02/21/17

**SAMPLE RESULTS**

Lab ID: L1704993-05  
Client ID: VES-123 (GW)  
Sample Location: MA

Date Collected: 02/16/17 15:10  
Date Received: 02/16/17  
Field Prep: Field Filtered (Dissolved Metals)

Matrix: Water  
Analytical Method: 97,8260C  
Analytical Date: 02/20/17 09:41  
Analyst: MM

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics - Westborough Lab</b>						
Methylene chloride	ND	ug/l	2.0	--	--	1
1,1-Dichloroethane	ND	ug/l	1.0	--	--	1
Chloroform	ND	ug/l	1.0	--	--	1
Carbon tetrachloride	ND	ug/l	1.0	--	--	1
1,2-Dichloropropane	ND	ug/l	1.0	--	--	1
Dibromochloromethane	ND	ug/l	1.0	--	--	1
1,1,2-Trichloroethane	ND	ug/l	1.0	--	--	1
Tetrachloroethene	ND	ug/l	1.0	--	--	1
Chlorobenzene	ND	ug/l	1.0	--	--	1
Trichlorofluoromethane	ND	ug/l	2.0	--	--	1
1,2-Dichloroethane	ND	ug/l	1.0	--	--	1
1,1,1-Trichloroethane	ND	ug/l	1.0	--	--	1
Bromodichloromethane	ND	ug/l	1.0	--	--	1
trans-1,3-Dichloropropene	ND	ug/l	0.50	--	--	1
cis-1,3-Dichloropropene	ND	ug/l	0.50	--	--	1
1,1-Dichloropropene	ND	ug/l	2.0	--	--	1
Bromoform	ND	ug/l	2.0	--	--	1
1,1,2,2-Tetrachloroethane	ND	ug/l	1.0	--	--	1
Benzene	ND	ug/l	0.50	--	--	1
Toluene	ND	ug/l	1.0	--	--	1
Ethylbenzene	ND	ug/l	1.0	--	--	1
Chloromethane	ND	ug/l	2.0	--	--	1
Bromomethane	ND	ug/l	2.0	--	--	1
Vinyl chloride	ND	ug/l	1.0	--	--	1
Chloroethane	ND	ug/l	2.0	--	--	1
1,1-Dichloroethene	ND	ug/l	1.0	--	--	1
trans-1,2-Dichloroethene	ND	ug/l	1.0	--	--	1
Trichloroethene	ND	ug/l	1.0	--	--	1
1,2-Dichlorobenzene	ND	ug/l	1.0	--	--	1



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704993  
**Report Date:** 02/21/17

**SAMPLE RESULTS**

Lab ID:	L1704993-05	Date Collected:	02/16/17 15:10
Client ID:	VES-123 (GW)	Date Received:	02/16/17
Sample Location:	MA	Field Prep:	Field Filtered (Dissolved Metals)

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics - Westborough Lab</b>						
1,3-Dichlorobenzene	ND	ug/l	1.0	--	--	1
1,4-Dichlorobenzene	ND	ug/l	1.0	--	--	1
Methyl tert butyl ether	ND	ug/l	2.0	--	--	1
p/m-Xylene	ND	ug/l	2.0	--	--	1
o-Xylene	ND	ug/l	1.0	--	--	1
cis-1,2-Dichloroethene	ND	ug/l	1.0	--	--	1
Dibromomethane	ND	ug/l	2.0	--	--	1
1,2,3-Trichloropropane	ND	ug/l	2.0	--	--	1
Styrene	ND	ug/l	1.0	--	--	1
Dichlorodifluoromethane	ND	ug/l	2.0	--	--	1
Acetone	ND	ug/l	5.0	--	--	1
Carbon disulfide	ND	ug/l	2.0	--	--	1
Methyl ethyl ketone	ND	ug/l	5.0	--	--	1
Methyl isobutyl ketone	ND	ug/l	5.0	--	--	1
2-Hexanone	ND	ug/l	5.0	--	--	1
Bromochloromethane	ND	ug/l	2.0	--	--	1
Tetrahydrofuran	ND	ug/l	2.0	--	--	1
2,2-Dichloropropane	ND	ug/l	2.0	--	--	1
1,2-Dibromoethane	ND	ug/l	2.0	--	--	1
1,3-Dichloropropane	ND	ug/l	2.0	--	--	1
1,1,1,2-Tetrachloroethane	ND	ug/l	1.0	--	--	1
Bromobenzene	ND	ug/l	2.0	--	--	1
n-Butylbenzene	ND	ug/l	2.0	--	--	1
sec-Butylbenzene	ND	ug/l	2.0	--	--	1
tert-Butylbenzene	ND	ug/l	2.0	--	--	1
o-Chlorotoluene	ND	ug/l	2.0	--	--	1
p-Chlorotoluene	ND	ug/l	2.0	--	--	1
1,2-Dibromo-3-chloropropane	ND	ug/l	2.0	--	--	1
Hexachlorobutadiene	ND	ug/l	0.60	--	--	1
Isopropylbenzene	ND	ug/l	2.0	--	--	1
p-Isopropyltoluene	ND	ug/l	2.0	--	--	1
Naphthalene	ND	ug/l	2.0	--	--	1
n-Propylbenzene	ND	ug/l	2.0	--	--	1
1,2,3-Trichlorobenzene	ND	ug/l	2.0	--	--	1
1,2,4-Trichlorobenzene	ND	ug/l	2.0	--	--	1
1,3,5-Trimethylbenzene	ND	ug/l	2.0	--	--	1
1,2,4-Trimethylbenzene	ND	ug/l	2.0	--	--	1
Diethyl ether	ND	ug/l	2.0	--	--	1



Project Name: EAST BOSTON

Lab Number: L1704993

Project Number: 43068

Report Date: 02/21/17

**SAMPLE RESULTS**

Lab ID: L1704993-05  
 Client ID: VES-123 (GW)  
 Sample Location: MA

Date Collected: 02/16/17 15:10  
 Date Received: 02/16/17  
 Field Prep: Field Filtered (Dissolved Metals)

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics - Westborough Lab</b>						
Diisopropyl Ether	ND		ug/l	2.0	--	1
Ethyl-Tert-Butyl-Ether	ND		ug/l	2.0	--	1
Tertiary-Amyl Methyl Ether	ND		ug/l	2.0	--	1
Tert-Butyl Alcohol	ND		ug/l	10	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	114		70-130
Toluene-d8	95		70-130
4-Bromofluorobenzene	97		70-130
Dibromofluoromethane	123		70-130

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704993  
**Report Date:** 02/21/17

**SAMPLE RESULTS**

Lab ID: L1704993-05  
Client ID: VES-123 (GW)  
Sample Location: MA

Date Collected: 02/16/17 15:10  
Date Received: 02/16/17  
Field Prep: Field Filtered (Dissolved Metals)

Matrix: Water  
Analytical Method: 97,8260C-SIM  
Analytical Date: 02/20/17 09:41  
Analyst: MM

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics by SIM - Westborough Lab</b>						
1,4-Dioxane	ND		ug/l	3.0	--	1

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704993  
**Report Date:** 02/21/17

**SAMPLE RESULTS**

Lab ID: L1704993-06  
Client ID: VES-121 (GW)  
Sample Location: MA

Date Collected: 02/16/17 10:15  
Date Received: 02/16/17  
Field Prep: Field Filtered (Dissolved Metals)

Matrix: Water  
Analytical Method: 97,8260C  
Analytical Date: 02/21/17 07:28  
Analyst: MM

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics - Westborough Lab</b>						
Methylene chloride	ND	ug/l	2.0	--	--	1
1,1-Dichloroethane	ND	ug/l	1.0	--	--	1
Chloroform	ND	ug/l	1.0	--	--	1
Carbon tetrachloride	ND	ug/l	1.0	--	--	1
1,2-Dichloropropane	ND	ug/l	1.0	--	--	1
Dibromochloromethane	ND	ug/l	1.0	--	--	1
1,1,2-Trichloroethane	ND	ug/l	1.0	--	--	1
Tetrachloroethene	ND	ug/l	1.0	--	--	1
Chlorobenzene	ND	ug/l	1.0	--	--	1
Trichlorofluoromethane	ND	ug/l	2.0	--	--	1
1,2-Dichloroethane	ND	ug/l	1.0	--	--	1
1,1,1-Trichloroethane	ND	ug/l	1.0	--	--	1
Bromodichloromethane	ND	ug/l	1.0	--	--	1
trans-1,3-Dichloropropene	ND	ug/l	0.50	--	--	1
cis-1,3-Dichloropropene	ND	ug/l	0.50	--	--	1
1,1-Dichloropropene	ND	ug/l	2.0	--	--	1
Bromoform	ND	ug/l	2.0	--	--	1
1,1,2,2-Tetrachloroethane	ND	ug/l	1.0	--	--	1
Benzene	ND	ug/l	0.50	--	--	1
Toluene	ND	ug/l	1.0	--	--	1
Ethylbenzene	ND	ug/l	1.0	--	--	1
Chloromethane	ND	ug/l	2.0	--	--	1
Bromomethane	ND	ug/l	2.0	--	--	1
Vinyl chloride	ND	ug/l	1.0	--	--	1
Chloroethane	ND	ug/l	2.0	--	--	1
1,1-Dichloroethene	ND	ug/l	1.0	--	--	1
trans-1,2-Dichloroethene	ND	ug/l	1.0	--	--	1
Trichloroethene	ND	ug/l	1.0	--	--	1
1,2-Dichlorobenzene	ND	ug/l	1.0	--	--	1



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704993  
**Report Date:** 02/21/17

**SAMPLE RESULTS**

Lab ID:	L1704993-06	Date Collected:	02/16/17 10:15
Client ID:	VES-121 (GW)	Date Received:	02/16/17
Sample Location:	MA	Field Prep:	Field Filtered (Dissolved Metals)

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics - Westborough Lab</b>						
1,3-Dichlorobenzene	ND	ug/l	1.0	--	--	1
1,4-Dichlorobenzene	ND	ug/l	1.0	--	--	1
Methyl tert butyl ether	ND	ug/l	2.0	--	--	1
p/m-Xylene	ND	ug/l	2.0	--	--	1
o-Xylene	ND	ug/l	1.0	--	--	1
cis-1,2-Dichloroethene	ND	ug/l	1.0	--	--	1
Dibromomethane	ND	ug/l	2.0	--	--	1
1,2,3-Trichloropropane	ND	ug/l	2.0	--	--	1
Styrene	ND	ug/l	1.0	--	--	1
Dichlorodifluoromethane	ND	ug/l	2.0	--	--	1
Acetone	ND	ug/l	5.0	--	--	1
Carbon disulfide	ND	ug/l	2.0	--	--	1
2-Butanone	ND	ug/l	5.0	--	--	1
4-Methyl-2-pentanone	ND	ug/l	5.0	--	--	1
2-Hexanone	ND	ug/l	5.0	--	--	1
Bromochloromethane	ND	ug/l	2.0	--	--	1
Tetrahydrofuran	ND	ug/l	2.0	--	--	1
2,2-Dichloropropane	ND	ug/l	2.0	--	--	1
1,2-Dibromoethane	ND	ug/l	2.0	--	--	1
1,3-Dichloropropane	ND	ug/l	2.0	--	--	1
1,1,1,2-Tetrachloroethane	ND	ug/l	1.0	--	--	1
Bromobenzene	ND	ug/l	2.0	--	--	1
n-Butylbenzene	ND	ug/l	2.0	--	--	1
sec-Butylbenzene	ND	ug/l	2.0	--	--	1
tert-Butylbenzene	ND	ug/l	2.0	--	--	1
o-Chlorotoluene	ND	ug/l	2.0	--	--	1
p-Chlorotoluene	ND	ug/l	2.0	--	--	1
1,2-Dibromo-3-chloropropane	ND	ug/l	2.0	--	--	1
Hexachlorobutadiene	ND	ug/l	0.60	--	--	1
Isopropylbenzene	ND	ug/l	2.0	--	--	1
p-Isopropyltoluene	ND	ug/l	2.0	--	--	1
Naphthalene	ND	ug/l	2.0	--	--	1
n-Propylbenzene	ND	ug/l	2.0	--	--	1
1,2,3-Trichlorobenzene	ND	ug/l	2.0	--	--	1
1,2,4-Trichlorobenzene	ND	ug/l	2.0	--	--	1
1,3,5-Trimethylbenzene	ND	ug/l	2.0	--	--	1
1,2,4-Trimethylbenzene	ND	ug/l	2.0	--	--	1
Ethyl ether	ND	ug/l	2.0	--	--	1



Project Name: EAST BOSTON

Lab Number: L1704993

Project Number: 43068

Report Date: 02/21/17

**SAMPLE RESULTS**

Lab ID: L1704993-06  
 Client ID: VES-121 (GW)  
 Sample Location: MA

Date Collected: 02/16/17 10:15  
 Date Received: 02/16/17  
 Field Prep: Field Filtered (Dissolved Metals)

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics - Westborough Lab</b>						
Isopropyl Ether	ND		ug/l	2.0	--	1
Ethyl-Tert-Butyl-Ether	ND		ug/l	2.0	--	1
Tertiary-Amyl Methyl Ether	ND		ug/l	2.0	--	1
1,4-Dioxane	ND		ug/l	250	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	94		70-130
Toluene-d8	98		70-130
4-Bromofluorobenzene	88		70-130
Dibromofluoromethane	100		70-130

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704993  
**Report Date:** 02/21/17

**Method Blank Analysis**  
**Batch Quality Control**

Analytical Method: 14,504.1  
Analytical Date: 02/17/17 14:25  
Analyst: AM

Extraction Method: EPA 504.1  
Extraction Date: 02/17/17 12:35

Parameter	Result	Qualifier	Units	RL	MDL
Microextractables by GC - Westborough Lab for sample(s): 01,03-05 Batch: WG978796-1					
1,2-Dibromoethane	ND		ug/l	0.010	--

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704993  
**Report Date:** 02/21/17

**Method Blank Analysis**  
**Batch Quality Control**

Analytical Method: 97,8260C  
Analytical Date: 02/20/17 06:45  
Analyst: MM

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics - Westborough Lab for sample(s):	01-05		Batch:	WG979299-5	
Methylene chloride	ND		ug/l	2.0	--
1,1-Dichloroethane	ND		ug/l	1.0	--
Chloroform	ND		ug/l	1.0	--
Carbon tetrachloride	ND		ug/l	1.0	--
1,2-Dichloropropane	ND		ug/l	1.0	--
Dibromochloromethane	ND		ug/l	1.0	--
1,1,2-Trichloroethane	ND		ug/l	1.0	--
Tetrachloroethene	ND		ug/l	1.0	--
Chlorobenzene	ND		ug/l	1.0	--
Trichlorofluoromethane	ND		ug/l	2.0	--
1,2-Dichloroethane	ND		ug/l	1.0	--
1,1,1-Trichloroethane	ND		ug/l	1.0	--
Bromodichloromethane	ND		ug/l	1.0	--
trans-1,3-Dichloropropene	ND		ug/l	0.50	--
cis-1,3-Dichloropropene	ND		ug/l	0.50	--
1,3-Dichloropropene, Total	ND		ug/l	0.50	--
1,1-Dichloropropene	ND		ug/l	2.0	--
Bromoform	ND		ug/l	2.0	--
1,1,2,2-Tetrachloroethane	ND		ug/l	1.0	--
Benzene	ND		ug/l	0.50	--
Toluene	ND		ug/l	1.0	--
Ethylbenzene	ND		ug/l	1.0	--
Chloromethane	ND		ug/l	2.0	--
Bromomethane	ND		ug/l	2.0	--
Vinyl chloride	ND		ug/l	1.0	--
Chloroethane	ND		ug/l	2.0	--
1,1-Dichloroethene	ND		ug/l	1.0	--
trans-1,2-Dichloroethene	ND		ug/l	1.0	--
Trichloroethene	ND		ug/l	1.0	--



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704993  
**Report Date:** 02/21/17

**Method Blank Analysis**  
**Batch Quality Control**

Analytical Method: 97,8260C  
Analytical Date: 02/20/17 06:45  
Analyst: MM

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics - Westborough Lab for sample(s):	01-05		Batch:	WG979299-5	
1,2-Dichlorobenzene	ND		ug/l	1.0	--
1,3-Dichlorobenzene	ND		ug/l	1.0	--
1,4-Dichlorobenzene	ND		ug/l	1.0	--
Methyl tert butyl ether	ND		ug/l	2.0	--
p/m-Xylene	ND		ug/l	2.0	--
o-Xylene	ND		ug/l	1.0	--
Xylene (Total)	ND		ug/l	1.0	--
cis-1,2-Dichloroethene	ND		ug/l	1.0	--
1,2-Dichloroethene (total)	ND		ug/l	1.0	--
Dibromomethane	ND		ug/l	2.0	--
1,2,3-Trichloropropane	ND		ug/l	2.0	--
Styrene	ND		ug/l	1.0	--
Dichlorodifluoromethane	ND		ug/l	2.0	--
Acetone	ND		ug/l	5.0	--
Carbon disulfide	ND		ug/l	2.0	--
2-Butanone	ND		ug/l	5.0	--
4-Methyl-2-pentanone	ND		ug/l	5.0	--
2-Hexanone	ND		ug/l	5.0	--
Bromochloromethane	ND		ug/l	2.0	--
Tetrahydrofuran	ND		ug/l	2.0	--
2,2-Dichloropropane	ND		ug/l	2.0	--
1,2-Dibromoethane	ND		ug/l	2.0	--
1,3-Dichloropropane	ND		ug/l	2.0	--
1,1,1,2-Tetrachloroethane	ND		ug/l	1.0	--
Bromobenzene	ND		ug/l	2.0	--
n-Butylbenzene	ND		ug/l	2.0	--
sec-Butylbenzene	ND		ug/l	2.0	--
tert-Butylbenzene	ND		ug/l	2.0	--
o-Chlorotoluene	ND		ug/l	2.0	--



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704993  
**Report Date:** 02/21/17

### Method Blank Analysis Batch Quality Control

Analytical Method: 97,8260C  
Analytical Date: 02/20/17 06:45  
Analyst: MM

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics - Westborough Lab for sample(s):	01-05		Batch:	WG979299-5	
p-Chlorotoluene	ND		ug/l	2.0	--
1,2-Dibromo-3-chloropropane	ND		ug/l	2.0	--
Hexachlorobutadiene	ND		ug/l	0.60	--
Isopropylbenzene	ND		ug/l	2.0	--
p-Isopropyltoluene	ND		ug/l	2.0	--
Naphthalene	ND		ug/l	2.0	--
n-Propylbenzene	ND		ug/l	2.0	--
1,2,3-Trichlorobenzene	ND		ug/l	2.0	--
1,2,4-Trichlorobenzene	ND		ug/l	2.0	--
1,3,5-Trimethylbenzene	ND		ug/l	2.0	--
1,2,4-Trimethylbenzene	ND		ug/l	2.0	--
Ethyl ether	ND		ug/l	2.0	--
Isopropyl Ether	ND		ug/l	2.0	--
Ethyl-Tert-Butyl-Ether	ND		ug/l	2.0	--
Tertiary-Amyl Methyl Ether	ND		ug/l	2.0	--
1,4-Dioxane	ND		ug/l	250	--
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND		ug/l	2.0	--
tert-Butyl Alcohol	ND		ug/l	10	--
2-Chloroethylvinyl ether	ND		ug/l	10	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	113		70-130
Toluene-d8	94		70-130
4-Bromofluorobenzene	99		70-130
Dibromofluoromethane	118		70-130



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704993  
**Report Date:** 02/21/17

**Method Blank Analysis**  
**Batch Quality Control**

Analytical Method: 97,8260C-SIM  
Analytical Date: 02/20/17 06:45  
Analyst: MM

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics by SIM - Westborough Lab for sample(s): 01,03-05 Batch: WG979334-5					
1,4-Dioxane	ND		ug/l	3.0	--

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704993  
**Report Date:** 02/21/17

### Method Blank Analysis Batch Quality Control

Analytical Method: 97,8260C  
Analytical Date: 02/21/17 06:56  
Analyst: MM

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics - Westborough Lab for sample(s): 06 Batch: WG979616-5					
Methylene chloride	ND	ug/l	2.0	--	
1,1-Dichloroethane	ND	ug/l	1.0	--	
Chloroform	ND	ug/l	1.0	--	
Carbon tetrachloride	ND	ug/l	1.0	--	
1,2-Dichloropropane	ND	ug/l	1.0	--	
Dibromochloromethane	ND	ug/l	1.0	--	
1,1,2-Trichloroethane	ND	ug/l	1.0	--	
Tetrachloroethene	ND	ug/l	1.0	--	
Chlorobenzene	ND	ug/l	1.0	--	
Trichlorofluoromethane	ND	ug/l	2.0	--	
1,2-Dichloroethane	ND	ug/l	1.0	--	
1,1,1-Trichloroethane	ND	ug/l	1.0	--	
Bromodichloromethane	ND	ug/l	1.0	--	
trans-1,3-Dichloropropene	ND	ug/l	0.50	--	
cis-1,3-Dichloropropene	ND	ug/l	0.50	--	
1,3-Dichloropropene, Total	ND	ug/l	0.50	--	
1,1-Dichloropropene	ND	ug/l	2.0	--	
Bromoform	ND	ug/l	2.0	--	
1,1,2,2-Tetrachloroethane	ND	ug/l	1.0	--	
Benzene	ND	ug/l	0.50	--	
Toluene	ND	ug/l	1.0	--	
Ethylbenzene	ND	ug/l	1.0	--	
Chloromethane	ND	ug/l	2.0	--	
Bromomethane	ND	ug/l	2.0	--	
Vinyl chloride	ND	ug/l	1.0	--	
Chloroethane	ND	ug/l	2.0	--	
1,1-Dichloroethene	ND	ug/l	1.0	--	
trans-1,2-Dichloroethene	ND	ug/l	1.0	--	
Trichloroethene	ND	ug/l	1.0	--	



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704993  
**Report Date:** 02/21/17

**Method Blank Analysis**  
**Batch Quality Control**

Analytical Method: 97,8260C  
Analytical Date: 02/21/17 06:56  
Analyst: MM

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics - Westborough Lab for sample(s):	06	Batch:	WG979616-5		
1,2-Dichlorobenzene	ND	ug/l	1.0	--	
1,3-Dichlorobenzene	ND	ug/l	1.0	--	
1,4-Dichlorobenzene	ND	ug/l	1.0	--	
Methyl tert butyl ether	ND	ug/l	2.0	--	
p/m-Xylene	ND	ug/l	2.0	--	
o-Xylene	ND	ug/l	1.0	--	
Xylene (Total)	ND	ug/l	1.0	--	
cis-1,2-Dichloroethene	ND	ug/l	1.0	--	
1,2-Dichloroethene (total)	ND	ug/l	1.0	--	
Dibromomethane	ND	ug/l	2.0	--	
1,2,3-Trichloropropane	ND	ug/l	2.0	--	
Styrene	ND	ug/l	1.0	--	
Dichlorodifluoromethane	ND	ug/l	2.0	--	
Acetone	ND	ug/l	5.0	--	
Carbon disulfide	ND	ug/l	2.0	--	
2-Butanone	ND	ug/l	5.0	--	
4-Methyl-2-pentanone	ND	ug/l	5.0	--	
2-Hexanone	ND	ug/l	5.0	--	
Bromochloromethane	ND	ug/l	2.0	--	
Tetrahydrofuran	ND	ug/l	2.0	--	
2,2-Dichloropropane	ND	ug/l	2.0	--	
1,2-Dibromoethane	ND	ug/l	2.0	--	
1,3-Dichloropropane	ND	ug/l	2.0	--	
1,1,1,2-Tetrachloroethane	ND	ug/l	1.0	--	
Bromobenzene	ND	ug/l	2.0	--	
n-Butylbenzene	ND	ug/l	2.0	--	
sec-Butylbenzene	ND	ug/l	2.0	--	
tert-Butylbenzene	ND	ug/l	2.0	--	
o-Chlorotoluene	ND	ug/l	2.0	--	



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704993  
**Report Date:** 02/21/17

### Method Blank Analysis Batch Quality Control

Analytical Method: 97,8260C  
Analytical Date: 02/21/17 06:56  
Analyst: MM

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics - Westborough Lab for sample(s):	06	Batch:	WG979616-5		
p-Chlorotoluene	ND		ug/l	2.0	--
1,2-Dibromo-3-chloropropane	ND		ug/l	2.0	--
Hexachlorobutadiene	ND		ug/l	0.60	--
Isopropylbenzene	ND		ug/l	2.0	--
p-Isopropyltoluene	ND		ug/l	2.0	--
Naphthalene	ND		ug/l	2.0	--
n-Propylbenzene	ND		ug/l	2.0	--
1,2,3-Trichlorobenzene	ND		ug/l	2.0	--
1,2,4-Trichlorobenzene	ND		ug/l	2.0	--
1,3,5-Trimethylbenzene	ND		ug/l	2.0	--
1,2,4-Trimethylbenzene	ND		ug/l	2.0	--
Ethyl ether	ND		ug/l	2.0	--
Isopropyl Ether	ND		ug/l	2.0	--
Ethyl-Tert-Butyl-Ether	ND		ug/l	2.0	--
Tertiary-Amyl Methyl Ether	ND		ug/l	2.0	--
1,4-Dioxane	ND		ug/l	250	--
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND		ug/l	2.0	--
tert-Butyl Alcohol	ND		ug/l	10	--
2-Chloroethylvinyl ether	ND		ug/l	10	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	93		70-130
Toluene-d8	97		70-130
4-Bromofluorobenzene	87		70-130
Dibromofluoromethane	100		70-130



**Lab Control Sample Analysis**  
**Batch Quality Control**

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704993  
**Report Date:** 02/21/17

<b>Parameter</b>	<i>LCS</i> %Recovery	<i>LCSD</i> %Recovery	<i>%Recovery Limits</i>	<i>RPD</i>	<i>Qual</i>	<i>RPD Limits</i>	<i>Column</i>
	<i>Qual</i>	<i>Qual</i>				<i>Qual</i>	
Microextractables by GC - Westborough Lab Associated sample(s): 01,03-05 Batch: WG978796-2							
1,2-Dibromoethane	96	-	70-130	-	20	A	

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704993  
**Report Date:** 02/21/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics - Westborough Lab Associated sample(s): 01-05 Batch: WG979299-3 WG979299-4								
Methylene chloride	100		110		70-130	10		20
1,1-Dichloroethane	110		110		70-130	0		20
Chloroform	110		110		70-130	0		20
Carbon tetrachloride	120		120		70-130	0		20
1,2-Dichloropropane	100		100		70-130	0		20
Dibromochloromethane	110		110		70-130	0		20
1,1,2-Trichloroethane	100		100		70-130	0		20
Tetrachloroethene	110		110		70-130	0		20
Chlorobenzene	100		99		70-130	1		20
Trichlorofluoromethane	130		120		70-130	8		20
1,2-Dichloroethane	110		110		70-130	0		20
1,1,1-Trichloroethane	120		120		70-130	0		20
Bromodichloromethane	110		100		70-130	10		20
trans-1,3-Dichloropropene	98		98		70-130	0		20
cis-1,3-Dichloropropene	100		100		70-130	0		20
1,1-Dichloropropene	100		100		70-130	0		20
Bromoform	93		94		70-130	1		20
1,1,2,2-Tetrachloroethane	91		92		70-130	1		20
Benzene	100		100		70-130	0		20
Toluene	100		99		70-130	1		20
Ethylbenzene	100		100		70-130	0		20

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704993  
**Report Date:** 02/21/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics - Westborough Lab Associated sample(s): 01-05 Batch: WG979299-3 WG979299-4								
Chloromethane	110		100		70-130	10		20
Bromomethane	93		110		70-130	17		20
Vinyl chloride	100		100		70-130	0		20
Chloroethane	100		89		70-130	12		20
1,1-Dichloroethene	110		88		70-130	22	Q	20
trans-1,2-Dichloroethene	100		100		70-130	0		20
Trichloroethene	110		110		70-130	0		20
1,2-Dichlorobenzene	95		95		70-130	0		20
1,3-Dichlorobenzene	99		97		70-130	2		20
1,4-Dichlorobenzene	97		95		70-130	2		20
Methyl tert butyl ether	98		100		70-130	2		20
p/m-Xylene	105		100		70-130	5		20
o-Xylene	100		95		70-130	5		20
cis-1,2-Dichloroethene	100		100		70-130	0		20
Dibromomethane	110		110		70-130	0		20
1,2,3-Trichloropropane	92		89		70-130	3		20
Styrene	95		90		70-130	5		20
Dichlorodifluoromethane	100		100		70-130	0		20
Acetone	110		110		70-130	0		20
Carbon disulfide	110		85		70-130	26	Q	20
2-Butanone	100		100		70-130	0		20

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704993  
**Report Date:** 02/21/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics - Westborough Lab Associated sample(s): 01-05 Batch: WG979299-3 WG979299-4								
4-Methyl-2-pentanone	82		88		70-130	7		20
2-Hexanone	75		74		70-130	1		20
Bromochloromethane	120		120		70-130	0		20
Tetrahydrofuran	98		100		70-130	2		20
2,2-Dichloropropane	120		110		70-130	9		20
1,2-Dibromoethane	100		100		70-130	0		20
1,3-Dichloropropane	99		100		70-130	1		20
1,1,1,2-Tetrachloroethane	110		110		70-130	0		20
Bromobenzene	94		94		70-130	0		20
n-Butylbenzene	91		90		70-130	1		20
sec-Butylbenzene	120		100		70-130	18		20
tert-Butylbenzene	86		84		70-130	2		20
o-Chlorotoluene	97		96		70-130	1		20
p-Chlorotoluene	94		94		70-130	0		20
1,2-Dibromo-3-chloropropane	91		94		70-130	3		20
Hexachlorobutadiene	99		98		70-130	1		20
Isopropylbenzene	85		84		70-130	1		20
p-Isopropyltoluene	88		86		70-130	2		20
Naphthalene	71		74		70-130	4		20
n-Propylbenzene	93		93		70-130	0		20
1,2,3-Trichlorobenzene	90		93		70-130	3		20

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704993  
**Report Date:** 02/21/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics - Westborough Lab Associated sample(s): 01-05 Batch: WG979299-3 WG979299-4								
1,2,4-Trichlorobenzene	82		81		70-130	1		20
1,3,5-Trimethylbenzene	93		91		70-130	2		20
1,2,4-Trimethylbenzene	91		89		70-130	2		20
Ethyl ether	99		81		70-130	20		20
Isopropyl Ether	90		92		70-130	2		20
Ethyl-Tert-Butyl-Ether	97		100		70-130	3		20
Tertiary-Amyl Methyl Ether	94		98		70-130	4		20
1,4-Dioxane	92		102		70-130	10		20
1,1,2-Trichloro-1,2,2-Trifluoroethane	120		100		70-130	18		20
tert-Butyl Alcohol	100		110		70-130	10		20
2-Chloroethylvinyl ether	<b>68</b>	Q	70		70-130	3		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	104		105		70-130
Toluene-d8	96		96		70-130
4-Bromofluorobenzene	92		95		70-130
Dibromofluoromethane	104		105		70-130

**Lab Control Sample Analysis**  
**Batch Quality Control**

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704993  
**Report Date:** 02/21/17

<b>Parameter</b>	<i>LCS</i> %Recovery	<i>Qual</i>	<i>LCSD</i> %Recovery	<i>Qual</i>	<i>%Recovery</i> <i>Limits</i>	<i>RPD</i>	<i>Qual</i>	<i>RPD</i> <i>Limits</i>
MCP Volatile Organics by SIM - Westborough Lab Associated sample(s): 01,03-05 Batch: WG979334-3 WG979334-4								
1,4-Dioxane	100		110		70-130	10		20

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704993  
**Report Date:** 02/21/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics - Westborough Lab Associated sample(s): 06 Batch: WG979616-3 WG979616-4								
Methylene chloride	100		110		70-130	10		20
1,1-Dichloroethane	100		110		70-130	10		20
Chloroform	100		110		70-130	10		20
Carbon tetrachloride	98		100		70-130	2		20
1,2-Dichloropropane	100		100		70-130	0		20
Dibromochloromethane	99		100		70-130	1		20
1,1,2-Trichloroethane	97		99		70-130	2		20
Tetrachloroethene	100		110		70-130	10		20
Chlorobenzene	99		100		70-130	1		20
Trichlorofluoromethane	110		110		70-130	0		20
1,2-Dichloroethane	100		100		70-130	0		20
1,1,1-Trichloroethane	100		110		70-130	10		20
Bromodichloromethane	100		100		70-130	0		20
trans-1,3-Dichloropropene	91		91		70-130	0		20
cis-1,3-Dichloropropene	92		95		70-130	3		20
1,1-Dichloropropene	100		110		70-130	10		20
Bromoform	80		81		70-130	1		20
1,1,2,2-Tetrachloroethane	88		90		70-130	2		20
Benzene	100		110		70-130	10		20
Toluene	100		100		70-130	0		20
Ethylbenzene	99		100		70-130	1		20

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704993  
**Report Date:** 02/21/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics - Westborough Lab Associated sample(s): 06 Batch: WG979616-3 WG979616-4								
Chloromethane	84		87		70-130	4		20
Bromomethane	86		86		70-130	0		20
Vinyl chloride	100		110		70-130	10		20
Chloroethane	110		110		70-130	0		20
1,1-Dichloroethene	110		110		70-130	0		20
trans-1,2-Dichloroethene	110		110		70-130	0		20
Trichloroethene	100		110		70-130	10		20
1,2-Dichlorobenzene	98		100		70-130	2		20
1,3-Dichlorobenzene	95		98		70-130	3		20
1,4-Dichlorobenzene	97		99		70-130	2		20
Methyl tert butyl ether	100		100		70-130	0		20
p/m-Xylene	100		100		70-130	0		20
o-Xylene	100		100		70-130	0		20
cis-1,2-Dichloroethene	110		110		70-130	0		20
Dibromomethane	110		110		70-130	0		20
1,2,3-Trichloropropane	86		87		70-130	1		20
Styrene	100		105		70-130	5		20
Dichlorodifluoromethane	94		97		70-130	3		20
Acetone	97		100		70-130	3		20
Carbon disulfide	100		110		70-130	10		20
2-Butanone	97		95		70-130	2		20

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704993  
**Report Date:** 02/21/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics - Westborough Lab Associated sample(s): 06 Batch: WG979616-3 WG979616-4								
4-Methyl-2-pentanone	90		90		70-130	0		20
2-Hexanone	91		88		70-130	3		20
Bromochloromethane	110		110		70-130	0		20
Tetrahydrofuran	99		98		70-130	1		20
2,2-Dichloropropane	98		100		70-130	2		20
1,2-Dibromoethane	100		100		70-130	0		20
1,3-Dichloropropane	97		97		70-130	0		20
1,1,1,2-Tetrachloroethane	100		100		70-130	0		20
Bromobenzene	93		97		70-130	4		20
n-Butylbenzene	100		100		70-130	0		20
sec-Butylbenzene	98		100		70-130	2		20
tert-Butylbenzene	96		100		70-130	4		20
o-Chlorotoluene	92		95		70-130	3		20
p-Chlorotoluene	92		95		70-130	3		20
1,2-Dibromo-3-chloropropane	98		96		70-130	2		20
Hexachlorobutadiene	98		100		70-130	2		20
Isopropylbenzene	93		97		70-130	4		20
p-Isopropyltoluene	100		100		70-130	0		20
Naphthalene	99		98		70-130	1		20
n-Propylbenzene	94		98		70-130	4		20
1,2,3-Trichlorobenzene	100		100		70-130	0		20

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704993  
**Report Date:** 02/21/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics - Westborough Lab Associated sample(s): 06 Batch: WG979616-3 WG979616-4								
1,2,4-Trichlorobenzene	100		100		70-130	0		20
1,3,5-Trimethylbenzene	93		97		70-130	4		20
1,2,4-Trimethylbenzene	97		99		70-130	2		20
Ethyl ether	110		110		70-130	0		20
Isopropyl Ether	100		100		70-130	0		20
Ethyl-Tert-Butyl-Ether	100		100		70-130	0		20
Tertiary-Amyl Methyl Ether	100		100		70-130	0		20
1,4-Dioxane	96		104		70-130	8		20
1,1,2-Trichloro-1,2,2-Trifluoroethane	110		120		70-130	9		20
tert-Butyl Alcohol	100		94		70-130	6		20
2-Chloroethylvinyl ether	94		97		70-130	3		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	93		96		70-130
Toluene-d8	97		97		70-130
4-Bromofluorobenzene	95		94		70-130
Dibromofluoromethane	103		102		70-130

**Matrix Spike Analysis**  
**Batch Quality Control**

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704993  
**Report Date:** 02/21/17

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	RPD Qual	RPD Limits	Column
Microextractables by GC - Westborough Lab Associated sample(s): 01,03-05 QC Batch ID: WG978796-3 QC Sample: L1704993-01 Client ID: VES-101 (GW)													
1,2-Dibromoethane	ND	0.252	0.256	102	-	-	-	-	70-130	-	20	A	

# **SEMIVOLATILES**



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704993  
**Report Date:** 02/21/17

**SAMPLE RESULTS**

Lab ID: L1704993-01  
Client ID: VES-101 (GW)  
Sample Location: MA  
Matrix: Water  
Analytical Method: 1,8270D  
Analytical Date: 02/17/17 22:04  
Analyst: RC

Date Collected: 02/16/17 08:40  
Date Received: 02/16/17  
Field Prep: Field Filtered (Dissolved Metals)  
Extraction Method:EPA 3510C  
Extraction Date: 02/17/17 05:37

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>Semivolatile Organics by GC/MS - Westborough Lab</b>						
Benzidine	ND	ug/l	20	--	--	1
1,2,4-Trichlorobenzene	ND	ug/l	4.9	--	--	1
Bis(2-chloroethyl)ether	ND	ug/l	2.0	--	--	1
1,2-Dichlorobenzene	ND	ug/l	2.0	--	--	1
1,3-Dichlorobenzene	ND	ug/l	2.0	--	--	1
1,4-Dichlorobenzene	ND	ug/l	2.0	--	--	1
3,3'-Dichlorobenzidine	ND	ug/l	4.9	--	--	1
2,4-Dinitrotoluene	ND	ug/l	4.9	--	--	1
2,6-Dinitrotoluene	ND	ug/l	4.9	--	--	1
Azobenzene	ND	ug/l	2.0	--	--	1
4-Chlorophenyl phenyl ether	ND	ug/l	2.0	--	--	1
4-Bromophenyl phenyl ether	ND	ug/l	2.0	--	--	1
Bis(2-chloroisopropyl)ether	ND	ug/l	2.0	--	--	1
Bis(2-chloroethoxy)methane	ND	ug/l	4.9	--	--	1
Hexachlorocyclopentadiene	ND	ug/l	20	--	--	1
Isophorone	ND	ug/l	4.9	--	--	1
Nitrobenzene	ND	ug/l	2.0	--	--	1
NDPA/DPA	ND	ug/l	2.0	--	--	1
n-Nitrosodi-n-propylamine	ND	ug/l	4.9	--	--	1
Bis(2-ethylhexyl)phthalate	ND	ug/l	2.9	--	--	1
Butyl benzyl phthalate	ND	ug/l	4.9	--	--	1
Di-n-butylphthalate	ND	ug/l	4.9	--	--	1
Di-n-octylphthalate	ND	ug/l	4.9	--	--	1
Diethyl phthalate	ND	ug/l	4.9	--	--	1
Dimethyl phthalate	ND	ug/l	4.9	--	--	1
Biphenyl	ND	ug/l	2.0	--	--	1
Aniline	ND	ug/l	2.0	--	--	1
4-Chloroaniline	ND	ug/l	4.9	--	--	1
2-Nitroaniline	ND	ug/l	4.9	--	--	1



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704993  
**Report Date:** 02/21/17

**SAMPLE RESULTS**

Lab ID:	L1704993-01	Date Collected:	02/16/17 08:40
Client ID:	VES-101 (GW)	Date Received:	02/16/17
Sample Location:	MA	Field Prep:	Field Filtered (Dissolved Metals)

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>Semivolatile Organics by GC/MS - Westborough Lab</b>						
3-Nitroaniline	ND	ug/l	4.9	--	--	1
4-Nitroaniline	ND	ug/l	4.9	--	--	1
Dibenzofuran	ND	ug/l	2.0	--	--	1
n-Nitrosodimethylamine	ND	ug/l	2.0	--	--	1
2,4,6-Trichlorophenol	ND	ug/l	4.9	--	--	1
p-Chloro-m-cresol	ND	ug/l	2.0	--	--	1
2-Chlorophenol	ND	ug/l	2.0	--	--	1
2,4-Dichlorophenol	ND	ug/l	4.9	--	--	1
2,4-Dimethylphenol	ND	ug/l	4.9	--	--	1
2-Nitrophenol	ND	ug/l	9.8	--	--	1
4-Nitrophenol	ND	ug/l	9.8	--	--	1
2,4-Dinitrophenol	ND	ug/l	20	--	--	1
4,6-Dinitro-o-cresol	ND	ug/l	9.8	--	--	1
Phenol	ND	ug/l	4.9	--	--	1
2-Methylphenol	ND	ug/l	4.9	--	--	1
3-Methylphenol/4-Methylphenol	ND	ug/l	4.9	--	--	1
2,4,5-Trichlorophenol	ND	ug/l	4.9	--	--	1
Benzoic Acid	ND	ug/l	49	--	--	1
Benzyl Alcohol	ND	ug/l	2.0	--	--	1
Carbazole	ND	ug/l	2.0	--	--	1
Pyridine	ND	ug/l	3.4	--	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	38		21-120
Phenol-d6	33		10-120
Nitrobenzene-d5	58		23-120
2-Fluorobiphenyl	60		15-120
2,4,6-Tribromophenol	57		10-120
4-Terphenyl-d14	64		41-149

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704993  
**Report Date:** 02/21/17

**SAMPLE RESULTS**

Lab ID:	L1704993-01	Date Collected:	02/16/17 08:40
Client ID:	VES-101 (GW)	Date Received:	02/16/17
Sample Location:	MA	Field Prep:	Field Filtered (Dissolved Metals)
Matrix:	Water	Extraction Method:	EPA 3510C
Analytical Method:	1,8270D-SIM	Extraction Date:	02/17/17 05:37
Analytical Date:	02/17/17 18:48		
Analyst:	DV		

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>Semivolatile Organics by GC/MS-SIM - Westborough Lab</b>						
Acenaphthene	ND	ug/l	0.10	--	--	1
2-Chloronaphthalene	ND	ug/l	0.20	--	--	1
Fluoranthene	ND	ug/l	0.20	--	--	1
Hexachlorobutadiene	ND	ug/l	0.49	--	--	1
Naphthalene	ND	ug/l	0.20	--	--	1
Benzo(a)anthracene	ND	ug/l	0.20	--	--	1
Benzo(a)pyrene	ND	ug/l	0.20	--	--	1
Benzo(b)fluoranthene	ND	ug/l	0.20	--	--	1
Benzo(k)fluoranthene	ND	ug/l	0.20	--	--	1
Chrysene	ND	ug/l	0.20	--	--	1
Acenaphthylene	ND	ug/l	0.20	--	--	1
Anthracene	ND	ug/l	0.20	--	--	1
Benzo(ghi)perylene	ND	ug/l	0.20	--	--	1
Fluorene	ND	ug/l	0.20	--	--	1
Phenanthrene	ND	ug/l	0.20	--	--	1
Dibenzo(a,h)anthracene	ND	ug/l	0.20	--	--	1
Indeno(1,2,3-cd)pyrene	ND	ug/l	0.20	--	--	1
Pyrene	ND	ug/l	0.20	--	--	1
1-Methylnaphthalene	ND	ug/l	0.20	--	--	1
2-Methylnaphthalene	ND	ug/l	0.20	--	--	1
Pentachlorophenol	ND	ug/l	0.78	--	--	1
Hexachlorobenzene	ND	ug/l	0.78	--	--	1
Hexachloroethane	ND	ug/l	0.78	--	--	1

Project Name: EAST BOSTON

Lab Number: L1704993

Project Number: 43068

Report Date: 02/21/17

**SAMPLE RESULTS**

Lab ID: L1704993-01

Date Collected: 02/16/17 08:40

Client ID: VES-101 (GW)

Date Received: 02/16/17

Sample Location: MA

Field Prep: Field Filtered (Dissolved Metals)

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	44		21-120
Phenol-d6	38		10-120
Nitrobenzene-d5	65		23-120
2-Fluorobiphenyl	63		15-120
2,4,6-Tribromophenol	82		10-120
4-Terphenyl-d14	77		41-149

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704993  
**Report Date:** 02/21/17

**SAMPLE RESULTS**

Lab ID: L1704993-03  
Client ID: VES-102 (GW)  
Sample Location: MA  
Matrix: Water  
Analytical Method: 1,8270D  
Analytical Date: 02/21/17 01:06  
Analyst: KV

Date Collected: 02/16/17 13:35  
Date Received: 02/16/17  
Field Prep: Field Filtered (Dissolved Metals)  
Extraction Method:EPA 3510C  
Extraction Date: 02/17/17 05:37

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>Semivolatile Organics by GC/MS - Westborough Lab</b>						
Benzidine	ND	ug/l	20	--	--	1
1,2,4-Trichlorobenzene	ND	ug/l	4.9	--	--	1
Bis(2-chloroethyl)ether	ND	ug/l	2.0	--	--	1
1,2-Dichlorobenzene	ND	ug/l	2.0	--	--	1
1,3-Dichlorobenzene	ND	ug/l	2.0	--	--	1
1,4-Dichlorobenzene	ND	ug/l	2.0	--	--	1
3,3'-Dichlorobenzidine	ND	ug/l	4.9	--	--	1
2,4-Dinitrotoluene	ND	ug/l	4.9	--	--	1
2,6-Dinitrotoluene	ND	ug/l	4.9	--	--	1
Azobenzene	ND	ug/l	2.0	--	--	1
4-Chlorophenyl phenyl ether	ND	ug/l	2.0	--	--	1
4-Bromophenyl phenyl ether	ND	ug/l	2.0	--	--	1
Bis(2-chloroisopropyl)ether	ND	ug/l	2.0	--	--	1
Bis(2-chloroethoxy)methane	ND	ug/l	4.9	--	--	1
Hexachlorocyclopentadiene	ND	ug/l	20	--	--	1
Isophorone	ND	ug/l	4.9	--	--	1
Nitrobenzene	ND	ug/l	2.0	--	--	1
NDPA/DPA	ND	ug/l	2.0	--	--	1
n-Nitrosodi-n-propylamine	ND	ug/l	4.9	--	--	1
Bis(2-ethylhexyl)phthalate	3.6	ug/l	3.0	--	--	1
Butyl benzyl phthalate	ND	ug/l	4.9	--	--	1
Di-n-butylphthalate	ND	ug/l	4.9	--	--	1
Di-n-octylphthalate	ND	ug/l	4.9	--	--	1
Diethyl phthalate	ND	ug/l	4.9	--	--	1
Dimethyl phthalate	ND	ug/l	4.9	--	--	1
Biphenyl	ND	ug/l	2.0	--	--	1
Aniline	ND	ug/l	2.0	--	--	1
4-Chloroaniline	ND	ug/l	4.9	--	--	1
2-Nitroaniline	ND	ug/l	4.9	--	--	1



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704993  
**Report Date:** 02/21/17

**SAMPLE RESULTS**

Lab ID:	L1704993-03	Date Collected:	02/16/17 13:35
Client ID:	VES-102 (GW)	Date Received:	02/16/17
Sample Location:	MA	Field Prep:	Field Filtered (Dissolved Metals)

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>Semivolatile Organics by GC/MS - Westborough Lab</b>						
3-Nitroaniline	ND	ug/l	4.9	--	--	1
4-Nitroaniline	ND	ug/l	4.9	--	--	1
Dibenzofuran	ND	ug/l	2.0	--	--	1
n-Nitrosodimethylamine	ND	ug/l	2.0	--	--	1
2,4,6-Trichlorophenol	ND	ug/l	4.9	--	--	1
p-Chloro-m-cresol	ND	ug/l	2.0	--	--	1
2-Chlorophenol	ND	ug/l	2.0	--	--	1
2,4-Dichlorophenol	ND	ug/l	4.9	--	--	1
2,4-Dimethylphenol	ND	ug/l	4.9	--	--	1
2-Nitrophenol	ND	ug/l	9.9	--	--	1
4-Nitrophenol	ND	ug/l	9.9	--	--	1
2,4-Dinitrophenol	ND	ug/l	20	--	--	1
4,6-Dinitro-o-cresol	ND	ug/l	9.9	--	--	1
Phenol	ND	ug/l	4.9	--	--	1
2-Methylphenol	ND	ug/l	4.9	--	--	1
3-Methylphenol/4-Methylphenol	ND	ug/l	4.9	--	--	1
2,4,5-Trichlorophenol	ND	ug/l	4.9	--	--	1
Benzoic Acid	ND	ug/l	49	--	--	1
Benzyl Alcohol	ND	ug/l	2.0	--	--	1
Carbazole	ND	ug/l	2.0	--	--	1
Pyridine	ND	ug/l	3.5	--	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	50		21-120
Phenol-d6	39		10-120
Nitrobenzene-d5	70		23-120
2-Fluorobiphenyl	70		15-120
2,4,6-Tribromophenol	78		10-120
4-Terphenyl-d14	78		41-149

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704993  
**Report Date:** 02/21/17

**SAMPLE RESULTS**

Lab ID: L1704993-03  
Client ID: VES-102 (GW)  
Sample Location: MA  
Matrix: Water  
Analytical Method: 1,8270D-SIM  
Analytical Date: 02/17/17 15:33  
Analyst: DV

Date Collected: 02/16/17 13:35  
Date Received: 02/16/17  
Field Prep: Field Filtered (Dissolved Metals)  
Extraction Method:EPA 3510C  
Extraction Date: 02/17/17 05:37

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>Semivolatile Organics by GC/MS-SIM - Westborough Lab</b>						
Acenaphthene	0.32	ug/l	0.10	--	--	1
2-Chloronaphthalene	ND	ug/l	0.20	--	--	1
Fluoranthene	ND	ug/l	0.20	--	--	1
Hexachlorobutadiene	ND	ug/l	0.49	--	--	1
Naphthalene	ND	ug/l	0.20	--	--	1
Benzo(a)anthracene	ND	ug/l	0.20	--	--	1
Benzo(a)pyrene	ND	ug/l	0.20	--	--	1
Benzo(b)fluoranthene	ND	ug/l	0.20	--	--	1
Benzo(k)fluoranthene	ND	ug/l	0.20	--	--	1
Chrysene	ND	ug/l	0.20	--	--	1
Acenaphthylene	ND	ug/l	0.20	--	--	1
Anthracene	ND	ug/l	0.20	--	--	1
Benzo(ghi)perylene	ND	ug/l	0.20	--	--	1
Fluorene	0.20	ug/l	0.20	--	--	1
Phenanthrene	ND	ug/l	0.20	--	--	1
Dibenzo(a,h)anthracene	ND	ug/l	0.20	--	--	1
Indeno(1,2,3-cd)pyrene	ND	ug/l	0.20	--	--	1
Pyrene	ND	ug/l	0.20	--	--	1
1-Methylnaphthalene	ND	ug/l	0.20	--	--	1
2-Methylnaphthalene	ND	ug/l	0.20	--	--	1
Pentachlorophenol	ND	ug/l	0.79	--	--	1
Hexachlorobenzene	ND	ug/l	0.79	--	--	1
Hexachloroethane	ND	ug/l	0.79	--	--	1

Project Name: EAST BOSTON

Lab Number: L1704993

Project Number: 43068

Report Date: 02/21/17

**SAMPLE RESULTS**

Lab ID: L1704993-03

Date Collected: 02/16/17 13:35

Client ID: VES-102 (GW)

Date Received: 02/16/17

Sample Location: MA

Field Prep: Field Filtered (Dissolved Metals)

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	45		21-120
Phenol-d6	37		10-120
Nitrobenzene-d5	63		23-120
2-Fluorobiphenyl	55		15-120
2,4,6-Tribromophenol	77		10-120
4-Terphenyl-d14	76		41-149

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704993  
**Report Date:** 02/21/17

**SAMPLE RESULTS**

Lab ID: L1704993-04  
Client ID: VES-103 (GW)  
Sample Location: MA  
Matrix: Water  
Analytical Method: 1,8270D  
Analytical Date: 02/19/17 21:30  
Analyst: MW

Date Collected: 02/16/17 12:45  
Date Received: 02/16/17  
Field Prep: Field Filtered (Dissolved Metals)  
Extraction Method:EPA 3510C  
Extraction Date: 02/18/17 08:23

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>Semivolatile Organics by GC/MS - Westborough Lab</b>						
Benzidine	ND	ug/l	20	--	--	1
1,2,4-Trichlorobenzene	ND	ug/l	5.0	--	--	1
Bis(2-chloroethyl)ether	ND	ug/l	2.0	--	--	1
1,2-Dichlorobenzene	ND	ug/l	2.0	--	--	1
1,3-Dichlorobenzene	ND	ug/l	2.0	--	--	1
1,4-Dichlorobenzene	ND	ug/l	2.0	--	--	1
3,3'-Dichlorobenzidine	ND	ug/l	5.0	--	--	1
2,4-Dinitrotoluene	ND	ug/l	5.0	--	--	1
2,6-Dinitrotoluene	ND	ug/l	5.0	--	--	1
Azobenzene	ND	ug/l	2.0	--	--	1
4-Chlorophenyl phenyl ether	ND	ug/l	2.0	--	--	1
4-Bromophenyl phenyl ether	ND	ug/l	2.0	--	--	1
Bis(2-chloroisopropyl)ether	ND	ug/l	2.0	--	--	1
Bis(2-chloroethoxy)methane	ND	ug/l	5.0	--	--	1
Hexachlorocyclopentadiene	ND	ug/l	20	--	--	1
Isophorone	ND	ug/l	5.0	--	--	1
Nitrobenzene	ND	ug/l	2.0	--	--	1
NDPA/DPA	ND	ug/l	2.0	--	--	1
n-Nitrosodi-n-propylamine	ND	ug/l	5.0	--	--	1
Bis(2-ethylhexyl)phthalate	ND	ug/l	3.0	--	--	1
Butyl benzyl phthalate	ND	ug/l	5.0	--	--	1
Di-n-butylphthalate	ND	ug/l	5.0	--	--	1
Di-n-octylphthalate	ND	ug/l	5.0	--	--	1
Diethyl phthalate	ND	ug/l	5.0	--	--	1
Dimethyl phthalate	ND	ug/l	5.0	--	--	1
Biphenyl	ND	ug/l	2.0	--	--	1
Aniline	ND	ug/l	2.0	--	--	1
4-Chloroaniline	ND	ug/l	5.0	--	--	1
2-Nitroaniline	ND	ug/l	5.0	--	--	1



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704993  
**Report Date:** 02/21/17

**SAMPLE RESULTS**

Lab ID:	L1704993-04	Date Collected:	02/16/17 12:45
Client ID:	VES-103 (GW)	Date Received:	02/16/17
Sample Location:	MA	Field Prep:	Field Filtered (Dissolved Metals)

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>Semivolatile Organics by GC/MS - Westborough Lab</b>						
3-Nitroaniline	ND	ug/l	5.0	--	1	
4-Nitroaniline	ND	ug/l	5.0	--	1	
Dibenzofuran	ND	ug/l	2.0	--	1	
n-Nitrosodimethylamine	ND	ug/l	2.0	--	1	
2,4,6-Trichlorophenol	ND	ug/l	5.0	--	1	
p-Chloro-m-cresol	ND	ug/l	2.0	--	1	
2-Chlorophenol	ND	ug/l	2.0	--	1	
2,4-Dichlorophenol	ND	ug/l	5.0	--	1	
2,4-Dimethylphenol	ND	ug/l	5.0	--	1	
2-Nitrophenol	ND	ug/l	10	--	1	
4-Nitrophenol	ND	ug/l	10	--	1	
2,4-Dinitrophenol	ND	ug/l	20	--	1	
4,6-Dinitro-o-cresol	ND	ug/l	10	--	1	
Phenol	6.2	ug/l	5.0	--	1	
2-Methylphenol	ND	ug/l	5.0	--	1	
3-Methylphenol/4-Methylphenol	18.	ug/l	5.0	--	1	
2,4,5-Trichlorophenol	ND	ug/l	5.0	--	1	
Benzoic Acid	ND	ug/l	50	--	1	
Benzyl Alcohol	ND	ug/l	2.0	--	1	
Carbazole	ND	ug/l	2.0	--	1	
Pyridine	ND	ug/l	3.5	--	1	

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	47		21-120
Phenol-d6	33		10-120
Nitrobenzene-d5	85		23-120
2-Fluorobiphenyl	64		15-120
2,4,6-Tribromophenol	91		10-120
4-Terphenyl-d14	76		41-149

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704993  
**Report Date:** 02/21/17

**SAMPLE RESULTS**

Lab ID: L1704993-04  
Client ID: VES-103 (GW)  
Sample Location: MA  
Matrix: Water  
Analytical Method: 1,8270D-SIM  
Analytical Date: 02/19/17 18:54  
Analyst: KL

Date Collected: 02/16/17 12:45  
Date Received: 02/16/17  
Field Prep: Field Filtered (Dissolved Metals)  
Extraction Method:EPA 3510C  
Extraction Date: 02/18/17 08:25

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>Semivolatile Organics by GC/MS-SIM - Westborough Lab</b>						
Acenaphthene	0.87	ug/l	0.10	--	--	1
2-Chloronaphthalene	ND	ug/l	0.20	--	--	1
Fluoranthene	0.20	ug/l	0.20	--	--	1
Hexachlorobutadiene	ND	ug/l	0.50	--	--	1
Naphthalene	ND	ug/l	0.20	--	--	1
Benzo(a)anthracene	ND	ug/l	0.20	--	--	1
Benzo(a)pyrene	ND	ug/l	0.20	--	--	1
Benzo(b)fluoranthene	ND	ug/l	0.20	--	--	1
Benzo(k)fluoranthene	ND	ug/l	0.20	--	--	1
Chrysene	ND	ug/l	0.20	--	--	1
Acenaphthylene	ND	ug/l	0.20	--	--	1
Anthracene	ND	ug/l	0.20	--	--	1
Benzo(ghi)perylene	ND	ug/l	0.20	--	--	1
Fluorene	0.67	ug/l	0.20	--	--	1
Phenanthrene	ND	ug/l	0.20	--	--	1
Dibenzo(a,h)anthracene	ND	ug/l	0.20	--	--	1
Indeno(1,2,3-cd)pyrene	ND	ug/l	0.20	--	--	1
Pyrene	ND	ug/l	0.20	--	--	1
1-Methylnaphthalene	ND	ug/l	0.20	--	--	1
2-Methylnaphthalene	ND	ug/l	0.20	--	--	1
Pentachlorophenol	ND	ug/l	0.80	--	--	1
Hexachlorobenzene	ND	ug/l	0.80	--	--	1
Hexachloroethane	ND	ug/l	0.80	--	--	1

Project Name: EAST BOSTON

Lab Number: L1704993

Project Number: 43068

Report Date: 02/21/17

**SAMPLE RESULTS**

Lab ID: L1704993-04

Date Collected: 02/16/17 12:45

Client ID: VES-103 (GW)

Date Received: 02/16/17

Sample Location: MA

Field Prep: Field Filtered (Dissolved Metals)

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Surrogate	% Recovery	Qualifier		Acceptance Criteria		
2-Fluorophenol	39			21-120		
Phenol-d6	29			10-120		
Nitrobenzene-d5	65			23-120		
2-Fluorobiphenyl	54			15-120		
2,4,6-Tribromophenol	74			10-120		
4-Terphenyl-d14	65			41-149		

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704993  
**Report Date:** 02/21/17

**SAMPLE RESULTS**

Lab ID: L1704993-05  
Client ID: VES-123 (GW)  
Sample Location: MA  
Matrix: Water  
Analytical Method: 1,8270D  
Analytical Date: 02/17/17 22:55  
Analyst: RC

Date Collected: 02/16/17 15:10  
Date Received: 02/16/17  
Field Prep: Field Filtered (Dissolved Metals)  
Extraction Method:EPA 3510C  
Extraction Date: 02/17/17 05:37

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>Semivolatile Organics by GC/MS - Westborough Lab</b>						
Benzidine	ND	ug/l	19	--	--	1
1,2,4-Trichlorobenzene	ND	ug/l	4.8	--	--	1
Bis(2-chloroethyl)ether	ND	ug/l	1.9	--	--	1
1,2-Dichlorobenzene	ND	ug/l	1.9	--	--	1
1,3-Dichlorobenzene	ND	ug/l	1.9	--	--	1
1,4-Dichlorobenzene	ND	ug/l	1.9	--	--	1
3,3'-Dichlorobenzidine	ND	ug/l	4.8	--	--	1
2,4-Dinitrotoluene	ND	ug/l	4.8	--	--	1
2,6-Dinitrotoluene	ND	ug/l	4.8	--	--	1
Azobenzene	ND	ug/l	1.9	--	--	1
4-Chlorophenyl phenyl ether	ND	ug/l	1.9	--	--	1
4-Bromophenyl phenyl ether	ND	ug/l	1.9	--	--	1
Bis(2-chloroisopropyl)ether	ND	ug/l	1.9	--	--	1
Bis(2-chloroethoxy)methane	ND	ug/l	4.8	--	--	1
Hexachlorocyclopentadiene	ND	ug/l	19	--	--	1
Isophorone	ND	ug/l	4.8	--	--	1
Nitrobenzene	ND	ug/l	1.9	--	--	1
NDPA/DPA	ND	ug/l	1.9	--	--	1
n-Nitrosodi-n-propylamine	ND	ug/l	4.8	--	--	1
Bis(2-ethylhexyl)phthalate	ND	ug/l	2.9	--	--	1
Butyl benzyl phthalate	ND	ug/l	4.8	--	--	1
Di-n-butylphthalate	ND	ug/l	4.8	--	--	1
Di-n-octylphthalate	ND	ug/l	4.8	--	--	1
Diethyl phthalate	ND	ug/l	4.8	--	--	1
Dimethyl phthalate	ND	ug/l	4.8	--	--	1
Biphenyl	ND	ug/l	1.9	--	--	1
Aniline	ND	ug/l	1.9	--	--	1
4-Chloroaniline	ND	ug/l	4.8	--	--	1
2-Nitroaniline	ND	ug/l	4.8	--	--	1



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704993  
**Report Date:** 02/21/17

**SAMPLE RESULTS**

Lab ID:	L1704993-05	Date Collected:	02/16/17 15:10
Client ID:	VES-123 (GW)	Date Received:	02/16/17
Sample Location:	MA	Field Prep:	Field Filtered (Dissolved Metals)

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>Semivolatile Organics by GC/MS - Westborough Lab</b>						
3-Nitroaniline	ND	ug/l	4.8	--	--	1
4-Nitroaniline	ND	ug/l	4.8	--	--	1
Dibenzofuran	ND	ug/l	1.9	--	--	1
n-Nitrosodimethylamine	ND	ug/l	1.9	--	--	1
2,4,6-Trichlorophenol	ND	ug/l	4.8	--	--	1
p-Chloro-m-cresol	ND	ug/l	1.9	--	--	1
2-Chlorophenol	ND	ug/l	1.9	--	--	1
2,4-Dichlorophenol	ND	ug/l	4.8	--	--	1
2,4-Dimethylphenol	ND	ug/l	4.8	--	--	1
2-Nitrophenol	ND	ug/l	9.6	--	--	1
4-Nitrophenol	ND	ug/l	9.6	--	--	1
2,4-Dinitrophenol	ND	ug/l	19	--	--	1
4,6-Dinitro-o-cresol	ND	ug/l	9.6	--	--	1
Phenol	ND	ug/l	4.8	--	--	1
2-Methylphenol	ND	ug/l	4.8	--	--	1
3-Methylphenol/4-Methylphenol	ND	ug/l	4.8	--	--	1
2,4,5-Trichlorophenol	ND	ug/l	4.8	--	--	1
Benzoic Acid	ND	ug/l	48	--	--	1
Benzyl Alcohol	ND	ug/l	1.9	--	--	1
Carbazole	ND	ug/l	1.9	--	--	1
Pyridine	ND	ug/l	3.4	--	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	53		21-120
Phenol-d6	44		10-120
Nitrobenzene-d5	80		23-120
2-Fluorobiphenyl	77		15-120
2,4,6-Tribromophenol	70		10-120
4-Terphenyl-d14	71		41-149

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704993  
**Report Date:** 02/21/17

**SAMPLE RESULTS**

Lab ID:	L1704993-05	Date Collected:	02/16/17 15:10
Client ID:	VES-123 (GW)	Date Received:	02/16/17
Sample Location:	MA	Field Prep:	Field Filtered (Dissolved Metals)
Matrix:	Water	Extraction Method:	EPA 3510C
Analytical Method:	1,8270D-SIM	Extraction Date:	02/17/17 05:37
Analytical Date:	02/17/17 16:01		
Analyst:	DV		

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>Semivolatile Organics by GC/MS-SIM - Westborough Lab</b>						
Acenaphthene	ND	ug/l	0.10	--	--	1
2-Chloronaphthalene	ND	ug/l	0.19	--	--	1
Fluoranthene	ND	ug/l	0.19	--	--	1
Hexachlorobutadiene	ND	ug/l	0.48	--	--	1
Naphthalene	ND	ug/l	0.19	--	--	1
Benzo(a)anthracene	ND	ug/l	0.19	--	--	1
Benzo(a)pyrene	ND	ug/l	0.19	--	--	1
Benzo(b)fluoranthene	ND	ug/l	0.19	--	--	1
Benzo(k)fluoranthene	ND	ug/l	0.19	--	--	1
Chrysene	ND	ug/l	0.19	--	--	1
Acenaphthylene	ND	ug/l	0.19	--	--	1
Anthracene	ND	ug/l	0.19	--	--	1
Benzo(ghi)perylene	ND	ug/l	0.19	--	--	1
Fluorene	ND	ug/l	0.19	--	--	1
Phenanthrene	0.31	ug/l	0.19	--	--	1
Dibenzo(a,h)anthracene	ND	ug/l	0.19	--	--	1
Indeno(1,2,3-cd)pyrene	ND	ug/l	0.19	--	--	1
Pyrene	ND	ug/l	0.19	--	--	1
1-Methylnaphthalene	ND	ug/l	0.19	--	--	1
2-Methylnaphthalene	ND	ug/l	0.19	--	--	1
Pentachlorophenol	ND	ug/l	0.77	--	--	1
Hexachlorobenzene	ND	ug/l	0.77	--	--	1
Hexachloroethane	ND	ug/l	0.77	--	--	1

Project Name: EAST BOSTON

Lab Number: L1704993

Project Number: 43068

Report Date: 02/21/17

**SAMPLE RESULTS**

Lab ID: L1704993-05  
 Client ID: VES-123 (GW)  
 Sample Location: MA

Date Collected: 02/16/17 15:10  
 Date Received: 02/16/17  
 Field Prep: Field Filtered (Dissolved Metals)

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Surrogate	% Recovery	Qualifier	Acceptance Criteria			
2-Fluorophenol	53		21-120			
Phenol-d6	44		10-120			
Nitrobenzene-d5	74		23-120			
2-Fluorobiphenyl	63		15-120			
2,4,6-Tribromophenol	82		10-120			
4-Terphenyl-d14	82		41-149			

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704993  
**Report Date:** 02/21/17

### Method Blank Analysis Batch Quality Control

Analytical Method: 1,8270D  
Analytical Date: 02/18/17 14:59  
Analyst: RC

Extraction Method: EPA 3510C  
Extraction Date: 02/16/17 05:39

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 01,03,05 Batch: WG978284-1					
Acenaphthene	ND	ug/l	2.0	--	
Benzidine	ND	ug/l	20	--	
1,2,4-Trichlorobenzene	ND	ug/l	5.0	--	
Hexachlorobenzene	ND	ug/l	2.0	--	
Bis(2-chloroethyl)ether	ND	ug/l	2.0	--	
2-Chloronaphthalene	ND	ug/l	2.0	--	
1,2-Dichlorobenzene	ND	ug/l	2.0	--	
1,3-Dichlorobenzene	ND	ug/l	2.0	--	
1,4-Dichlorobenzene	ND	ug/l	2.0	--	
3,3'-Dichlorobenzidine	ND	ug/l	5.0	--	
2,4-Dinitrotoluene	ND	ug/l	5.0	--	
2,6-Dinitrotoluene	ND	ug/l	5.0	--	
Azobenzene	ND	ug/l	2.0	--	
Fluoranthene	ND	ug/l	2.0	--	
4-Chlorophenyl phenyl ether	ND	ug/l	2.0	--	
4-Bromophenyl phenyl ether	ND	ug/l	2.0	--	
Bis(2-chloroisopropyl)ether	ND	ug/l	2.0	--	
Bis(2-chloroethoxy)methane	ND	ug/l	5.0	--	
Hexachlorobutadiene	ND	ug/l	2.0	--	
Hexachlorocyclopentadiene	ND	ug/l	20	--	
Hexachloroethane	ND	ug/l	2.0	--	
Isophorone	ND	ug/l	5.0	--	
Naphthalene	ND	ug/l	2.0	--	
Nitrobenzene	ND	ug/l	2.0	--	
NDPA/DPA	ND	ug/l	2.0	--	
n-Nitrosodi-n-propylamine	ND	ug/l	5.0	--	
Bis(2-ethylhexyl)phthalate	ND	ug/l	3.0	--	
Butyl benzyl phthalate	ND	ug/l	5.0	--	
Di-n-butylphthalate	ND	ug/l	5.0	--	



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704993  
**Report Date:** 02/21/17

### Method Blank Analysis Batch Quality Control

Analytical Method: 1,8270D  
Analytical Date: 02/18/17 14:59  
Analyst: RC

Extraction Method: EPA 3510C  
Extraction Date: 02/16/17 05:39

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 01,03,05 Batch: WG978284-1					
Di-n-octylphthalate	ND	ug/l	5.0	--	
Diethyl phthalate	ND	ug/l	5.0	--	
Dimethyl phthalate	ND	ug/l	5.0	--	
Benzo(a)anthracene	ND	ug/l	2.0	--	
Benzo(a)pyrene	ND	ug/l	2.0	--	
Benzo(b)fluoranthene	ND	ug/l	2.0	--	
Benzo(k)fluoranthene	ND	ug/l	2.0	--	
Chrysene	ND	ug/l	2.0	--	
Acenaphthylene	ND	ug/l	2.0	--	
Anthracene	ND	ug/l	2.0	--	
Benzo(ghi)perylene	ND	ug/l	2.0	--	
Fluorene	ND	ug/l	2.0	--	
Phenanthrene	ND	ug/l	2.0	--	
Dibenzo(a,h)anthracene	ND	ug/l	2.0	--	
Indeno(1,2,3-cd)pyrene	ND	ug/l	2.0	--	
Pyrene	ND	ug/l	2.0	--	
Biphenyl	ND	ug/l	2.0	--	
Aniline	ND	ug/l	2.0	--	
4-Chloroaniline	ND	ug/l	5.0	--	
1-Methylnaphthalene	ND	ug/l	2.0	--	
2-Nitroaniline	ND	ug/l	5.0	--	
3-Nitroaniline	ND	ug/l	5.0	--	
4-Nitroaniline	ND	ug/l	5.0	--	
Dibenzofuran	ND	ug/l	2.0	--	
2-Methylnaphthalene	ND	ug/l	2.0	--	
n-Nitrosodimethylamine	ND	ug/l	2.0	--	
2,4,6-Trichlorophenol	ND	ug/l	5.0	--	
p-Chloro-m-cresol	ND	ug/l	2.0	--	
2-Chlorophenol	ND	ug/l	2.0	--	



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704993  
**Report Date:** 02/21/17

### Method Blank Analysis Batch Quality Control

Analytical Method: 1,8270D  
Analytical Date: 02/18/17 14:59  
Analyst: RC

Extraction Method: EPA 3510C  
Extraction Date: 02/16/17 05:39

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 01,03,05 Batch: WG978284-1					
2,4-Dichlorophenol	ND		ug/l	5.0	--
2,4-Dimethylphenol	ND		ug/l	5.0	--
2-Nitrophenol	ND		ug/l	10	--
4-Nitrophenol	ND		ug/l	10	--
2,4-Dinitrophenol	ND		ug/l	20	--
4,6-Dinitro-o-cresol	ND		ug/l	10	--
Pentachlorophenol	ND		ug/l	10	--
Phenol	ND		ug/l	5.0	--
2-Methylphenol	ND		ug/l	5.0	--
3-Methylphenol/4-Methylphenol	ND		ug/l	5.0	--
2,4,5-Trichlorophenol	ND		ug/l	5.0	--
Benzoic Acid	ND		ug/l	50	--
Benzyl Alcohol	ND		ug/l	2.0	--
Carbazole	ND		ug/l	2.0	--
Pyridine	ND		ug/l	3.5	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	41		21-120
Phenol-d6	29		10-120
Nitrobenzene-d5	68		23-120
2-Fluorobiphenyl	64		15-120
2,4,6-Tribromophenol	73		10-120
4-Terphenyl-d14	67		41-149

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704993  
**Report Date:** 02/21/17

### Method Blank Analysis Batch Quality Control

Analytical Method: 1,8270D-SIM  
Analytical Date: 02/17/17 13:33  
Analyst: DV

Extraction Method: EPA 3510C  
Extraction Date: 02/16/17 05:40

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS-SIM - Westborough Lab for sample(s): 01,03,05				Batch: WG978285-1	
Acenaphthene	ND		ug/l	0.10	--
2-Chloronaphthalene	ND		ug/l	0.20	--
Fluoranthene	ND		ug/l	0.20	--
Hexachlorobutadiene	ND		ug/l	0.50	--
Naphthalene	ND		ug/l	0.20	--
Benzo(a)anthracene	ND		ug/l	0.20	--
Benzo(a)pyrene	ND		ug/l	0.20	--
Benzo(b)fluoranthene	ND		ug/l	0.20	--
Benzo(k)fluoranthene	ND		ug/l	0.20	--
Chrysene	ND		ug/l	0.20	--
Acenaphthylene	ND		ug/l	0.20	--
Anthracene	ND		ug/l	0.20	--
Benzo(ghi)perylene	ND		ug/l	0.20	--
Fluorene	ND		ug/l	0.20	--
Phenanthrene	ND		ug/l	0.20	--
Dibenzo(a,h)anthracene	ND		ug/l	0.20	--
Indeno(1,2,3-cd)pyrene	ND		ug/l	0.20	--
Pyrene	ND		ug/l	0.20	--
1-Methylnaphthalene	ND		ug/l	0.20	--
2-Methylnaphthalene	ND		ug/l	0.20	--
Pentachlorophenol	ND		ug/l	0.80	--
Hexachlorobenzene	ND		ug/l	0.80	--
Hexachloroethane	ND		ug/l	0.80	--

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704993  
**Report Date:** 02/21/17

### Method Blank Analysis Batch Quality Control

Analytical Method: 1,8270D-SIM  
Analytical Date: 02/17/17 13:33  
Analyst: DV

Extraction Method: EPA 3510C  
Extraction Date: 02/16/17 05:40

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS-SIM - Westborough Lab for sample(s): 01,03,05				Batch: WG978285-1	

Surrogate	%Recovery	Qualifier	Acceptance
			Criteria
2-Fluorophenol	44		21-120
Phenol-d6	33		10-120
Nitrobenzene-d5	77		23-120
2-Fluorobiphenyl	70		15-120
2,4,6-Tribromophenol	91		10-120
4-Terphenyl-d14	92		41-149

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704993  
**Report Date:** 02/21/17

### Method Blank Analysis Batch Quality Control

Analytical Method: 1,8270D  
Analytical Date: 02/19/17 18:32  
Analyst: MW

Extraction Method: EPA 3510C  
Extraction Date: 02/18/17 08:23

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 04 Batch: WG979019-1					
Acenaphthene	ND	ug/l	2.0	--	
Benzidine	ND	ug/l	20	--	
1,2,4-Trichlorobenzene	ND	ug/l	5.0	--	
Hexachlorobenzene	ND	ug/l	2.0	--	
Bis(2-chloroethyl)ether	ND	ug/l	2.0	--	
2-Chloronaphthalene	ND	ug/l	2.0	--	
1,2-Dichlorobenzene	ND	ug/l	2.0	--	
1,3-Dichlorobenzene	ND	ug/l	2.0	--	
1,4-Dichlorobenzene	ND	ug/l	2.0	--	
3,3'-Dichlorobenzidine	ND	ug/l	5.0	--	
2,4-Dinitrotoluene	ND	ug/l	5.0	--	
2,6-Dinitrotoluene	ND	ug/l	5.0	--	
Azobenzene	ND	ug/l	2.0	--	
Fluoranthene	ND	ug/l	2.0	--	
4-Chlorophenyl phenyl ether	ND	ug/l	2.0	--	
4-Bromophenyl phenyl ether	ND	ug/l	2.0	--	
Bis(2-chloroisopropyl)ether	ND	ug/l	2.0	--	
Bis(2-chloroethoxy)methane	ND	ug/l	5.0	--	
Hexachlorobutadiene	ND	ug/l	2.0	--	
Hexachlorocyclopentadiene	ND	ug/l	20	--	
Hexachloroethane	ND	ug/l	2.0	--	
Isophorone	ND	ug/l	5.0	--	
Naphthalene	ND	ug/l	2.0	--	
Nitrobenzene	ND	ug/l	2.0	--	
NDPA/DPA	ND	ug/l	2.0	--	
n-Nitrosodi-n-propylamine	ND	ug/l	5.0	--	
Bis(2-ethylhexyl)phthalate	ND	ug/l	3.0	--	
Butyl benzyl phthalate	ND	ug/l	5.0	--	
Di-n-butylphthalate	ND	ug/l	5.0	--	



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704993  
**Report Date:** 02/21/17

### Method Blank Analysis Batch Quality Control

Analytical Method: 1,8270D  
Analytical Date: 02/19/17 18:32  
Analyst: MW

Extraction Method: EPA 3510C  
Extraction Date: 02/18/17 08:23

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 04 Batch: WG979019-1					
Di-n-octylphthalate	ND	ug/l	5.0	--	
Diethyl phthalate	ND	ug/l	5.0	--	
Dimethyl phthalate	ND	ug/l	5.0	--	
Benzo(a)anthracene	ND	ug/l	2.0	--	
Benzo(a)pyrene	ND	ug/l	2.0	--	
Benzo(b)fluoranthene	ND	ug/l	2.0	--	
Benzo(k)fluoranthene	ND	ug/l	2.0	--	
Chrysene	ND	ug/l	2.0	--	
Acenaphthylene	ND	ug/l	2.0	--	
Anthracene	ND	ug/l	2.0	--	
Benzo(ghi)perylene	ND	ug/l	2.0	--	
Fluorene	ND	ug/l	2.0	--	
Phenanthrene	ND	ug/l	2.0	--	
Dibenzo(a,h)anthracene	ND	ug/l	2.0	--	
Indeno(1,2,3-cd)pyrene	ND	ug/l	2.0	--	
Pyrene	ND	ug/l	2.0	--	
Biphenyl	ND	ug/l	2.0	--	
Aniline	ND	ug/l	2.0	--	
4-Chloroaniline	ND	ug/l	5.0	--	
1-Methylnaphthalene	ND	ug/l	2.0	--	
2-Nitroaniline	ND	ug/l	5.0	--	
3-Nitroaniline	ND	ug/l	5.0	--	
4-Nitroaniline	ND	ug/l	5.0	--	
Dibenzofuran	ND	ug/l	2.0	--	
2-Methylnaphthalene	ND	ug/l	2.0	--	
n-Nitrosodimethylamine	ND	ug/l	2.0	--	
2,4,6-Trichlorophenol	ND	ug/l	5.0	--	
p-Chloro-m-cresol	ND	ug/l	2.0	--	
2-Chlorophenol	ND	ug/l	2.0	--	



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704993  
**Report Date:** 02/21/17

### Method Blank Analysis Batch Quality Control

Analytical Method: 1,8270D  
Analytical Date: 02/19/17 18:32  
Analyst: MW

Extraction Method: EPA 3510C  
Extraction Date: 02/18/17 08:23

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 04 Batch: WG979019-1					
2,4-Dichlorophenol	ND		ug/l	5.0	--
2,4-Dimethylphenol	ND		ug/l	5.0	--
2-Nitrophenol	ND		ug/l	10	--
4-Nitrophenol	ND		ug/l	10	--
2,4-Dinitrophenol	ND		ug/l	20	--
4,6-Dinitro-o-cresol	ND		ug/l	10	--
Pentachlorophenol	ND		ug/l	10	--
Phenol	ND		ug/l	5.0	--
2-Methylphenol	ND		ug/l	5.0	--
3-Methylphenol/4-Methylphenol	ND		ug/l	5.0	--
2,4,5-Trichlorophenol	ND		ug/l	5.0	--
Benzoic Acid	ND		ug/l	50	--
Benzyl Alcohol	ND		ug/l	2.0	--
Carbazole	ND		ug/l	2.0	--
Pyridine	ND		ug/l	3.5	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	49		21-120
Phenol-d6	34		10-120
Nitrobenzene-d5	81		23-120
2-Fluorobiphenyl	74		15-120
2,4,6-Tribromophenol	87		10-120
4-Terphenyl-d14	75		41-149

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704993  
**Report Date:** 02/21/17

### Method Blank Analysis Batch Quality Control

Analytical Method: 1,8270D-SIM  
Analytical Date: 02/19/17 16:33  
Analyst: KL

Extraction Method: EPA 3510C  
Extraction Date: 02/18/17 08:25

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS-SIM - Westborough Lab for sample(s): 04 Batch: WG979020-1					
Acenaphthene	ND	ug/l	0.10	--	
2-Chloronaphthalene	ND	ug/l	0.20	--	
Fluoranthene	ND	ug/l	0.20	--	
Hexachlorobutadiene	ND	ug/l	0.50	--	
Naphthalene	ND	ug/l	0.20	--	
Benzo(a)anthracene	ND	ug/l	0.20	--	
Benzo(a)pyrene	ND	ug/l	0.20	--	
Benzo(b)fluoranthene	ND	ug/l	0.20	--	
Benzo(k)fluoranthene	ND	ug/l	0.20	--	
Chrysene	ND	ug/l	0.20	--	
Acenaphthylene	ND	ug/l	0.20	--	
Anthracene	ND	ug/l	0.20	--	
Benzo(ghi)perylene	ND	ug/l	0.20	--	
Fluorene	ND	ug/l	0.20	--	
Phenanthrene	ND	ug/l	0.20	--	
Dibenzo(a,h)anthracene	ND	ug/l	0.20	--	
Indeno(1,2,3-cd)pyrene	ND	ug/l	0.20	--	
Pyrene	ND	ug/l	0.20	--	
1-Methylnaphthalene	ND	ug/l	0.20	--	
2-Methylnaphthalene	ND	ug/l	0.20	--	
Pentachlorophenol	ND	ug/l	0.80	--	
Hexachlorobenzene	ND	ug/l	0.80	--	
Hexachloroethane	ND	ug/l	0.80	--	

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704993  
**Report Date:** 02/21/17

### Method Blank Analysis Batch Quality Control

Analytical Method: 1,8270D-SIM  
Analytical Date: 02/19/17 16:33  
Analyst: KL

Extraction Method: EPA 3510C  
Extraction Date: 02/18/17 08:25

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS-SIM - Westborough Lab for sample(s): 04 Batch: WG979020-1					

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	41		21-120
Phenol-d6	29		10-120
Nitrobenzene-d5	69		23-120
2-Fluorobiphenyl	56		15-120
2,4,6-Tribromophenol	71		10-120
4-Terphenyl-d14	66		41-149

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704993  
**Report Date:** 02/21/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01,03,05 Batch: WG978284-2 WG978284-3								
Acenaphthene	79		79		37-111	0		30
Benzidine	9	Q	5	Q	10-75	57	Q	30
1,2,4-Trichlorobenzene	67		68		39-98	1		30
Hexachlorobenzene	68		72		40-140	6		30
Bis(2-chloroethyl)ether	77		77		40-140	0		30
2-Chloronaphthalene	75		76		40-140	1		30
1,2-Dichlorobenzene	68		66		40-140	3		30
1,3-Dichlorobenzene	65		65		40-140	0		30
1,4-Dichlorobenzene	66		66		36-97	0		30
3,3'-Dichlorobenzidine	63		64		40-140	2		30
2,4-Dinitrotoluene	84		88		48-143	5		30
2,6-Dinitrotoluene	89		93		40-140	4		30
Azobenzene	93		90		40-140	3		30
Fluoranthene	79		81		40-140	3		30
4-Chlorophenyl phenyl ether	72		75		40-140	4		30
4-Bromophenyl phenyl ether	71		70		40-140	1		30
Bis(2-chloroisopropyl)ether	80		77		40-140	4		30
Bis(2-chloroethoxy)methane	79		82		40-140	4		30
Hexachlorobutadiene	63		64		40-140	2		30
Hexachlorocyclopentadiene	62		66		40-140	6		30
Hexachloroethane	70		68		40-140	3		30

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704993  
**Report Date:** 02/21/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01,03,05 Batch: WG978284-2 WG978284-3								
Isophorone	81		81		40-140	0		30
Naphthalene	72		72		40-140	0		30
Nitrobenzene	89		87		40-140	2		30
NDPA/DPA	78		78		40-140	0		30
n-Nitrosodi-n-propylamine	83		83		29-132	0		30
Bis(2-ethylhexyl)phthalate	86		89		40-140	3		30
Butyl benzyl phthalate	81		86		40-140	6		30
Di-n-butylphthalate	83		87		40-140	5		30
Di-n-octylphthalate	85		89		40-140	5		30
Diethyl phthalate	78		80		40-140	3		30
Dimethyl phthalate	78		79		40-140	1		30
Benzo(a)anthracene	79		80		40-140	1		30
Benzo(a)pyrene	75		79		40-140	5		30
Benzo(b)fluoranthene	74		79		40-140	7		30
Benzo(k)fluoranthene	75		77		40-140	3		30
Chrysene	76		77		40-140	1		30
Acenaphthylene	79		80		45-123	1		30
Anthracene	82		83		40-140	1		30
Benzo(ghi)perylene	74		76		40-140	3		30
Fluorene	76		77		40-140	1		30
Phenanthrene	80		80		40-140	0		30

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704993  
**Report Date:** 02/21/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01,03,05 Batch: WG978284-2 WG978284-3								
Dibenzo(a,h)anthracene	74		75		40-140	1		30
Indeno(1,2,3-cd)pyrene	73		74		40-140	1		30
Pyrene	77		81		26-127	5		30
Biphenyl	79		79		40-140	0		30
Aniline	36	Q	26	Q	40-140	32	Q	30
4-Chloroaniline	68		58		40-140	16		30
1-Methylnaphthalene	80		79		41-103	1		30
2-Nitroaniline	90		93		52-143	3		30
3-Nitroaniline	80		82		25-145	2		30
4-Nitroaniline	80		82		51-143	2		30
Dibenzofuran	78		78		40-140	0		30
2-Methylnaphthalene	75		75		40-140	0		30
n-Nitrosodimethylamine	53		53		22-74	0		30
2,4,6-Trichlorophenol	78		80		30-130	3		30
p-Chloro-m-cresol	83		84		23-97	1		30
2-Chlorophenol	73		74		27-123	1		30
2,4-Dichlorophenol	78		81		30-130	4		30
2,4-Dimethylphenol	85		84		30-130	1		30
2-Nitrophenol	86		89		30-130	3		30
4-Nitrophenol	69		67		10-80	3		30
2,4-Dinitrophenol	77		83		20-130	8		30

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704993  
**Report Date:** 02/21/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01,03,05 Batch: WG978284-2 WG978284-3								
4,6-Dinitro-o-cresol	82		88		20-164	7		30
Pentachlorophenol	57		62		9-103	8		30
Phenol	35		38		12-110	8		30
2-Methylphenol	73		75		30-130	3		30
3-Methylphenol/4-Methylphenol	70		73		30-130	4		30
2,4,5-Trichlorophenol	76		78		30-130	3		30
Benzoic Acid	25		36		10-164	36	Q	30
Benzyl Alcohol	75		74		26-116	1		30
Carbazole	80		80		55-144	0		30
Pyridine	34		17		10-66	67	Q	30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2-Fluorophenol	51		52		21-120
Phenol-d6	37		39		10-120
Nitrobenzene-d5	85		82		23-120
2-Fluorobiphenyl	72		71		15-120
2,4,6-Tribromophenol	66		67		10-120
4-Terphenyl-d14	70		72		41-149

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704993  
**Report Date:** 02/21/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS-SIM - Westborough Lab Associated sample(s): 01,03,05 Batch: WG978285-2 WG978285-3								
Acenaphthene	74		67		37-111	10		40
2-Chloronaphthalene	80		71		40-140	12		40
Fluoranthene	85		79		40-140	7		40
Hexachlorobutadiene	72		61		40-140	17		40
Naphthalene	78		68		40-140	14		40
Benzo(a)anthracene	87		79		40-140	10		40
Benzo(a)pyrene	92		84		40-140	9		40
Benzo(b)fluoranthene	90		81		40-140	11		40
Benzo(k)fluoranthene	86		80		40-140	7		40
Chrysene	77		70		40-140	10		40
Acenaphthylene	88		79		40-140	11		40
Anthracene	87		79		40-140	10		40
Benzo(ghi)perylene	91		83		40-140	9		40
Fluorene	82		74		40-140	10		40
Phenanthrene	78		71		40-140	9		40
Dibenzo(a,h)anthracene	93		84		40-140	10		40
Indeno(1,2,3-cd)pyrene	96		87		40-140	10		40
Pyrene	84		79		26-127	6		40
1-Methylnaphthalene	80		71		40-140	12		40
2-Methylnaphthalene	81		72		40-140	12		40
Pentachlorophenol	67		62		9-103	8		40

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704993  
**Report Date:** 02/21/17

<b>Parameter</b>	<i>LCS</i> <i>%Recovery</i>	<i>Qual</i>	<i>LCSD</i> <i>%Recovery</i>	<i>Qual</i>	<i>%Recovery</i> <i>Limits</i>	<i>RPD</i>	<i>Qual</i>	<i>RPD</i> <i>Limits</i>
Semivolatile Organics by GC/MS-SIM - Westborough Lab Associated sample(s): 01,03,05 Batch: WG978285-2 WG978285-3								
Hexachlorobenzene	80		72		40-140	11		40
Hexachloroethane	72		62		40-140	15		40

<b>Surrogate</b>	<i>LCS</i> <i>%Recovery</i>	<i>Qual</i>	<i>LCSD</i> <i>%Recovery</i>	<i>Qual</i>	<b>Acceptance Criteria</b>
2-Fluorophenol	48		43		21-120
Phenol-d6	36		32		10-120
Nitrobenzene-d5	82		71		23-120
2-Fluorobiphenyl	74		65		15-120
2,4,6-Tribromophenol	85		78		10-120
4-Terphenyl-d14	78		73		41-149

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704993  
**Report Date:** 02/21/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 04 Batch: WG979019-2 WG979019-3							
Acenaphthene	60		66		37-111	10	30
Benzidine	12		0	Q	10-75	NC	30
1,2,4-Trichlorobenzene	48		47		39-98	2	30
Hexachlorobenzene	68		77		40-140	12	30
Bis(2-chloroethyl)ether	60		65		40-140	8	30
2-Chloronaphthalene	55		63		40-140	14	30
1,2-Dichlorobenzene	51		47		40-140	8	30
1,3-Dichlorobenzene	50		44		40-140	13	30
1,4-Dichlorobenzene	51		46		36-97	10	30
3,3'-Dichlorobenzidine	55		63		40-140	14	30
2,4-Dinitrotoluene	77		86		48-143	11	30
2,6-Dinitrotoluene	82		96		40-140	16	30
Azobenzene	68		75		40-140	10	30
Fluoranthene	68		78		40-140	14	30
4-Chlorophenyl phenyl ether	64		71		40-140	10	30
4-Bromophenyl phenyl ether	65		73		40-140	12	30
Bis(2-chloroisopropyl)ether	51		66		40-140	26	30
Bis(2-chloroethoxy)methane	63		74		40-140	16	30
Hexachlorobutadiene	46		40		40-140	14	30
Hexachlorocyclopentadiene	44		42		40-140	5	30
Hexachloroethane	48		46		40-140	4	30

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704993  
**Report Date:** 02/21/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 04 Batch: WG979019-2 WG979019-3								
Isophorone	62		78		40-140	23		30
Naphthalene	51		51		40-140	0		30
Nitrobenzene	64		77		40-140	18		30
NDPA/DPA	67		76		40-140	13		30
n-Nitrosodi-n-propylamine	61		76		29-132	22		30
Bis(2-ethylhexyl)phthalate	74		86		40-140	15		30
Butyl benzyl phthalate	72		78		40-140	8		30
Di-n-butylphthalate	72		82		40-140	13		30
Di-n-octylphthalate	70		82		40-140	16		30
Diethyl phthalate	69		77		40-140	11		30
Dimethyl phthalate	68		80		40-140	16		30
Benzo(a)anthracene	66		78		40-140	17		30
Benzo(a)pyrene	64		74		40-140	14		30
Benzo(b)fluoranthene	66		77		40-140	15		30
Benzo(k)fluoranthene	65		74		40-140	13		30
Chrysene	66		75		40-140	13		30
Acenaphthylene	61		72		45-123	17		30
Anthracene	69		78		40-140	12		30
Benzo(ghi)perylene	65		72		40-140	10		30
Fluorene	65		73		40-140	12		30
Phenanthrene	67		75		40-140	11		30

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704993  
**Report Date:** 02/21/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 04 Batch: WG979019-2 WG979019-3								
Dibenzo(a,h)anthracene	64		72		40-140	12		30
Indeno(1,2,3-cd)pyrene	64		72		40-140	12		30
Pyrene	67		76		26-127	13		30
Biphenyl	57		65		40-140	13		30
Aniline	34	Q	30	Q	40-140	13		30
4-Chloroaniline	52		58		40-140	11		30
1-Methylnaphthalene	52		62		41-103	18		30
2-Nitroaniline	79		93		52-143	16		30
3-Nitroaniline	67		74		25-145	10		30
4-Nitroaniline	67		74		51-143	10		30
Dibenzofuran	62		69		40-140	11		30
2-Methylnaphthalene	53		57		40-140	7		30
n-Nitrosodimethylamine	41		39		22-74	5		30
2,4,6-Trichlorophenol	71		83		30-130	16		30
p-Chloro-m-cresol	66		79		23-97	18		30
2-Chlorophenol	58		60		27-123	3		30
2,4-Dichlorophenol	66		73		30-130	10		30
2,4-Dimethylphenol	69		72		30-130	4		30
2-Nitrophenol	71		76		30-130	7		30
4-Nitrophenol	45		50		10-80	11		30
2,4-Dinitrophenol	78		89		20-130	13		30

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704993  
**Report Date:** 02/21/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 04 Batch: WG979019-2 WG979019-3								
4,6-Dinitro-o-cresol	83		93		20-164	11		30
Pentachlorophenol	62		68		9-103	9		30
Phenol	27		31		12-110	14		30
2-Methylphenol	56		64		30-130	13		30
3-Methylphenol/4-Methylphenol	54		62		30-130	14		30
2,4,5-Trichlorophenol	71		82		30-130	14		30
Benzoic Acid	27		35		10-164	26		30
Benzyl Alcohol	52		63		26-116	19		30
Carbazole	68		76		55-144	11		30
Pyridine	30		10		10-66	100	Q	30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2-Fluorophenol	41		46		21-120
Phenol-d6	29		33		10-120
Nitrobenzene-d5	66		76		23-120
2-Fluorobiphenyl	62		71		15-120
2,4,6-Tribromophenol	75		84		10-120
4-Terphenyl-d14	61		75		41-149

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704993  
**Report Date:** 02/21/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS-SIM - Westborough Lab Associated sample(s): 04 Batch: WG979020-2 WG979020-3								
Acenaphthene	53		57		37-111	7		40
2-Chloronaphthalene	54		58		40-140	7		40
Fluoranthene	60		62		40-140	3		40
Hexachlorobutadiene	41		49		40-140	18		40
Naphthalene	49		56		40-140	13		40
Benzo(a)anthracene	59		62		40-140	5		40
Benzo(a)pyrene	55		56		40-140	2		40
Benzo(b)fluoranthene	52		54		40-140	4		40
Benzo(k)fluoranthene	59		63		40-140	7		40
Chrysene	60		63		40-140	5		40
Acenaphthylene	59		64		40-140	8		40
Anthracene	63		66		40-140	5		40
Benzo(ghi)perylene	54		58		40-140	7		40
Fluorene	60		63		40-140	5		40
Phenanthrene	53		54		40-140	2		40
Dibenzo(a,h)anthracene	54		59		40-140	9		40
Indeno(1,2,3-cd)pyrene	54		57		40-140	5		40
Pyrene	60		62		26-127	3		40
1-Methylnaphthalene	49		55		40-140	12		40
2-Methylnaphthalene	48		54		40-140	12		40
Pentachlorophenol	70		72		9-103	3		40

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704993  
**Report Date:** 02/21/17

<b>Parameter</b>	<i>LCS</i> %Recovery	<i>Qual</i>	<i>LCSD</i> %Recovery	<i>Qual</i>	<i>%Recovery</i> <i>Limits</i>	<i>RPD</i>	<i>Qual</i>	<i>RPD</i> <i>Limits</i>
Semivolatile Organics by GC/MS-SIM - Westborough Lab Associated sample(s): 04 Batch: WG979020-2 WG979020-3								
Hexachlorobenzene	56		57		40-140	2		40
Hexachloroethane	49		56		40-140	13		40

<b>Surrogate</b>	<i>LCS</i> %Recovery	<i>Qual</i>	<i>LCSD</i> %Recovery	<i>Qual</i>	<b>Acceptance Criteria</b>
2-Fluorophenol	38		41		21-120
Phenol-d6	27		30		10-120
Nitrobenzene-d5	61		68		23-120
2-Fluorobiphenyl	51		55		15-120
2,4,6-Tribromophenol	67		69		10-120
4-Terphenyl-d14	64		63		41-149

# PETROLEUM HYDROCARBONS



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704993  
**Report Date:** 02/21/17

**SAMPLE RESULTS**

Lab ID:	L1704993-01	Date Collected:	02/16/17 08:40
Client ID:	VES-101 (GW)	Date Received:	02/16/17
Sample Location:	MA	Field Prep:	Field Filtered (Dissolved Metals)
Matrix:	Water		
Analytical Method:	100,VPH-04-1.1		
Analytical Date:	02/17/17 15:54		
Analyst:	JM		

**Quality Control Information**

Condition of sample received:	Satisfactory
Aqueous Preservative:	Laboratory Provided Preserved Container
Sample Temperature upon receipt:	Received on Ice

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>Volatile Petroleum Hydrocarbons - Westborough Lab</b>						
C5-C8 Aliphatics	ND		ug/l	50.0	--	1
C9-C12 Aliphatics	ND		ug/l	50.0	--	1
C9-C10 Aromatics	ND		ug/l	50.0	--	1
C5-C8 Aliphatics, Adjusted	ND		ug/l	50.0	--	1
C9-C12 Aliphatics, Adjusted	ND		ug/l	50.0	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2,5-Dibromotoluene-PID	94		70-130
2,5-Dibromotoluene-FID	100		70-130

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704993  
**Report Date:** 02/21/17

**SAMPLE RESULTS**

Lab ID:	L1704993-01	Date Collected:	02/16/17 08:40
Client ID:	VES-101 (GW)	Date Received:	02/16/17
Sample Location:	MA	Field Prep:	Field Filtered (Dissolved Metals)
Matrix:	Water	Extraction Method:	EPA 3510C
Analytical Method:	98,EPH-04-1.1	Extraction Date:	02/17/17 00:43
Analytical Date:	02/20/17 19:25	M.S. Analytical Date:	02/21/17 08:09
Analyst:	SR	M.S. Analyst:	KL
		Cleanup Method1:	EPH-04-1
		Cleanup Date1:	02/17/17

**Quality Control Information**

Condition of sample received:	Satisfactory
Aqueous Preservative:	Laboratory Provided Preserved Container
Sample Temperature upon receipt:	Received on Ice
Sample Extraction method:	Extracted Per the Method

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>EPH w/MS Targets - Westborough Lab</b>						
C9-C18 Aliphatics	ND		ug/l	100	--	1
C19-C36 Aliphatics	ND		ug/l	100	--	1
C11-C22 Aromatics	ND		ug/l	100	--	1
C11-C22 Aromatics, Adjusted	ND		ug/l	100	--	1
Naphthalene	ND		ug/l	0.400	--	1
2-Methylnaphthalene	ND		ug/l	0.400	--	1
Acenaphthylene	ND		ug/l	0.400	--	1
Acenaphthene	ND		ug/l	0.400	--	1
Fluorene	ND		ug/l	0.400	--	1
Phenanthrene	ND		ug/l	0.400	--	1
Anthracene	ND		ug/l	0.400	--	1
Fluoranthene	ND		ug/l	0.400	--	1
Pyrene	ND		ug/l	0.400	--	1
Benzo(a)anthracene	ND		ug/l	0.400	--	1
Chrysene	ND		ug/l	0.400	--	1
Benzo(b)fluoranthene	ND		ug/l	0.400	--	1
Benzo(k)fluoranthene	ND		ug/l	0.400	--	1
Benzo(a)pyrene	ND		ug/l	0.200	--	1
Indeno(1,2,3-cd)Pyrene	ND		ug/l	0.400	--	1
Dibenzo(a,h)anthracene	ND		ug/l	0.400	--	1
Benzo(ghi)perylene	ND		ug/l	0.400	--	1



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704993  
**Report Date:** 02/21/17

**SAMPLE RESULTS**

Lab ID:	L1704993-01	Date Collected:	02/16/17 08:40
Client ID:	VES-101 (GW)	Date Received:	02/16/17
Sample Location:	MA	Field Prep:	Field Filtered (Dissolved Metals)

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
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**EPH w/MS Targets - Westborough Lab**

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Chloro-Octadecane	54		40-140
o-Terphenyl	66		40-140
2-Fluorobiphenyl	69		40-140
2-Bromonaphthalene	69		40-140
O-Terphenyl-MS	101		40-140



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704993  
**Report Date:** 02/21/17

**SAMPLE RESULTS**

Lab ID:	L1704993-02	Date Collected:	02/16/17 11:30
Client ID:	VES-104 (GW)	Date Received:	02/16/17
Sample Location:	MA	Field Prep:	Field Filtered (Dissolved Metals)
Matrix:	Water		
Analytical Method:	100,VPH-04-1.1		
Analytical Date:	02/17/17 16:33		
Analyst:	JM		

**Quality Control Information**

Condition of sample received:	Satisfactory
Aqueous Preservative:	Laboratory Provided Preserved Container
Sample Temperature upon receipt:	Received on Ice

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>Volatile Petroleum Hydrocarbons - Westborough Lab</b>						
C5-C8 Aliphatics	ND		ug/l	50.0	--	1
C9-C12 Aliphatics	ND		ug/l	50.0	--	1
C9-C10 Aromatics	ND		ug/l	50.0	--	1
C5-C8 Aliphatics, Adjusted	ND		ug/l	50.0	--	1
C9-C12 Aliphatics, Adjusted	ND		ug/l	50.0	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2,5-Dibromotoluene-PID	104		70-130
2,5-Dibromotoluene-FID	110		70-130

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704993  
**Report Date:** 02/21/17

**SAMPLE RESULTS**

Lab ID:	L1704993-02	Date Collected:	02/16/17 11:30
Client ID:	VES-104 (GW)	Date Received:	02/16/17
Sample Location:	MA	Field Prep:	Field Filtered (Dissolved Metals)
Matrix:	Water	Extraction Method:	EPA 3510C
Analytical Method:	98,EPH-04-1.1	Extraction Date:	02/17/17 00:43
Analytical Date:	02/17/17 23:28	M.S. Analytical Date:	02/18/17 13:14
Analyst:	SR	M.S. Analyst:	KL
		Cleanup Method1:	EPH-04-1
		Cleanup Date1:	02/17/17

**Quality Control Information**

Condition of sample received:	Satisfactory
Aqueous Preservative:	Laboratory Provided Preserved Container
Sample Temperature upon receipt:	Received on Ice
Sample Extraction method:	Extracted Per the Method

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>EPH w/MS Targets - Westborough Lab</b>						
C9-C18 Aliphatics	ND		ug/l	100	--	1
C19-C36 Aliphatics	ND		ug/l	100	--	1
C11-C22 Aromatics	ND		ug/l	100	--	1
C11-C22 Aromatics, Adjusted	ND		ug/l	100	--	1
Naphthalene	ND		ug/l	0.400	--	1
2-Methylnaphthalene	ND		ug/l	0.400	--	1
Acenaphthylene	ND		ug/l	0.400	--	1
Acenaphthene	ND		ug/l	0.400	--	1
Fluorene	ND		ug/l	0.400	--	1
Phenanthrene	ND		ug/l	0.400	--	1
Anthracene	ND		ug/l	0.400	--	1
Fluoranthene	ND		ug/l	0.400	--	1
Pyrene	ND		ug/l	0.400	--	1
Benzo(a)anthracene	ND		ug/l	0.400	--	1
Chrysene	ND		ug/l	0.400	--	1
Benzo(b)fluoranthene	ND		ug/l	0.400	--	1
Benzo(k)fluoranthene	ND		ug/l	0.400	--	1
Benzo(a)pyrene	ND		ug/l	0.200	--	1
Indeno(1,2,3-cd)Pyrene	ND		ug/l	0.400	--	1
Dibenzo(a,h)anthracene	ND		ug/l	0.400	--	1
Benzo(ghi)perylene	ND		ug/l	0.400	--	1



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704993  
**Report Date:** 02/21/17

**SAMPLE RESULTS**

Lab ID:	L1704993-02	Date Collected:	02/16/17 11:30
Client ID:	VES-104 (GW)	Date Received:	02/16/17
Sample Location:	MA	Field Prep:	Field Filtered (Dissolved Metals)

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
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**EPH w/MS Targets - Westborough Lab**

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Chloro-Octadecane	57		40-140
o-Terphenyl	57		40-140
2-Fluorobiphenyl	60		40-140
2-Bromonaphthalene	61		40-140
O-Terphenyl-MS	80		40-140

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704993  
**Report Date:** 02/21/17

**SAMPLE RESULTS**

Lab ID:	L1704993-03	Date Collected:	02/16/17 13:35
Client ID:	VES-102 (GW)	Date Received:	02/16/17
Sample Location:	MA	Field Prep:	Field Filtered (Dissolved Metals)
Matrix:	Water		
Analytical Method:	100,VPH-04-1.1		
Analytical Date:	02/17/17 17:12		
Analyst:	JM		

**Quality Control Information**

Condition of sample received:	Satisfactory
Aqueous Preservative:	Laboratory Provided Preserved Container
Sample Temperature upon receipt:	Received on Ice

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>Volatile Petroleum Hydrocarbons - Westborough Lab</b>						
C5-C8 Aliphatics	ND		ug/l	50.0	--	1
C9-C12 Aliphatics	ND		ug/l	50.0	--	1
C9-C10 Aromatics	ND		ug/l	50.0	--	1
C5-C8 Aliphatics, Adjusted	ND		ug/l	50.0	--	1
C9-C12 Aliphatics, Adjusted	ND		ug/l	50.0	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2,5-Dibromotoluene-PID	104		70-130
2,5-Dibromotoluene-FID	109		70-130

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704993  
**Report Date:** 02/21/17

**SAMPLE RESULTS**

Lab ID:	L1704993-03	Date Collected:	02/16/17 13:35
Client ID:	VES-102 (GW)	Date Received:	02/16/17
Sample Location:	MA	Field Prep:	Field Filtered (Dissolved Metals)
Matrix:	Water	Extraction Method:	EPA 3510C
Analytical Method:	98,EPH-04-1.1	Extraction Date:	02/17/17 00:43
Analytical Date:	02/17/18 00:00	M.S. Analytical Date:	02/18/17 13:39
Analyst:	SR	M.S. Analyst:	KL
		Cleanup Method1:	EPH-04-1
		Cleanup Date1:	02/17/17

**Quality Control Information**

Condition of sample received:	Satisfactory
Aqueous Preservative:	Laboratory Provided Preserved Container
Sample Temperature upon receipt:	Received on Ice
Sample Extraction method:	Extracted Per the Method

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>EPH w/MS Targets - Westborough Lab</b>						
C9-C18 Aliphatics	ND		ug/l	100	--	1
C19-C36 Aliphatics	ND		ug/l	100	--	1
C11-C22 Aromatics	ND		ug/l	100	--	1
C11-C22 Aromatics, Adjusted	ND		ug/l	100	--	1
Naphthalene	ND		ug/l	0.400	--	1
2-Methylnaphthalene	ND		ug/l	0.400	--	1
Acenaphthylene	ND		ug/l	0.400	--	1
Acenaphthene	ND		ug/l	0.400	--	1
Fluorene	ND		ug/l	0.400	--	1
Phenanthrene	ND		ug/l	0.400	--	1
Anthracene	ND		ug/l	0.400	--	1
Fluoranthene	ND		ug/l	0.400	--	1
Pyrene	ND		ug/l	0.400	--	1
Benzo(a)anthracene	ND		ug/l	0.400	--	1
Chrysene	ND		ug/l	0.400	--	1
Benzo(b)fluoranthene	ND		ug/l	0.400	--	1
Benzo(k)fluoranthene	ND		ug/l	0.400	--	1
Benzo(a)pyrene	ND		ug/l	0.200	--	1
Indeno(1,2,3-cd)Pyrene	ND		ug/l	0.400	--	1
Dibenzo(a,h)anthracene	ND		ug/l	0.400	--	1
Benzo(ghi)perylene	ND		ug/l	0.400	--	1



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704993  
**Report Date:** 02/21/17

**SAMPLE RESULTS**

Lab ID:	L1704993-03	Date Collected:	02/16/17 13:35
Client ID:	VES-102 (GW)	Date Received:	02/16/17
Sample Location:	MA	Field Prep:	Field Filtered (Dissolved Metals)

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
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**EPH w/MS Targets - Westborough Lab**

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Chloro-Octadecane	45		40-140
o-Terphenyl	70		40-140
2-Fluorobiphenyl	63		40-140
2-Bromonaphthalene	65		40-140
O-Terphenyl-MS	71		40-140



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704993  
**Report Date:** 02/21/17

**SAMPLE RESULTS**

Lab ID:	L1704993-04	Date Collected:	02/16/17 12:45
Client ID:	VES-103 (GW)	Date Received:	02/16/17
Sample Location:	MA	Field Prep:	Field Filtered (Dissolved Metals)
Matrix:	Water		
Analytical Method:	100,VPH-04-1.1		
Analytical Date:	02/18/17 18:15		
Analyst:	JM		

**Quality Control Information**

Condition of sample received:	Satisfactory
Aqueous Preservative:	Laboratory Provided Preserved Container
Sample Temperature upon receipt:	Received on Ice

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>Volatile Petroleum Hydrocarbons - Westborough Lab</b>						
C5-C8 Aliphatics	ND		ug/l	50.0	--	1
C9-C12 Aliphatics	ND		ug/l	50.0	--	1
C9-C10 Aromatics	ND		ug/l	50.0	--	1
C5-C8 Aliphatics, Adjusted	ND		ug/l	50.0	--	1
C9-C12 Aliphatics, Adjusted	ND		ug/l	50.0	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2,5-Dibromotoluene-PID	104		70-130
2,5-Dibromotoluene-FID	95		70-130

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704993  
**Report Date:** 02/21/17

**SAMPLE RESULTS**

Lab ID:	L1704993-04	Date Collected:	02/16/17 12:45
Client ID:	VES-103 (GW)	Date Received:	02/16/17
Sample Location:	MA	Field Prep:	Field Filtered (Dissolved Metals)
Matrix:	Water	Extraction Method:	EPA 3510C
Analytical Method:	98,EPH-04-1.1	Extraction Date:	02/17/17 10:46
Analytical Date:	02/19/17 18:23	M.S. Analytical Date:	02/20/17 09:00
Analyst:	SR	M.S. Analyst:	KL
		Cleanup Method1:	EPH-04-1
		Cleanup Date1:	02/18/17

**Quality Control Information**

Condition of sample received:	Satisfactory
Aqueous Preservative:	Laboratory Provided Preserved Container
Sample Temperature upon receipt:	Received on Ice
Sample Extraction method:	Extracted Per the Method

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>EPH w/MS Targets - Westborough Lab</b>						
C9-C18 Aliphatics	ND		ug/l	100	--	1
C19-C36 Aliphatics	ND		ug/l	100	--	1
C11-C22 Aromatics	ND		ug/l	100	--	1
C11-C22 Aromatics, Adjusted	ND		ug/l	100	--	1
Naphthalene	ND		ug/l	0.428	--	1
2-Methylnaphthalene	ND		ug/l	0.428	--	1
Acenaphthylene	ND		ug/l	0.428	--	1
Acenaphthene	ND		ug/l	0.428	--	1
Fluorene	ND		ug/l	0.428	--	1
Phenanthrene	ND		ug/l	0.428	--	1
Anthracene	ND		ug/l	0.428	--	1
Fluoranthene	ND		ug/l	0.428	--	1
Pyrene	ND		ug/l	0.428	--	1
Benzo(a)anthracene	ND		ug/l	0.428	--	1
Chrysene	ND		ug/l	0.428	--	1
Benzo(b)fluoranthene	ND		ug/l	0.428	--	1
Benzo(k)fluoranthene	ND		ug/l	0.428	--	1
Benzo(a)pyrene	ND		ug/l	0.100	--	1
Indeno(1,2,3-cd)Pyrene	ND		ug/l	0.428	--	1
Dibenzo(a,h)anthracene	ND		ug/l	0.428	--	1
Benzo(ghi)perylene	ND		ug/l	0.428	--	1



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704993  
**Report Date:** 02/21/17

**SAMPLE RESULTS**

Lab ID:	L1704993-04	Date Collected:	02/16/17 12:45
Client ID:	VES-103 (GW)	Date Received:	02/16/17
Sample Location:	MA	Field Prep:	Field Filtered (Dissolved Metals)

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
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**EPH w/MS Targets - Westborough Lab**

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Chloro-Octadecane	65		40-140
o-Terphenyl	81		40-140
2-Fluorobiphenyl	84		40-140
2-Bromonaphthalene	86		40-140
O-Terphenyl-MS	71		40-140

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704993  
**Report Date:** 02/21/17

**SAMPLE RESULTS**

Lab ID:	L1704993-05	Date Collected:	02/16/17 15:10
Client ID:	VES-123 (GW)	Date Received:	02/16/17
Sample Location:	MA	Field Prep:	Field Filtered (Dissolved Metals)
Matrix:	Water		
Analytical Method:	100,VPH-04-1.1		
Analytical Date:	02/17/17 17:51		
Analyst:	JM		

**Quality Control Information**

Condition of sample received:	Satisfactory
Aqueous Preservative:	Laboratory Provided Preserved Container
Sample Temperature upon receipt:	Received on Ice

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>Volatile Petroleum Hydrocarbons - Westborough Lab</b>						
C5-C8 Aliphatics	ND		ug/l	50.0	--	1
C9-C12 Aliphatics	ND		ug/l	50.0	--	1
C9-C10 Aromatics	ND		ug/l	50.0	--	1
C5-C8 Aliphatics, Adjusted	ND		ug/l	50.0	--	1
C9-C12 Aliphatics, Adjusted	ND		ug/l	50.0	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2,5-Dibromotoluene-PID	102		70-130
2,5-Dibromotoluene-FID	107		70-130

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704993  
**Report Date:** 02/21/17

**SAMPLE RESULTS**

Lab ID:	L1704993-05	Date Collected:	02/16/17 15:10
Client ID:	VES-123 (GW)	Date Received:	02/16/17
Sample Location:	MA	Field Prep:	Field Filtered (Dissolved Metals)
Matrix:	Water	Extraction Method:	EPA 3510C
Analytical Method:	98,EPH-04-1.1	Extraction Date:	02/17/17 00:43
Analytical Date:	02/18/17 00:31	Cleanup Method1:	EPH-04-1
Analyst:	SR	M.S. Analyst:	KL
		Cleanup Date1:	02/17/17

**Quality Control Information**

Condition of sample received:	Satisfactory
Aqueous Preservative:	Laboratory Provided Preserved Container
Sample Temperature upon receipt:	Received on Ice
Sample Extraction method:	Extracted Per the Method

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>EPH w/MS Targets - Westborough Lab</b>						
C9-C18 Aliphatics	ND	ug/l	100	--	--	1
C19-C36 Aliphatics	ND	ug/l	100	--	--	1
C11-C22 Aromatics	ND	ug/l	100	--	--	1
C11-C22 Aromatics, Adjusted	ND	ug/l	100	--	--	1
Naphthalene	ND	ug/l	0.400	--	--	1
2-Methylnaphthalene	ND	ug/l	0.400	--	--	1
Acenaphthylene	ND	ug/l	0.400	--	--	1
Acenaphthene	ND	ug/l	0.400	--	--	1
Fluorene	ND	ug/l	0.400	--	--	1
Phenanthrene	0.406	ug/l	0.400	--	--	1
Anthracene	ND	ug/l	0.400	--	--	1
Fluoranthene	ND	ug/l	0.400	--	--	1
Pyrene	ND	ug/l	0.400	--	--	1
Benzo(a)anthracene	ND	ug/l	0.400	--	--	1
Chrysene	ND	ug/l	0.400	--	--	1
Benzo(b)fluoranthene	ND	ug/l	0.400	--	--	1
Benzo(k)fluoranthene	ND	ug/l	0.400	--	--	1
Benzo(a)pyrene	ND	ug/l	0.200	--	--	1
Indeno(1,2,3-cd)Pyrene	ND	ug/l	0.400	--	--	1
Dibenzo(a,h)anthracene	ND	ug/l	0.400	--	--	1
Benzo(ghi)perylene	ND	ug/l	0.400	--	--	1



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704993  
**Report Date:** 02/21/17

**SAMPLE RESULTS**

Lab ID:	L1704993-05	Date Collected:	02/16/17 15:10
Client ID:	VES-123 (GW)	Date Received:	02/16/17
Sample Location:	MA	Field Prep:	Field Filtered (Dissolved Metals)

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
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**EPH w/MS Targets - Westborough Lab**

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Chloro-Octadecane	58		40-140
o-Terphenyl	82		40-140
2-Fluorobiphenyl	75		40-140
2-Bromonaphthalene	78		40-140
O-Terphenyl-MS	88		40-140

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704993  
**Report Date:** 02/21/17

**SAMPLE RESULTS**

Lab ID:	L1704993-06	Date Collected:	02/16/17 10:15
Client ID:	VES-121 (GW)	Date Received:	02/16/17
Sample Location:	MA	Field Prep:	Field Filtered (Dissolved Metals)
Matrix:	Water		
Analytical Method:	100,VPH-04-1.1		
Analytical Date:	02/18/17 05:28		
Analyst:	JM		

**Quality Control Information**

Condition of sample received:	Satisfactory
Aqueous Preservative:	Laboratory Provided Preserved Container
Sample Temperature upon receipt:	Received on Ice

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>Volatile Petroleum Hydrocarbons - Westborough Lab</b>						
C5-C8 Aliphatics	ND		ug/l	50.0	--	1
C9-C12 Aliphatics	ND		ug/l	50.0	--	1
C9-C10 Aromatics	ND		ug/l	50.0	--	1
C5-C8 Aliphatics, Adjusted	ND		ug/l	50.0	--	1
C9-C12 Aliphatics, Adjusted	ND		ug/l	50.0	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2,5-Dibromotoluene-PID	90		70-130
2,5-Dibromotoluene-FID	97		70-130

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704993  
**Report Date:** 02/21/17

**SAMPLE RESULTS**

Lab ID:	L1704993-06	Date Collected:	02/16/17 10:15
Client ID:	VES-121 (GW)	Date Received:	02/16/17
Sample Location:	MA	Field Prep:	Field Filtered (Dissolved Metals)
Matrix:	Water	Extraction Method:	EPA 3510C
Analytical Method:	98,EPH-04-1.1	Extraction Date:	02/17/17 10:46
Analytical Date:	02/19/17 18:54	M.S. Analytical Date:	02/20/17 09:24
Analyst:	SR	M.S. Analyst:	KL
		Cleanup Method1:	EPH-04-1
		Cleanup Date1:	02/18/17

**Quality Control Information**

Condition of sample received:	Satisfactory
Aqueous Preservative:	Laboratory Provided Preserved Container
Sample Temperature upon receipt:	Received on Ice
Sample Extraction method:	Extracted Per the Method

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>EPH w/MS Targets - Westborough Lab</b>						
C9-C18 Aliphatics	ND		ug/l	100	--	1
C19-C36 Aliphatics	ND		ug/l	100	--	1
C11-C22 Aromatics	ND		ug/l	100	--	1
C11-C22 Aromatics, Adjusted	ND		ug/l	100	--	1
Naphthalene	ND		ug/l	0.428	--	1
2-Methylnaphthalene	ND		ug/l	0.428	--	1
Acenaphthylene	ND		ug/l	0.428	--	1
Acenaphthene	1.08		ug/l	0.428	--	1
Fluorene	0.808		ug/l	0.428	--	1
Phenanthrene	ND		ug/l	0.428	--	1
Anthracene	ND		ug/l	0.428	--	1
Fluoranthene	ND		ug/l	0.428	--	1
Pyrene	ND		ug/l	0.428	--	1
Benzo(a)anthracene	ND		ug/l	0.428	--	1
Chrysene	ND		ug/l	0.428	--	1
Benzo(b)fluoranthene	ND		ug/l	0.428	--	1
Benzo(k)fluoranthene	ND		ug/l	0.428	--	1
Benzo(a)pyrene	ND		ug/l	0.100	--	1
Indeno(1,2,3-cd)Pyrene	ND		ug/l	0.428	--	1
Dibenzo(a,h)anthracene	ND		ug/l	0.428	--	1
Benzo(ghi)perylene	ND		ug/l	0.428	--	1



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704993  
**Report Date:** 02/21/17

**SAMPLE RESULTS**

Lab ID:	L1704993-06	Date Collected:	02/16/17 10:15
Client ID:	VES-121 (GW)	Date Received:	02/16/17
Sample Location:	MA	Field Prep:	Field Filtered (Dissolved Metals)

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
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**EPH w/MS Targets - Westborough Lab**

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Chloro-Octadecane	61		40-140
o-Terphenyl	69		40-140
2-Fluorobiphenyl	69		40-140
2-Bromonaphthalene	72		40-140
O-Terphenyl-MS	59		40-140



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704993  
**Report Date:** 02/21/17

### Method Blank Analysis Batch Quality Control

Analytical Method:	98,EPH-04-1.1	Extraction Method:	EPA 3510C
Analytical Date:	02/17/17 21:22	Extraction Date:	02/17/17 00:43
Analyst:	SR	Cleanup Method:	EPH-04-1
		Cleanup Date:	02/17/17

Parameter	Result	Qualifier	Units	RL	MDL
EPH w/MS Targets - Westborough Lab for sample(s):	01-03,05		Batch:	WG978612-1	
C9-C18 Aliphatics	ND		ug/l	100	--
C19-C36 Aliphatics	ND		ug/l	100	--
C11-C22 Aromatics	ND		ug/l	100	--
C11-C22 Aromatics, Adjusted	ND		ug/l	100	--
Naphthalene	ND		ug/l	0.400	--
2-Methylnaphthalene	ND		ug/l	0.400	--
Acenaphthylene	ND		ug/l	0.400	--
Acenaphthene	ND		ug/l	0.400	--
Fluorene	ND		ug/l	0.400	--
Phenanthrene	ND		ug/l	0.400	--
Anthracene	ND		ug/l	0.400	--
Fluoranthene	ND		ug/l	0.400	--
Pyrene	ND		ug/l	0.400	--
Benzo(a)anthracene	ND		ug/l	0.400	--
Chrysene	ND		ug/l	0.400	--
Benzo(b)fluoranthene	ND		ug/l	0.400	--
Benzo(k)fluoranthene	ND		ug/l	0.400	--
Benzo(a)pyrene	ND		ug/l	0.200	--
Indeno(1,2,3-cd)Pyrene	ND		ug/l	0.400	--
Dibenzo(a,h)anthracene	ND		ug/l	0.400	--
Benzo(ghi)perylene	ND		ug/l	0.400	--

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704993  
**Report Date:** 02/21/17

### Method Blank Analysis Batch Quality Control

Analytical Method:	98,EPH-04-1.1	Extraction Method:	EPA 3510C
Analytical Date:	02/17/17 21:22	Extraction Date:	02/17/17 00:43
Analyst:	SR	Cleanup Method:	EPH-04-1
		Cleanup Date:	02/17/17

Parameter	Result	Qualifier	Units	RL	MDL
EPH w/MS Targets - Westborough Lab for sample(s): 01-03,05			Batch:	WG978612-1	

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Chloro-Octadecane	73		40-140
o-Terphenyl	82		40-140
2-Fluorobiphenyl	85		40-140
2-Bromonaphthalene	87		40-140
O-Terphenyl-MS	74		40-140

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704993  
**Report Date:** 02/21/17

### Method Blank Analysis Batch Quality Control

Analytical Method:	98,EPH-04-1.1	Extraction Method:	EPA 3510C
Analytical Date:	02/19/17 02:11	Extraction Date:	02/17/17 08:18
Analyst:	EK	M.S. Analyst:	KL
		Cleanup Method:	EPH-04-1
		Cleanup Date:	02/18/17

Parameter	Result	Qualifier	Units	RL	MDL
EPH w/MS Targets - Westborough Lab for sample(s): 04.06 Batch: WG978700-1					
C9-C18 Aliphatics	ND		ug/l	100	--
C19-C36 Aliphatics	ND		ug/l	100	--
C11-C22 Aromatics	ND		ug/l	100	--
C11-C22 Aromatics, Adjusted	ND		ug/l	100	--
Naphthalene	ND		ug/l	0.400	--
2-Methylnaphthalene	ND		ug/l	0.400	--
Acenaphthylene	ND		ug/l	0.400	--
Acenaphthene	ND		ug/l	0.400	--
Fluorene	ND		ug/l	0.400	--
Phenanthrene	ND		ug/l	0.400	--
Anthracene	ND		ug/l	0.400	--
Fluoranthene	ND		ug/l	0.400	--
Pyrene	ND		ug/l	0.400	--
Benzo(a)anthracene	ND		ug/l	0.400	--
Chrysene	ND		ug/l	0.400	--
Benzo(b)fluoranthene	ND		ug/l	0.400	--
Benzo(k)fluoranthene	ND		ug/l	0.400	--
Benzo(a)pyrene	ND		ug/l	0.200	--
Indeno(1,2,3-cd)Pyrene	ND		ug/l	0.400	--
Dibenzo(a,h)anthracene	ND		ug/l	0.400	--
Benzo(ghi)perylene	ND		ug/l	0.400	--

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704993  
**Report Date:** 02/21/17

### Method Blank Analysis Batch Quality Control

Analytical Method: 98,EPH-04-1.1  
Analytical Date: 02/19/17 02:11  
Analyst: EK

02/18/17 14:28  
KL

Extraction Method: EPA 3510C  
Extraction Date: 02/17/17 08:18  
Cleanup Method: EPH-04-1  
Cleanup Date: 02/18/17

Parameter	Result	Qualifier	Units	RL	MDL
EPH w/MS Targets - Westborough Lab for sample(s):	04.06		Batch:	WG978700-1	

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Chloro-Octadecane	63		40-140
o-Terphenyl	71		40-140
2-Fluorobiphenyl	75		40-140
2-Bromonaphthalene	76		40-140
O-Terphenyl-MS	58		40-140

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704993  
**Report Date:** 02/21/17

**Method Blank Analysis**  
**Batch Quality Control**

Analytical Method: 100,VPH-04-1.1  
Analytical Date: 02/17/17 11:13  
Analyst: JM

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Petroleum Hydrocarbons - Westborough Lab for sample(s): 01-03,05-06				Batch:	WG979614-3
C5-C8 Aliphatics	ND		ug/l	50.0	--
C9-C12 Aliphatics	ND		ug/l	50.0	--
C9-C10 Aromatics	ND		ug/l	50.0	--
C5-C8 Aliphatics, Adjusted	ND		ug/l	50.0	--
C9-C12 Aliphatics, Adjusted	ND		ug/l	50.0	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2,5-Dibromotoluene-PID	102		70-130
2,5-Dibromotoluene-FID	109		70-130

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704993  
**Report Date:** 02/21/17

**Method Blank Analysis**  
**Batch Quality Control**

Analytical Method: 100,VPH-04-1.1  
Analytical Date: 02/18/17 13:59  
Analyst: JM

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Petroleum Hydrocarbons - Westborough Lab for sample(s): 04 Batch: WG979655-3					
C5-C8 Aliphatics	ND		ug/l	50.0	--
C9-C12 Aliphatics	ND		ug/l	50.0	--
C9-C10 Aromatics	ND		ug/l	50.0	--
C5-C8 Aliphatics, Adjusted	ND		ug/l	50.0	--
C9-C12 Aliphatics, Adjusted	ND		ug/l	50.0	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2,5-Dibromotoluene-PID	115		70-130
2,5-Dibromotoluene-FID	103		70-130

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704993  
**Report Date:** 02/21/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
EPH w/MS Targets - Westborough Lab Associated sample(s): 01-03,05 Batch: WG978612-2 WG978612-3								
C9-C18 Aliphatics	60		54		40-140	11		25
C19-C36 Aliphatics	77		69		40-140	11		25
C11-C22 Aromatics	85		86		40-140	1		25
Naphthalene	43		49		40-140	13		25
2-Methylnaphthalene	47		55		40-140	16		25
Acenaphthylene	53		64		40-140	19		25
Acenaphthene	52		63		40-140	19		25
Fluorene	58		71		40-140	20		25
Phenanthrene	53		64		40-140	19		25
Anthracene	57		69		40-140	19		25
Fluoranthene	62		74		40-140	18		25
Pyrene	62		74		40-140	18		25
Benzo(a)anthracene	60		73		40-140	20		25
Chrysene	60		73		40-140	20		25
Benzo(b)fluoranthene	65		78		40-140	18		25
Benzo(k)fluoranthene	55		66		40-140	18		25
Benzo(a)pyrene	60		73		40-140	20		25
Indeno(1,2,3-cd)Pyrene	58		70		40-140	19		25
Dibenzo(a,h)anthracene	61		73		40-140	18		25
Benzo(ghi)perylene	57		69		40-140	19		25
Nonane (C9)	39		35		30-140	11		25

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704993  
**Report Date:** 02/21/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
EPH w/MS Targets - Westborough Lab Associated sample(s): 01-03,05 Batch: WG978612-2 WG978612-3								
Decane (C10)	48		42		40-140	13		25
Dodecane (C12)	56		50		40-140	11		25
Tetradecane (C14)	61		56		40-140	9		25
Hexadecane (C16)	67		61		40-140	9		25
Octadecane (C18)	74		66		40-140	11		25
Nonadecane (C19)	73		65		40-140	12		25
Eicosane (C20)	75		66		40-140	13		25
Docosane (C22)	75		67		40-140	11		25
Tetracosane (C24)	75		67		40-140	11		25
Hexacosane (C26)	76		66		40-140	14		25
Octacosane (C28)	76		66		40-140	14		25
Triacontane (C30)	75		66		40-140	13		25
Hexatriacontane (C36)	74		66		40-140	11		25

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704993  
**Report Date:** 02/21/17

<b>Parameter</b>	<i>LCS</i>		<i>LCSD</i>		<i>%Recovery</i>		<i>RPD</i>	<i>Qual</i>	<i>RPD</i> <i>Limits</i>
	<i>%Recovery</i>	<i>Qual</i>	<i>%Recovery</i>	<i>Qual</i>	<i>Limits</i>				
EPH w/MS Targets - Westborough Lab Associated sample(s): 01-03,05 Batch: WG978612-2 WG978612-3									
<i>Surrogate</i>	<i>LCS</i> <i>%Recovery</i>	<i>Qual</i>	<i>LCSD</i> <i>%Recovery</i>	<i>Qual</i>	<i>Acceptance Criteria</i>				
Chloro-Octadecane	63		54		40-140				
o-Terphenyl	97		101		40-140				
2-Fluorobiphenyl	76		72		40-140				
2-Bromonaphthalene	79		76		40-140				
O-Terphenyl-MS	59		72		40-140				
% Naphthalene Breakthrough	0		0						
% 2-Methylnaphthalene Breakthrough	0		0						

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704993  
**Report Date:** 02/21/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
EPH w/MS Targets - Westborough Lab Associated sample(s): 04,06 Batch: WG978700-2 WG978700-3								
C9-C18 Aliphatics	54		73		40-140	30	Q	25
C19-C36 Aliphatics	49		84		40-140	53	Q	25
C11-C22 Aromatics	65		85		40-140	27	Q	25
Naphthalene	74		89		40-140	18		25
2-Methylnaphthalene	83		96		40-140	15		25
Acenaphthylene	93		105		40-140	12		25
Acenaphthene	93		105		40-140	12		25
Fluorene	101		114		40-140	12		25
Phenanthrene	90		102		40-140	13		25
Anthracene	98		110		40-140	12		25
Fluoranthene	106		117		40-140	10		25
Pyrene	105		116		40-140	10		25
Benzo(a)anthracene	103		112		40-140	8		25
Chrysene	104		113		40-140	8		25
Benzo(b)fluoranthene	112		123		40-140	9		25
Benzo(k)fluoranthene	93		102		40-140	9		25
Benzo(a)pyrene	102		112		40-140	9		25
Indeno(1,2,3-cd)Pyrene	100		109		40-140	9		25
Dibenzo(a,h)anthracene	105		113		40-140	7		25
Benzo(ghi)perylene	100		107		40-140	7		25
Nonane (C9)	43		59		30-140	31	Q	25

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704993  
**Report Date:** 02/21/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
EPH w/MS Targets - Westborough Lab Associated sample(s): 04,06 Batch: WG978700-2 WG978700-3								
Decane (C10)	48		66		40-140	32	Q	25
Dodecane (C12)	51		68		40-140	29	Q	25
Tetradecane (C14)	53		71		40-140	29	Q	25
Hexadecane (C16)	58		76		40-140	27	Q	25
Octadecane (C18)	61		80		40-140	27	Q	25
Nonadecane (C19)	60		78		40-140	26	Q	25
Eicosane (C20)	62		80		40-140	25		25
Docosane (C22)	62		80		40-140	25		25
Tetracosane (C24)	62		80		40-140	25		25
Hexacosane (C26)	62		80		40-140	25		25
Octacosane (C28)	62		79		40-140	24		25
Triacontane (C30)	61		78		40-140	24		25
Hexatriacontane (C36)	62		78		40-140	23		25

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704993  
**Report Date:** 02/21/17

<b>Parameter</b>	<i>LCS</i> <b>%Recovery</b>	<i>LCSD</i> <b>%Recovery</b>	<b>%Recovery</b> <b>Limits</b>		<i>RPD</i>	<i>Qual</i>	<i>RPD</i> <b>Limits</b>
	<b>Qual</b>	<b>Qual</b>	<b>Limits</b>	<b>Qual</b>	<b>Limits</b>	<b>Qual</b>	<b>Limits</b>
EPH w/MS Targets - Westborough Lab Associated sample(s): 04,06 Batch: WG978700-2 WG978700-3							
<b>Surrogate</b>	<i>LCS</i> <b>%Recovery</b>	<i>Qual</i>	<i>LCSD</i> <b>%Recovery</b>	<i>Qual</i>	<b>Acceptance Criteria</b>		
Chloro-Octadecane	53		72		40-140		
o-Terphenyl	76		94		40-140		
2-Fluorobiphenyl	73		79		40-140		
2-Bromonaphthalene	77		82		40-140		
O-Terphenyl-MS	103		112		40-140		
% Naphthalene Breakthrough	0		0				
% 2-Methylnaphthalene Breakthrough	0		0				

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704993  
**Report Date:** 02/21/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Petroleum Hydrocarbons - Westborough Lab Associated sample(s): 01-03,05-06 Batch: WG979614-1 WG979614-2								
C5-C8 Aliphatics	99		101		70-130	2		25
C9-C12 Aliphatics	106		107		70-130	1		25
C9-C10 Aromatics	99		100		70-130	1		25
Benzene	96		96		70-130	1		25
Toluene	97		98		70-130	1		25
Ethylbenzene	97		99		70-130	2		25
p/m-Xylene	99		99		70-130	0		25
o-Xylene	96		97		70-130	1		25
Methyl tert butyl ether	91		97		70-130	6		25
Naphthalene	94		102		70-130	9		25
1,2,4-Trimethylbenzene	99		100		70-130	1		25
Pentane	96		97		70-130	2		25
2-Methylpentane	100		102		70-130	2		25
2,2,4-Trimethylpentane	102		104		70-130	2		25
n-Nonane	105		107		30-130	2		25
n-Decane	108		109		70-130	1		25
n-Butylcyclohexane	105		106		70-130	1		25

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704993  
**Report Date:** 02/21/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
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Volatile Petroleum Hydrocarbons - Westborough Lab Associated sample(s): 01-03,05-06 Batch: WG979614-1 WG979614-2

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2,5-Dibromotoluene-PID	99		104		70-130
2,5-Dibromotoluene-FID	103		109		70-130

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704993  
**Report Date:** 02/21/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Petroleum Hydrocarbons - Westborough Lab Associated sample(s): 04 Batch: WG979655-1 WG979655-2								
C5-C8 Aliphatics	101		99		70-130	2		25
C9-C12 Aliphatics	108		106		70-130	2		25
C9-C10 Aromatics	119		116		70-130	3		25
Benzene	112		112		70-130	0		25
Toluene	114		113		70-130	1		25
Ethylbenzene	116		115		70-130	1		25
p/m-Xylene	118		116		70-130	2		25
o-Xylene	114		112		70-130	2		25
Methyl tert butyl ether	110		110		70-130	0		25
Naphthalene	117		114		70-130	3		25
1,2,4-Trimethylbenzene	119		116		70-130	3		25
Pentane	96		95		70-130	1		25
2-Methylpentane	101		100		70-130	1		25
2,2,4-Trimethylpentane	104		103		70-130	1		25
n-Nonane	107		106		30-130	1		25
n-Decane	110		107		70-130	3		25
n-Butylcyclohexane	106		105		70-130	1		25

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704993  
**Report Date:** 02/21/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
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Volatile Petroleum Hydrocarbons - Westborough Lab Associated sample(s): 04 Batch: WG979655-1 WG979655-2

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2,5-Dibromotoluene-PID	120		116		70-130
2,5-Dibromotoluene-FID	108		106		70-130

**PCBS**



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704993  
**Report Date:** 02/21/17

**SAMPLE RESULTS**

Lab ID: L1704993-01  
Client ID: VES-101 (GW)  
Sample Location: MA  
Matrix: Water  
Analytical Method: 5,608  
Analytical Date: 02/20/17 14:38  
Analyst: JW

Date Collected: 02/16/17 08:40  
Date Received: 02/16/17  
Field Prep: Field Filtered (Dissolved Metals)  
Extraction Method: EPA 608  
Extraction Date: 02/17/17 02:56  
Cleanup Method: EPA 3665A  
Cleanup Date: 02/17/17  
Cleanup Method: EPA 3660B  
Cleanup Date: 02/17/17

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
<b>Polychlorinated Biphenyls by GC - Westborough Lab</b>							
Aroclor 1016	ND		ug/l	0.250	--	1	A
Aroclor 1221	ND		ug/l	0.250	--	1	A
Aroclor 1232	ND		ug/l	0.250	--	1	A
Aroclor 1242	ND		ug/l	0.250	--	1	A
Aroclor 1248	ND		ug/l	0.250	--	1	A
Aroclor 1254	ND		ug/l	0.250	--	1	A
Aroclor 1260	ND		ug/l	0.200	--	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	66		30-150	A
Decachlorobiphenyl	36		30-150	A

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704993  
**Report Date:** 02/21/17

**SAMPLE RESULTS**

Lab ID: L1704993-03  
Client ID: VES-102 (GW)  
Sample Location: MA  
Matrix: Water  
Analytical Method: 5,608  
Analytical Date: 02/20/17 14:50  
Analyst: JW

Date Collected: 02/16/17 13:35  
Date Received: 02/16/17  
Field Prep: Field Filtered (Dissolved Metals)  
Extraction Method: EPA 608  
Extraction Date: 02/17/17 02:56  
Cleanup Method: EPA 3665A  
Cleanup Date: 02/17/17  
Cleanup Method: EPA 3660B  
Cleanup Date: 02/17/17

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
<b>Polychlorinated Biphenyls by GC - Westborough Lab</b>							
Aroclor 1016	ND		ug/l	0.250	--	1	A
Aroclor 1221	ND		ug/l	0.250	--	1	A
Aroclor 1232	ND		ug/l	0.250	--	1	A
Aroclor 1242	ND		ug/l	0.250	--	1	A
Aroclor 1248	ND		ug/l	0.250	--	1	A
Aroclor 1254	ND		ug/l	0.250	--	1	A
Aroclor 1260	ND		ug/l	0.200	--	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	64		30-150	A
Decachlorobiphenyl	31		30-150	A

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704993  
**Report Date:** 02/21/17

**SAMPLE RESULTS**

Lab ID: L1704993-04  
Client ID: VES-103 (GW)  
Sample Location: MA  
Matrix: Water  
Analytical Method: 5,608  
Analytical Date: 02/20/17 15:03  
Analyst: JW

Date Collected: 02/16/17 12:45  
Date Received: 02/16/17  
Field Prep: Field Filtered (Dissolved Metals)  
Extraction Method: EPA 608  
Extraction Date: 02/17/17 10:41  
Cleanup Method: EPA 3665A  
Cleanup Date: 02/17/17  
Cleanup Method: EPA 3660B  
Cleanup Date: 02/17/17

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
<b>Polychlorinated Biphenyls by GC - Westborough Lab</b>							
Aroclor 1016	ND		ug/l	0.250	--	1	A
Aroclor 1221	ND		ug/l	0.250	--	1	A
Aroclor 1232	ND		ug/l	0.250	--	1	A
Aroclor 1242	ND		ug/l	0.250	--	1	A
Aroclor 1248	ND		ug/l	0.250	--	1	A
Aroclor 1254	ND		ug/l	0.250	--	1	A
Aroclor 1260	ND		ug/l	0.200	--	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	92		30-150	A
Decachlorobiphenyl	33		30-150	A

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704993  
**Report Date:** 02/21/17

**SAMPLE RESULTS**

Lab ID: L1704993-05  
Client ID: VES-123 (GW)  
Sample Location: MA  
Matrix: Water  
Analytical Method: 5,608  
Analytical Date: 02/20/17 15:15  
Analyst: JW

Date Collected: 02/16/17 15:10  
Date Received: 02/16/17  
Field Prep: Field Filtered (Dissolved Metals)  
Extraction Method: EPA 608  
Extraction Date: 02/17/17 02:56  
Cleanup Method: EPA 3665A  
Cleanup Date: 02/17/17  
Cleanup Method: EPA 3660B  
Cleanup Date: 02/17/17

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
<b>Polychlorinated Biphenyls by GC - Westborough Lab</b>							
Aroclor 1016	ND		ug/l	0.250	--	1	A
Aroclor 1221	ND		ug/l	0.250	--	1	A
Aroclor 1232	ND		ug/l	0.250	--	1	A
Aroclor 1242	ND		ug/l	0.250	--	1	A
Aroclor 1248	ND		ug/l	0.250	--	1	A
Aroclor 1254	ND		ug/l	0.250	--	1	A
Aroclor 1260	ND		ug/l	0.200	--	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	70		30-150	A
Decachlorobiphenyl	60		30-150	A

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704993  
**Report Date:** 02/21/17

### Method Blank Analysis Batch Quality Control

Analytical Method: 5,608  
Analytical Date: 02/17/17 06:20  
Analyst: HT

Extraction Method: EPA 608  
Extraction Date: 02/16/17 13:27  
Cleanup Method: EPA 3665A  
Cleanup Date: 02/16/17  
Cleanup Method: EPA 3660B  
Cleanup Date: 02/16/17

Parameter	Result	Qualifier	Units	RL	MDL	Column
Polychlorinated Biphenyls by GC - Westborough Lab for sample(s): 04 Batch: WG978462-1						
Aroclor 1016	ND		ug/l	0.250	--	A
Aroclor 1221	ND		ug/l	0.250	--	A
Aroclor 1232	ND		ug/l	0.250	--	A
Aroclor 1242	ND		ug/l	0.250	--	A
Aroclor 1248	ND		ug/l	0.250	--	A
Aroclor 1254	ND		ug/l	0.250	--	A
Aroclor 1260	ND		ug/l	0.200	--	A

Surrogate	%Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	81		30-150	A
Decachlorobiphenyl	81		30-150	A

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704993  
**Report Date:** 02/21/17

### Method Blank Analysis Batch Quality Control

Analytical Method: 5,608  
Analytical Date: 02/20/17 15:28  
Analyst: JW

Extraction Method: EPA 608  
Extraction Date: 02/17/17 02:56  
Cleanup Method: EPA 3665A  
Cleanup Date: 02/17/17  
Cleanup Method: EPA 3660B  
Cleanup Date: 02/17/17

Parameter	Result	Qualifier	Units	RL	MDL	Column
Polychlorinated Biphenyls by GC - Westborough Lab for sample(s): 01,03,05 Batch: WG978618-1						
Aroclor 1016	ND		ug/l	0.250	--	A
Aroclor 1221	ND		ug/l	0.250	--	A
Aroclor 1232	ND		ug/l	0.250	--	A
Aroclor 1242	ND		ug/l	0.250	--	A
Aroclor 1248	ND		ug/l	0.250	--	A
Aroclor 1254	ND		ug/l	0.250	--	A
Aroclor 1260	ND		ug/l	0.200	--	A

Surrogate	%Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	58		30-150	A
Decachlorobiphenyl	66		30-150	A

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704993  
**Report Date:** 02/21/17

<b>Parameter</b>	<i>LCS</i> %Recovery	<i>Qual</i>	<i>LCSD</i> %Recovery	<i>Qual</i>	<i>%Recovery</i> <i>Limits</i>	<i>RPD</i>	<i>Qual</i>	<i>RPD</i> <i>Limits</i>	<i>Column</i>
Polychlorinated Biphenyls by GC - Westborough Lab Associated sample(s): 04 Batch: WG978462-2									
Aroclor 1016	98	-	-	-	40-140	-	-	50	A
Aroclor 1260	104	-	-	-	40-140	-	-	50	A

<b>Surrogate</b>	<i>LCS</i> %Recovery	<i>Qual</i>	<i>LCSD</i> %Recovery	<i>Qual</i>	<i>Acceptance</i> <i>Criteria</i>	<i>Column</i>
2,4,5,6-Tetrachloro-m-xylene						30-150 A
Decachlorobiphenyl	89	-	-	-	30-150	A
	94	-	-	-	30-150	A

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704993  
**Report Date:** 02/21/17

<b>Parameter</b>	<i>LCS</i> <i>%Recovery</i>	<i>Qual</i>	<i>LCSD</i> <i>%Recovery</i>	<i>Qual</i>	<i>%Recovery</i> <i>Limits</i>	<i>RPD</i>	<i>Qual</i>	<i>RPD</i> <i>Limits</i>	<i>Column</i>
Polychlorinated Biphenyls by GC - Westborough Lab Associated sample(s): 01,03,05 Batch: WG978618-2									
Aroclor 1016	78	-	-	-	40-140	-	-	50	A
Aroclor 1260	78	-	-	-	40-140	-	-	50	A

<b>Surrogate</b>	<i>LCS</i> <i>%Recovery</i>	<i>Qual</i>	<i>LCSD</i> <i>%Recovery</i>	<i>Qual</i>	<i>Acceptance</i> <i>Criteria</i>	<i>Column</i>
2,4,5,6-Tetrachloro-m-xylene						
Decachlorobiphenyl	62	-	-	-	30-150	A
	70	-	-	-	30-150	A

**Matrix Spike Analysis**  
Batch Quality Control

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704993  
**Report Date:** 02/21/17

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD RPD Qual	RPD Qual	RPD Limits	Column
Polychlorinated Biphenyls by GC - Westborough Lab				Associated sample(s): 04	QC Batch ID: WG978462-3	QC Sample: L1704803-03	Client ID: MS Sample						
Aroclor 1016	ND	1	0.920	92	-	-	-	40-140	-	50	A		
Aroclor 1260	ND	1	1.01	101	-	-	-	40-140	-	50	A		

Surrogate	MS % Recovery	Qualifier	MSD % Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	85				30-150	A
Decachlorobiphenyl	70				30-150	A

# Matrix Spike Analysis

## Batch Quality Control

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704993  
**Report Date:** 02/21/17

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD RPD Qual	RPD Qual	RPD Limits Column
Polychlorinated Biphenyls by GC - Westborough Lab Associated sample(s): 01,03,05 QC Batch ID: WG978618-3 QC Sample: L1704993-03 Client ID: VES-102 (GW)												
Aroclor 1016	ND	1	0.815	82		-	-	-	40-140	-	50	A
Aroclor 1260	ND	1	0.642	64		-	-	-	40-140	-	50	A

Surrogate	MS % Recovery	Qualifier	MSD % Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	66				30-150	A
Decachlorobiphenyl	34				30-150	A

**Lab Duplicate Analysis**  
Batch Quality Control

Project Name: EAST BOSTON  
Project Number: 43068

Lab Number: L1704993  
Report Date: 02/21/17

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Polychlorinated Biphenyls by GC - Westborough Lab Associated sample(s): 04 QC Batch ID: WG978462-4 QC Sample: L1704530-01 Client ID: DUP Sample						
Aroclor 1016	ND	ND	ug/l	NC	50	A
Aroclor 1221	ND	ND	ug/l	NC	50	A
Aroclor 1232	ND	ND	ug/l	NC	50	A
Aroclor 1242	ND	ND	ug/l	NC	50	A
Aroclor 1248	ND	ND	ug/l	NC	50	A
Aroclor 1254	ND	ND	ug/l	NC	50	A
Aroclor 1260	ND	ND	ug/l	NC	50	A

Surrogate	%Recovery	Qualifier	%Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	90		90		30-150	A
Decachlorobiphenyl	89		80		30-150	A

**Lab Duplicate Analysis**  
Batch Quality Control

Project Name: EAST BOSTON  
Project Number: 43068

Lab Number: L1704993  
Report Date: 02/21/17

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Polychlorinated Biphenyls by GC - Westborough Lab Associated sample(s): 01,03,05 QC Batch ID: WG978618-4 QC Sample: L1704993-05 Client ID: VES-123 (GW)						
Aroclor 1016	ND	ND	ug/l	NC	50	A
Aroclor 1221	ND	ND	ug/l	NC	50	A
Aroclor 1232	ND	ND	ug/l	NC	50	A
Aroclor 1242	ND	ND	ug/l	NC	50	A
Aroclor 1248	ND	ND	ug/l	NC	50	A
Aroclor 1254	ND	ND	ug/l	NC	50	A
Aroclor 1260	ND	ND	ug/l	NC	50	A

Surrogate	%Recovery	Qualifier	%Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	70		71		30-150	A
Decachlorobiphenyl	60		54		30-150	A

## METALS



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704993  
**Report Date:** 02/21/17

**SAMPLE RESULTS**

Lab ID: L1704993-01  
Client ID: VES-101 (GW)  
Sample Location: MA  
Matrix: Water

Date Collected: 02/16/17 08:40  
Date Received: 02/16/17  
Field Prep: Field Filtered  
(Dissolved Metals)

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
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**Total Metals - Mansfield Lab**

Iron, Total	22.8	mg/l	0.050	--	1	02/20/17 14:40	02/20/17 19:30	EPA 3005A	19,200.7	JH
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**MCP Total Metals - Mansfield Lab**

Antimony, Total	ND	mg/l	0.0040	--	1	02/20/17 14:40	02/21/17 09:36	EPA 3005A	97,6020A	AM
Arsenic, Total	0.0012	mg/l	0.0005	--	1	02/20/17 14:40	02/21/17 09:36	EPA 3005A	97,6020A	AM
Cadmium, Total	ND	mg/l	0.0002	--	1	02/20/17 14:40	02/21/17 09:36	EPA 3005A	97,6020A	AM
Chromium, Total	ND	mg/l	0.0010	--	1	02/20/17 14:40	02/21/17 09:36	EPA 3005A	97,6020A	AM
Copper, Total	ND	mg/l	0.0010	--	1	02/20/17 14:40	02/21/17 09:36	EPA 3005A	97,6020A	AM
Lead, Total	0.0013	mg/l	0.0005	--	1	02/20/17 14:40	02/21/17 09:36	EPA 3005A	97,6020A	AM
Mercury, Total	ND	mg/l	0.0002	--	1	02/17/17 09:56	02/17/17 19:19	EPA 7470A	97,7470A	EA
Nickel, Total	ND	mg/l	0.0020	--	1	02/20/17 14:40	02/21/17 09:36	EPA 3005A	97,6020A	AM
Selenium, Total	ND	mg/l	0.005	--	1	02/20/17 14:40	02/21/17 09:36	EPA 3005A	97,6020A	AM
Silver, Total	ND	mg/l	0.0005	--	1	02/20/17 14:40	02/21/17 09:36	EPA 3005A	97,6020A	AM
Zinc, Total	ND	mg/l	0.0100	--	1	02/20/17 14:40	02/21/17 09:36	EPA 3005A	97,6020A	AM

**MCP Dissolved Metals - Mansfield Lab**

Antimony, Dissolved	ND	mg/l	0.0040	--	1	02/17/17 09:50	02/21/17 10:06	EPA 3005A	97,6020A	AM
Arsenic, Dissolved	0.0012	mg/l	0.0005	--	1	02/17/17 09:50	02/21/17 10:06	EPA 3005A	97,6020A	AM
Barium, Dissolved	0.5851	mg/l	0.0005	--	1	02/17/17 09:50	02/21/17 10:06	EPA 3005A	97,6020A	AM
Cadmium, Dissolved	ND	mg/l	0.0002	--	1	02/17/17 09:50	02/21/17 10:06	EPA 3005A	97,6020A	AM
Chromium, Dissolved	0.0010	mg/l	0.0010	--	1	02/17/17 09:50	02/21/17 10:06	EPA 3005A	97,6020A	AM
Copper, Dissolved	ND	mg/l	0.0010	--	1	02/17/17 09:50	02/21/17 10:06	EPA 3005A	97,6020A	AM
Lead, Dissolved	ND	mg/l	0.0005	--	1	02/17/17 09:50	02/21/17 10:06	EPA 3005A	97,6020A	AM
Mercury, Dissolved	ND	mg/l	0.0002	--	1	02/20/17 11:33	02/20/17 18:35	EPA 7470A	97,7470A	EA
Nickel, Dissolved	ND	mg/l	0.0020	--	1	02/17/17 09:50	02/21/17 10:06	EPA 3005A	97,6020A	AM
Selenium, Dissolved	ND	mg/l	0.005	--	1	02/17/17 09:50	02/21/17 10:06	EPA 3005A	97,6020A	AM
Silver, Dissolved	ND	mg/l	0.0004	--	1	02/17/17 09:50	02/21/17 10:06	EPA 3005A	97,6020A	AM
Zinc, Dissolved	ND	mg/l	0.0100	--	1	02/17/17 09:50	02/21/17 10:06	EPA 3005A	97,6020A	AM



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704993  
**Report Date:** 02/21/17

**SAMPLE RESULTS**

Lab ID: L1704993-01  
Client ID: VES-101 (GW)  
Sample Location: MA  
Matrix: Water

Date Collected: 02/16/17 08:40  
Date Received: 02/16/17  
Field Prep: Field Filtered  
(Dissolved Metals)

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
<b>Dissolved Metals - Mansfield Lab</b>											
Iron, Dissolved	26		mg/l	0.05	--	1	02/17/17 09:50	02/17/17 12:57	EPA 3005A	19,200.7	PS

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704993  
**Report Date:** 02/21/17

**SAMPLE RESULTS**

Lab ID:	L1704993-02	Date Collected:	02/16/17 11:30
Client ID:	VES-104 (GW)	Date Received:	02/16/17
Sample Location:	MA	Field Prep:	Field Filtered
Matrix:	Water		(Dissolved Metals)

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
<b>MCP Dissolved Metals - Mansfield Lab</b>											
Arsenic, Dissolved	ND		mg/l	0.005	--	1	02/17/17 10:03	02/20/17 18:00	EPA 3005A	97,6010C	PS
Barium, Dissolved	0.857		mg/l	0.010	--	1	02/17/17 10:03	02/20/17 18:00	EPA 3005A	97,6010C	PS
Cadmium, Dissolved	ND		mg/l	0.004	--	1	02/17/17 10:03	02/20/17 18:00	EPA 3005A	97,6010C	PS
Chromium, Dissolved	ND		mg/l	0.010	--	1	02/17/17 10:03	02/20/17 18:00	EPA 3005A	97,6010C	PS
Lead, Dissolved	ND		mg/l	0.010	--	1	02/17/17 10:03	02/20/17 18:00	EPA 3005A	97,6010C	PS
Mercury, Dissolved	ND		mg/l	0.0002	--	1	02/20/17 11:33	02/20/17 18:37	EPA 7470A	97,7470A	EA
Selenium, Dissolved	ND		mg/l	0.010	--	1	02/17/17 10:03	02/20/17 18:00	EPA 3005A	97,6010C	PS
Silver, Dissolved	ND		mg/l	0.007	--	1	02/17/17 10:03	02/20/17 18:00	EPA 3005A	97,6010C	PS



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704993  
**Report Date:** 02/21/17

**SAMPLE RESULTS**

Lab ID: L1704993-03  
Client ID: VES-102 (GW)  
Sample Location: MA  
Matrix: Water

Date Collected: 02/16/17 13:35  
Date Received: 02/16/17  
Field Prep: Field Filtered  
(Dissolved Metals)

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
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**Total Metals - Mansfield Lab**

Iron, Total	18.1	mg/l	0.050	--	1	02/20/17 14:40	02/20/17 20:13	EPA 3005A	19,200.7	JH
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**MCP Total Metals - Mansfield Lab**

Antimony, Total	ND	mg/l	0.0040	--	1	02/20/17 14:40	02/21/17 09:39	EPA 3005A	97,6020A	AM
Arsenic, Total	0.0012	mg/l	0.0005	--	1	02/20/17 14:40	02/21/17 09:39	EPA 3005A	97,6020A	AM
Cadmium, Total	ND	mg/l	0.0002	--	1	02/20/17 14:40	02/21/17 09:39	EPA 3005A	97,6020A	AM
Chromium, Total	0.0013	mg/l	0.0010	--	1	02/20/17 14:40	02/21/17 09:39	EPA 3005A	97,6020A	AM
Copper, Total	ND	mg/l	0.0010	--	1	02/20/17 14:40	02/21/17 09:39	EPA 3005A	97,6020A	AM
Lead, Total	0.0014	mg/l	0.0005	--	1	02/20/17 14:40	02/21/17 09:39	EPA 3005A	97,6020A	AM
Mercury, Total	ND	mg/l	0.0002	--	1	02/17/17 09:56	02/17/17 19:21	EPA 7470A	97,7470A	EA
Nickel, Total	ND	mg/l	0.0020	--	1	02/20/17 14:40	02/21/17 09:39	EPA 3005A	97,6020A	AM
Selenium, Total	ND	mg/l	0.005	--	1	02/20/17 14:40	02/21/17 09:39	EPA 3005A	97,6020A	AM
Silver, Total	ND	mg/l	0.0005	--	1	02/20/17 14:40	02/21/17 09:39	EPA 3005A	97,6020A	AM
Zinc, Total	ND	mg/l	0.0100	--	1	02/20/17 14:40	02/21/17 09:39	EPA 3005A	97,6020A	AM

**MCP Dissolved Metals - Mansfield Lab**

Antimony, Dissolved	ND	mg/l	0.0040	--	1	02/17/17 09:50	02/21/17 10:09	EPA 3005A	97,6020A	AM
Arsenic, Dissolved	0.0010	mg/l	0.0005	--	1	02/17/17 09:50	02/21/17 10:09	EPA 3005A	97,6020A	AM
Barium, Dissolved	0.6371	mg/l	0.0005	--	1	02/17/17 09:50	02/21/17 10:09	EPA 3005A	97,6020A	AM
Cadmium, Dissolved	ND	mg/l	0.0002	--	1	02/17/17 09:50	02/21/17 10:09	EPA 3005A	97,6020A	AM
Chromium, Dissolved	0.0010	mg/l	0.0010	--	1	02/17/17 09:50	02/21/17 10:09	EPA 3005A	97,6020A	AM
Copper, Dissolved	ND	mg/l	0.0010	--	1	02/17/17 09:50	02/21/17 10:09	EPA 3005A	97,6020A	AM
Lead, Dissolved	ND	mg/l	0.0005	--	1	02/17/17 09:50	02/21/17 10:09	EPA 3005A	97,6020A	AM
Mercury, Dissolved	ND	mg/l	0.0002	--	1	02/20/17 11:33	02/20/17 18:39	EPA 7470A	97,7470A	EA
Nickel, Dissolved	ND	mg/l	0.0020	--	1	02/17/17 09:50	02/21/17 10:09	EPA 3005A	97,6020A	AM
Selenium, Dissolved	ND	mg/l	0.005	--	1	02/17/17 09:50	02/21/17 10:09	EPA 3005A	97,6020A	AM
Silver, Dissolved	ND	mg/l	0.0005	--	1	02/17/17 09:50	02/21/17 10:09	EPA 3005A	97,6020A	AM
Zinc, Dissolved	ND	mg/l	0.0100	--	1	02/17/17 09:50	02/21/17 10:09	EPA 3005A	97,6020A	AM



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704993  
**Report Date:** 02/21/17

**SAMPLE RESULTS**

Lab ID: L1704993-03  
Client ID: VES-102 (GW)  
Sample Location: MA  
Matrix: Water

Date Collected: 02/16/17 13:35  
Date Received: 02/16/17  
Field Prep: Field Filtered  
(Dissolved Metals)

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
<b>Dissolved Metals - Mansfield Lab</b>											
Iron, Dissolved	18		mg/l	0.05	--	1	02/17/17 09:50	02/17/17 13:16	EPA 3005A	19,200.7	PS



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704993  
**Report Date:** 02/21/17

**SAMPLE RESULTS**

Lab ID: L1704993-04  
Client ID: VES-103 (GW)  
Sample Location: MA  
Matrix: Water

Date Collected: 02/16/17 12:45  
Date Received: 02/16/17  
Field Prep: Field Filtered  
(Dissolved Metals)

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
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**Total Metals - Mansfield Lab**

Iron, Total	21.1	mg/l	0.050	--	1	02/20/17 14:40	02/20/17 20:17	EPA 3005A	19,200.7	JH
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**MCP Total Metals - Mansfield Lab**

Antimony, Total	ND	mg/l	0.0040	--	1	02/20/17 14:40	02/21/17 09:42	EPA 3005A	97,6020A	AM
Arsenic, Total	0.0025	mg/l	0.0005	--	1	02/20/17 14:40	02/21/17 09:42	EPA 3005A	97,6020A	AM
Cadmium, Total	ND	mg/l	0.0002	--	1	02/20/17 14:40	02/21/17 09:42	EPA 3005A	97,6020A	AM
Chromium, Total	0.0011	mg/l	0.0010	--	1	02/20/17 14:40	02/21/17 09:42	EPA 3005A	97,6020A	AM
Copper, Total	ND	mg/l	0.0010	--	1	02/20/17 14:40	02/21/17 09:42	EPA 3005A	97,6020A	AM
Lead, Total	0.0058	mg/l	0.0005	--	1	02/20/17 14:40	02/21/17 09:42	EPA 3005A	97,6020A	AM
Nickel, Total	ND	mg/l	0.0020	--	1	02/20/17 14:40	02/21/17 09:42	EPA 3005A	97,6020A	AM
Selenium, Total	ND	mg/l	0.005	--	1	02/20/17 14:40	02/21/17 09:42	EPA 3005A	97,6020A	AM
Silver, Total	ND	mg/l	0.0005	--	1	02/20/17 14:40	02/21/17 09:42	EPA 3005A	97,6020A	AM
Zinc, Total	0.0267	mg/l	0.0100	--	1	02/20/17 14:40	02/21/17 09:42	EPA 3005A	97,6020A	AM

**MCP Dissolved Metals - Mansfield Lab**

Antimony, Dissolved	ND	mg/l	0.0040	--	1	02/20/17 10:58	02/21/17 10:29	EPA 3005A	97,6020A	AM
Arsenic, Dissolved	0.0010	mg/l	0.0005	--	1	02/20/17 10:58	02/21/17 10:29	EPA 3005A	97,6020A	AM
Barium, Dissolved	0.6646	mg/l	0.0005	--	1	02/20/17 10:58	02/21/17 10:29	EPA 3005A	97,6020A	AM
Cadmium, Dissolved	ND	mg/l	0.0002	--	1	02/20/17 10:58	02/21/17 10:29	EPA 3005A	97,6020A	AM
Chromium, Dissolved	ND	mg/l	0.0010	--	1	02/20/17 10:58	02/21/17 10:29	EPA 3005A	97,6020A	AM
Copper, Dissolved	ND	mg/l	0.0010	--	1	02/20/17 10:58	02/21/17 10:29	EPA 3005A	97,6020A	AM
Lead, Dissolved	ND	mg/l	0.0005	--	1	02/20/17 10:58	02/21/17 10:29	EPA 3005A	97,6020A	AM
Mercury, Dissolved	ND	mg/l	0.0010	--	1	02/20/17 11:33	02/20/17 18:40	EPA 7470A	97,7470A	EA
Nickel, Dissolved	ND	mg/l	0.0020	--	1	02/20/17 10:58	02/21/17 10:29	EPA 3005A	97,6020A	AM
Selenium, Dissolved	ND	mg/l	0.005	--	1	02/20/17 10:58	02/21/17 10:29	EPA 3005A	97,6020A	AM
Silver, Dissolved	ND	mg/l	0.0005	--	1	02/20/17 10:58	02/21/17 10:29	EPA 3005A	97,6020A	AM
Zinc, Dissolved	ND	mg/l	0.0100	--	1	02/20/17 10:58	02/21/17 10:29	EPA 3005A	97,6020A	AM



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704993  
**Report Date:** 02/21/17

**SAMPLE RESULTS**

Lab ID: L1704993-04  
Client ID: VES-103 (GW)  
Sample Location: MA  
Matrix: Water

Date Collected: 02/16/17 12:45  
Date Received: 02/16/17  
Field Prep: Field Filtered  
(Dissolved Metals)

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
<b>Dissolved Metals - Mansfield Lab</b>											
Iron, Dissolved	23		mg/l	0.05	--	1	02/20/17 10:58	02/17 00:48	EPA 3005A	19,200.7	MC

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704993  
**Report Date:** 02/21/17

**SAMPLE RESULTS**

Lab ID: L1704993-05  
Client ID: VES-123 (GW)  
Sample Location: MA  
Matrix: Water

Date Collected: 02/16/17 15:10  
Date Received: 02/16/17  
Field Prep: Field Filtered  
(Dissolved Metals)

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
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**Total Metals - Mansfield Lab**

Iron, Total	8.08	mg/l	0.050	--	1	02/20/17 14:40	02/20/17 20:22	EPA 3005A	19,200.7	JH
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**MCP Total Metals - Mansfield Lab**

Antimony, Total	ND	mg/l	0.0040	--	1	02/20/17 14:40	02/21/17 09:46	EPA 3005A	97,6020A	AM
Arsenic, Total	0.0058	mg/l	0.0005	--	1	02/20/17 14:40	02/21/17 09:46	EPA 3005A	97,6020A	AM
Cadmium, Total	ND	mg/l	0.0002	--	1	02/20/17 14:40	02/21/17 09:46	EPA 3005A	97,6020A	AM
Chromium, Total	ND	mg/l	0.0010	--	1	02/20/17 14:40	02/21/17 09:46	EPA 3005A	97,6020A	AM
Copper, Total	0.0012	mg/l	0.0010	--	1	02/20/17 14:40	02/21/17 09:46	EPA 3005A	97,6020A	AM
Lead, Total	0.0022	mg/l	0.0005	--	1	02/20/17 14:40	02/21/17 09:46	EPA 3005A	97,6020A	AM
Mercury, Total	ND	mg/l	0.0002	--	1	02/17/17 09:56	02/17/17 19:23	EPA 7470A	97,7470A	EA
Nickel, Total	0.0041	mg/l	0.0020	--	1	02/20/17 14:40	02/21/17 09:46	EPA 3005A	97,6020A	AM
Selenium, Total	ND	mg/l	0.005	--	1	02/20/17 14:40	02/21/17 09:46	EPA 3005A	97,6020A	AM
Silver, Total	ND	mg/l	0.0005	--	1	02/20/17 14:40	02/21/17 09:46	EPA 3005A	97,6020A	AM
Zinc, Total	0.0180	mg/l	0.0100	--	1	02/20/17 14:40	02/21/17 09:46	EPA 3005A	97,6020A	AM

**MCP Dissolved Metals - Mansfield Lab**

Antimony, Dissolved	ND	mg/l	0.0040	--	1	02/17/17 09:50	02/21/17 10:13	EPA 3005A	97,6020A	AM
Arsenic, Dissolved	0.0060	mg/l	0.0005	--	1	02/17/17 09:50	02/21/17 10:13	EPA 3005A	97,6020A	AM
Barium, Dissolved	0.2542	mg/l	0.0005	--	1	02/17/17 09:50	02/21/17 10:13	EPA 3005A	97,6020A	AM
Cadmium, Dissolved	ND	mg/l	0.0002	--	1	02/17/17 09:50	02/21/17 10:13	EPA 3005A	97,6020A	AM
Chromium, Dissolved	ND	mg/l	0.0010	--	1	02/17/17 09:50	02/21/17 10:13	EPA 3005A	97,6020A	AM
Copper, Dissolved	0.0015	mg/l	0.0010	--	1	02/17/17 09:50	02/21/17 10:13	EPA 3005A	97,6020A	AM
Lead, Dissolved	0.0010	mg/l	0.0005	--	1	02/17/17 09:50	02/21/17 10:13	EPA 3005A	97,6020A	AM
Mercury, Dissolved	ND	mg/l	0.0002	--	1	02/20/17 11:33	02/20/17 18:42	EPA 7470A	97,7470A	EA
Nickel, Dissolved	0.0048	mg/l	0.0020	--	1	02/17/17 09:50	02/21/17 10:13	EPA 3005A	97,6020A	AM
Selenium, Dissolved	ND	mg/l	0.005	--	1	02/17/17 09:50	02/21/17 10:13	EPA 3005A	97,6020A	AM
Silver, Dissolved	ND	mg/l	0.0005	--	1	02/17/17 09:50	02/21/17 10:13	EPA 3005A	97,6020A	AM
Zinc, Dissolved	0.0161	mg/l	0.0100	--	1	02/17/17 09:50	02/21/17 10:13	EPA 3005A	97,6020A	AM



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704993  
**Report Date:** 02/21/17

**SAMPLE RESULTS**

Lab ID: L1704993-05  
Client ID: VES-123 (GW)  
Sample Location: MA  
Matrix: Water

Date Collected: 02/16/17 15:10  
Date Received: 02/16/17  
Field Prep: Field Filtered  
(Dissolved Metals)

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
<b>Dissolved Metals - Mansfield Lab</b>											
Iron, Dissolved	8.6		mg/l	0.05	--	1	02/17/17 09:50	02/17/17 13:20	EPA 3005A	19,200.7	PS

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704993  
**Report Date:** 02/21/17

**SAMPLE RESULTS**

Lab ID:	L1704993-06	Date Collected:	02/16/17 10:15
Client ID:	VES-121 (GW)	Date Received:	02/16/17
Sample Location:	MA	Field Prep:	Field Filtered
Matrix:	Water		(Dissolved Metals)

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
<b>MCP Dissolved Metals - Mansfield Lab</b>											
Arsenic, Dissolved	0.005		mg/l	0.005	--	1	02/20/17 14:50	02/21/17 09:26	EPA 3005A	97,6010C	JH
Barium, Dissolved	0.356		mg/l	0.010	--	1	02/20/17 14:50	02/21/17 09:26	EPA 3005A	97,6010C	JH
Cadmium, Dissolved	ND		mg/l	0.004	--	1	02/20/17 14:50	02/21/17 09:26	EPA 3005A	97,6010C	JH
Chromium, Dissolved	ND		mg/l	0.01	--	1	02/20/17 14:50	02/21/17 09:26	EPA 3005A	97,6010C	JH
Lead, Dissolved	ND		mg/l	0.010	--	1	02/20/17 14:50	02/21/17 09:26	EPA 3005A	97,6010C	JH
Mercury, Dissolved	ND		mg/l	0.0002	--	1	02/20/17 11:33	02/20/17 18:44	EPA 7470A	97,7470A	EA
Selenium, Dissolved	ND		mg/l	0.010	--	1	02/20/17 14:50	02/21/17 09:26	EPA 3005A	97,6010C	JH
Silver, Dissolved	ND		mg/l	0.007	--	1	02/20/17 14:50	02/21/17 09:26	EPA 3005A	97,6010C	JH



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704993  
**Report Date:** 02/21/17

## Method Blank Analysis Batch Quality Control

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>MCP Dissolved Metals - Mansfield Lab for sample(s): 02 Batch: WG978713-1</b>									
Arsenic, Dissolved	ND	mg/l	0.005	--	1	02/17/17 10:03	02/20/17 17:33	97,6010C	PS
Barium, Dissolved	ND	mg/l	0.010	--	1	02/17/17 10:03	02/20/17 17:33	97,6010C	PS
Cadmium, Dissolved	ND	mg/l	0.004	--	1	02/17/17 10:03	02/20/17 17:33	97,6010C	PS
Chromium, Dissolved	ND	mg/l	0.01	--	1	02/17/17 10:03	02/20/17 17:33	97,6010C	PS
Lead, Dissolved	ND	mg/l	0.010	--	1	02/17/17 10:03	02/20/17 17:33	97,6010C	PS
Selenium, Dissolved	ND	mg/l	0.010	--	1	02/17/17 10:03	02/20/17 17:33	97,6010C	PS
Silver, Dissolved	ND	mg/l	0.007	--	1	02/17/17 10:03	02/20/17 17:33	97,6010C	PS

### Prep Information

Digestion Method: EPA 3005A

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>MCP Dissolved Metals - Mansfield Lab for sample(s): 01-06 Batch: WG979317-1</b>									
Mercury, Dissolved	ND	mg/l	0.0002	--	1	02/20/17 11:33	02/20/17 18:29	97,7470A	EA

### Prep Information

Digestion Method: EPA 7470A

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>MCP Dissolved Metals - Mansfield Lab for sample(s): 01,03,05 Batch: WG979365-1</b>									
Antimony, Dissolved	ND	mg/l	0.0040	--	1	02/17/17 09:50	02/21/17 09:56	97,6020A	AM
Arsenic, Dissolved	ND	mg/l	0.0005	--	1	02/17/17 09:50	02/21/17 09:56	97,6020A	AM
Barium, Dissolved	ND	mg/l	0.0005	--	1	02/17/17 09:50	02/21/17 09:56	97,6020A	AM
Cadmium, Dissolved	ND	mg/l	0.0002	--	1	02/17/17 09:50	02/21/17 09:56	97,6020A	AM
Chromium, Dissolved	ND	mg/l	0.0010	--	1	02/17/17 09:50	02/21/17 09:56	97,6020A	AM
Copper, Dissolved	ND	mg/l	0.0010	--	1	02/17/17 09:50	02/21/17 09:56	97,6020A	AM
Lead, Dissolved	ND	mg/l	0.0005	--	1	02/17/17 09:50	02/21/17 09:56	97,6020A	AM
Nickel, Dissolved	ND	mg/l	0.0020	--	1	02/17/17 09:50	02/21/17 09:56	97,6020A	AM
Selenium, Dissolved	ND	mg/l	0.005	--	1	02/17/17 09:50	02/21/17 09:56	97,6020A	AM
Silver, Dissolved	ND	mg/l	0.0005	--	1	02/17/17 09:50	02/21/17 09:56	97,6020A	AM



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704993  
**Report Date:** 02/21/17

## Method Blank Analysis Batch Quality Control

Zinc, Dissolved	ND	mg/l	0.0100	--	1	02/17/17 09:50	02/21/17 09:56	97,6020A	AM
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### Prep Information

Digestion Method: EPA 3005A

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Dissolved Metals - Mansfield Lab for sample(s): 01,03,05 Batch: WG979366-1									
Iron, Dissolved	ND	mg/l	0.05	--	1	02/17/17 09:50	02/21/17 12:47	19,200.7	PS

### Prep Information

Digestion Method: EPA 3005A

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Dissolved Metals - Mansfield Lab for sample(s): 04 Batch: WG979377-1									
Iron, Dissolved	ND	mg/l	0.05	--	1	02/20/17 10:58	02/21/17 00:40	19,200.7	MC

### Prep Information

Digestion Method: EPA 3005A

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
MCP Dissolved Metals - Mansfield Lab for sample(s): 04 Batch: WG979378-1									
Antimony, Dissolved	ND	mg/l	0.0040	--	1	02/20/17 10:58	02/21/17 10:18	97,6020A	AM
Arsenic, Dissolved	ND	mg/l	0.0005	--	1	02/20/17 10:58	02/21/17 10:18	97,6020A	AM
Barium, Dissolved	ND	mg/l	0.0005	--	1	02/20/17 10:58	02/21/17 10:18	97,6020A	AM
Cadmium, Dissolved	ND	mg/l	0.0005	--	1	02/20/17 10:58	02/21/17 10:18	97,6020A	AM
Chromium, Dissolved	ND	mg/l	0.0010	--	1	02/20/17 10:58	02/21/17 10:18	97,6020A	AM
Copper, Dissolved	ND	mg/l	0.0010	--	1	02/20/17 10:58	02/21/17 10:18	97,6020A	AM
Lead, Dissolved	ND	mg/l	0.0010	--	1	02/20/17 10:58	02/21/17 10:18	97,6020A	AM
Nickel, Dissolved	ND	mg/l	0.0020	--	1	02/20/17 10:58	02/21/17 10:18	97,6020A	AM
Selenium, Dissolved	ND	mg/l	0.005	--	1	02/20/17 10:58	02/21/17 10:18	97,6020A	AM
Silver, Dissolved	ND	mg/l	0.0005	--	1	02/20/17 10:58	02/21/17 10:18	97,6020A	AM



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704993  
**Report Date:** 02/21/17

## Method Blank Analysis Batch Quality Control

Zinc, Dissolved	ND	mg/l	0.0100	--	1	02/20/17 10:58	02/21/17 10:18	97,6020A	AM
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### Prep Information

Digestion Method: EPA 3005A

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>MCP Dissolved Metals - Mansfield Lab for sample(s): 06 Batch: WG979379-1</b>									
Arsenic, Dissolved	ND	mg/l	0.005	--	1	02/20/17 14:50	02/21/17 10:23	97,6010C	JH
Barium, Dissolved	ND	mg/l	0.010	--	1	02/20/17 14:50	02/21/17 10:23	97,6010C	JH
Cadmium, Dissolved	ND	mg/l	0.004	--	1	02/20/17 14:50	02/21/17 10:23	97,6010C	JH
Chromium, Dissolved	ND	mg/l	0.01	--	1	02/20/17 14:50	02/21/17 10:23	97,6010C	JH
Lead, Dissolved	ND	mg/l	0.010	--	1	02/20/17 14:50	02/21/17 10:23	97,6010C	JH
Selenium, Dissolved	ND	mg/l	0.010	--	1	02/20/17 14:50	02/21/17 10:23	97,6010C	JH
Silver, Dissolved	ND	mg/l	0.007	--	1	02/20/17 14:50	02/21/17 10:23	97,6010C	JH

### Prep Information

Digestion Method: EPA 3005A

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>Total Metals - Mansfield Lab for sample(s): 01,03-05 Batch: WG979391-1</b>									
Iron, Total	ND	mg/l	0.050	--	1	02/20/17 14:40	02/20/17 19:22	19,200.7	JH

### Prep Information

Digestion Method: EPA 3005A

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>MCP Total Metals - Mansfield Lab for sample(s): 01,03-05 Batch: WG979702-1</b>									
Antimony, Total	ND	mg/l	0.0040	--	1	02/20/17 14:40	02/21/17 09:16	97,6020A	AM
Arsenic, Total	ND	mg/l	0.0005	--	1	02/20/17 14:40	02/21/17 09:16	97,6020A	AM
Cadmium, Total	ND	mg/l	0.0002	--	1	02/20/17 14:40	02/21/17 09:16	97,6020A	AM
Chromium, Total	ND	mg/l	0.0010	--	1	02/20/17 14:40	02/21/17 09:16	97,6020A	AM



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704993  
**Report Date:** 02/21/17

## Method Blank Analysis Batch Quality Control

Copper, Total	ND	mg/l	0.0010	--	1	02/20/17 14:40	02/21/17 09:16	97,6020A	AM
Lead, Total	ND	mg/l	0.0005	--	1	02/20/17 14:40	02/21/17 09:16	97,6020A	AM
Nickel, Total	ND	mg/l	0.0020	--	1	02/20/17 14:40	02/21/17 09:16	97,6020A	AM
Selenium, Total	ND	mg/l	0.005	--	1	02/20/17 14:40	02/21/17 09:16	97,6020A	AM
Silver, Total	ND	mg/l	0.0005	--	1	02/20/17 14:40	02/21/17 09:16	97,6020A	AM
Zinc, Total	ND	mg/l	0.0100	--	1	02/20/17 14:40	02/21/17 09:16	97,6020A	AM

### **Prep Information**

Digestion Method: EPA 3005A

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
MCP Total Metals - Mansfield Lab for sample(s): 01,03,05 Batch: WG979747-1									
Mercury, Total	ND	mg/l	0.0002	--	1	02/17/17 09:56	02/17/17 18:57	97,7470A	EA

### **Prep Information**

Digestion Method: EPA 7470A



# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704993  
**Report Date:** 02/21/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Dissolved Metals - Mansfield Lab Associated sample(s): 02 Batch: WG978713-2 WG978713-3								
Arsenic, Dissolved	108		107		80-120	1		20
Barium, Dissolved	97		96		80-120	1		20
Cadmium, Dissolved	105		104		80-120	1		20
Chromium, Dissolved	95		95		80-120	0		20
Lead, Dissolved	108		107		80-120	1		20
Selenium, Dissolved	118		117		80-120	1		20
Silver, Dissolved	103		102		80-120	1		20
MCP Dissolved Metals - Mansfield Lab Associated sample(s): 01-06 Batch: WG979317-2 WG979317-3								
Mercury, Dissolved	108		109		80-120	1		20

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704993  
**Report Date:** 02/21/17

Parameter	LCS %Recovery	LCSD %Recovery	%Recovery Limits	RPD	RPD Limits
MCP Dissolved Metals - Mansfield Lab Associated sample(s): 01,03,05 Batch: WG979365-2 WG979365-3					
Antimony, Dissolved	96	98	80-120	2	20
Arsenic, Dissolved	114	104	80-120	9	20
Barium, Dissolved	103	101	80-120	2	20
Cadmium, Dissolved	104	103	80-120	1	20
Chromium, Dissolved	106	105	80-120	1	20
Copper, Dissolved	107	103	80-120	4	20
Lead, Dissolved	102	100	80-120	2	20
Nickel, Dissolved	108	106	80-120	2	20
Selenium, Dissolved	106	102	80-120	4	20
Silver, Dissolved	99	98	80-120	1	20
Zinc, Dissolved	128	Q	80-120	19	20

Dissolved Metals - Mansfield Lab Associated sample(s): 01,03,05 Batch: WG979366-2

Iron, Dissolved	95	-	85-115	-
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Dissolved Metals - Mansfield Lab Associated sample(s): 04 Batch: WG979377-2

Iron, Dissolved	93	-	85-115	-
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# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704993  
**Report Date:** 02/21/17

Parameter	LCS %Recovery	LCSD %Recovery	%Recovery Limits	RPD	RPD Limits
<b>MCP Dissolved Metals - Mansfield Lab Associated sample(s): 04 Batch: WG979378-2 WG979378-3</b>					
Antimony, Dissolved	96	101	80-120	5	20
Arsenic, Dissolved	104	105	80-120	1	20
Barium, Dissolved	97	102	80-120	5	20
Cadmium, Dissolved	102	104	80-120	2	20
Chromium, Dissolved	106	103	80-120	3	20
Copper, Dissolved	109	105	80-120	4	20
Lead, Dissolved	100	100	80-120	0	20
Nickel, Dissolved	108	105	80-120	3	20
Selenium, Dissolved	103	102	80-120	1	20
Silver, Dissolved	100	100	80-120	0	20
Zinc, Dissolved	109	119	80-120	9	20
<b>MCP Dissolved Metals - Mansfield Lab Associated sample(s): 06 Batch: WG979379-2 WG979379-3</b>					
Arsenic, Dissolved	110	108	80-120	2	20
Barium, Dissolved	96	94	80-120	2	20
Cadmium, Dissolved	101	101	80-120	0	20
Chromium, Dissolved	90	90	80-120	0	20
Lead, Dissolved	98	98	80-120	0	20
Selenium, Dissolved	109	109	80-120	0	20
Silver, Dissolved	100	99	80-120	1	20

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704993  
**Report Date:** 02/21/17

Parameter	LCS %Recovery	LCSD %Recovery	%Recovery Limits	RPD	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01,03-05 Batch: WG979391-2					
Iron, Total	85	-	85-115	-	
MCP Total Metals - Mansfield Lab Associated sample(s): 01,03-05 Batch: WG979702-2 WG979702-3					
Antimony, Total	97	98	80-120	1	20
Arsenic, Total	102	104	80-120	2	20
Cadmium, Total	105	103	80-120	2	20
Chromium, Total	100	105	80-120	5	20
Copper, Total	100	103	80-120	3	20
Lead, Total	99	100	80-120	1	20
Nickel, Total	104	106	80-120	2	20
Selenium, Total	112	102	80-120	9	20
Silver, Total	100	98	80-120	2	20
Zinc, Total	107	106	80-120	1	20
MCP Total Metals - Mansfield Lab Associated sample(s): 01,03,05 Batch: WG979747-2 WG979747-3					
Mercury, Total	93	109	80-120	16	20

**Matrix Spike Analysis**  
**Batch Quality Control**

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704993  
**Report Date:** 02/21/17

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	MSD Qual	MSD Found	MSD %Recovery	MSD Qual	Recovery Limits	RPD	Qual	RPD Limits
Dissolved Metals - Mansfield Lab Associated sample(s): 01,03,05 QC Batch ID: WG979366-3 QC Sample: L1704993-01 Client ID: VES-101 (GW)												
Iron, Dissolved	26	1	26	0	Q	-	-	-	75-125	-	-	20
Dissolved Metals - Mansfield Lab Associated sample(s): 04 QC Batch ID: WG979377-3 QC Sample: L1704993-04 Client ID: VES-103 (GW)												
Iron, Dissolved	23	1	24	100		-	-	-	75-125	-	-	20
Total Metals - Mansfield Lab Associated sample(s): 01,03-05 QC Batch ID: WG979391-3 QC Sample: L1704993-01 Client ID: VES-101 (GW)												
Iron, Total	22.8	1	23.4	60	Q	-	-	-	75-125	-	-	20

**Lab Duplicate Analysis**  
Batch Quality Control

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704993  
**Report Date:** 02/21/17

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Dissolved Metals - Mansfield Lab Associated sample(s): 01,03,05 QC Batch ID: WG979366-4 QC Sample: L1704993-01 Client ID: VES-101 (GW)						
Iron, Dissolved	26	26	mg/l	0		20
Dissolved Metals - Mansfield Lab Associated sample(s): 04 QC Batch ID: WG979377-4 QC Sample: L1704993-04 Client ID: VES-103 (GW)						
Iron, Dissolved	23	23	mg/l	0		20
Total Metals - Mansfield Lab Associated sample(s): 01,03-05 QC Batch ID: WG979391-4 QC Sample: L1704993-01 Client ID: VES-101 (GW)						
Iron, Total	22.8	22.8	mg/l	0		20

# **INORGANICS & MISCELLANEOUS**



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704993  
**Report Date:** 02/21/17

### SAMPLE RESULTS

Lab ID:	L1704993-01	Date Collected:	02/16/17 08:40
Client ID:	VES-101 (GW)	Date Received:	02/16/17
Sample Location:	MA	Field Prep:	Field Filtered (Dissolved Metals)
Matrix:	Water		

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>MCP General Chemistry - Westborough Lab</b>										
Cyanide, Total	0.005		mg/l	0.005	--	1	02/17/17 09:45	02/17/17 13:45	97,9014	JO
<b>General Chemistry - Westborough Lab</b>										
Solids, Total Suspended	32.		mg/l	5.0	NA	1	-	02/19/17 14:35	121,2540D	SG
Chlorine, Total Residual	ND		mg/l	0.02	--	1	-	02/16/17 22:45	121,4500CL-D	AS
TPH, SGT-HEM	ND		mg/l	5.20	--	1.3	02/17/17 16:15	02/17/17 21:30	74,1664A	ML
Phenolics, Total	ND		mg/l	0.030	--	1	02/17/17 15:55	02/17/17 20:58	4,420.1	AW
Chromium, Hexavalent	ND		mg/l	0.010	--	1	02/17/17 01:30	02/17/17 02:06	121,3500CR-B	KA
<b>Anions by Ion Chromatography - Westborough Lab</b>										
Chloride	113.		mg/l	5.00	--	10	-	02/17/17 20:04	44,300.0	AU



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704993  
**Report Date:** 02/21/17

### SAMPLE RESULTS

Lab ID:	L1704993-03	Date Collected:	02/16/17 13:35
Client ID:	VES-102 (GW)	Date Received:	02/16/17
Sample Location:	MA	Field Prep:	Field Filtered (Dissolved Metals)
Matrix:	Water		

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>MCP General Chemistry - Westborough Lab</b>										
Cyanide, Total	0.009		mg/l	0.005	--	1	02/17/17 09:45	02/17/17 13:45	97,9014	JO
<b>General Chemistry - Westborough Lab</b>										
Solids, Total Suspended	33.		mg/l	5.0	NA	1	-	02/19/17 14:35	121,2540D	SG
Chlorine, Total Residual	ND		mg/l	0.02	--	1	-	02/16/17 22:45	121,4500CL-D	AS
TPH, SGT-HEM	ND		mg/l	4.00	--	1	02/17/17 16:15	02/17/17 21:30	74,1664A	ML
Phenolics, Total	ND		mg/l	0.030	--	1	02/17/17 15:55	02/17/17 20:59	4,420.1	AW
Chromium, Hexavalent	ND		mg/l	0.010	--	1	02/17/17 01:30	02/17/17 02:06	121,3500CR-B	KA
<b>Anions by Ion Chromatography - Westborough Lab</b>										
Chloride	71.3		mg/l	5.00	--	10	-	02/17/17 19:52	44,300.0	AU



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704993  
**Report Date:** 02/21/17

### SAMPLE RESULTS

Lab ID:	L1704993-04	Date Collected:	02/16/17 12:45
Client ID:	VES-103 (GW)	Date Received:	02/16/17
Sample Location:	MA	Field Prep:	Field Filtered (Dissolved Metals)
Matrix:	Water		

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>MCP General Chemistry - Westborough Lab</b>										
Cyanide, Total	0.006		mg/l	0.005	--	1	02/17/17 12:27	02/17/17 15:41	97,9014	JO
<b>General Chemistry - Westborough Lab</b>										
Solids, Total Suspended	52.		mg/l	5.0	NA	1	-	02/19/17 14:35	121,2540D	SG
Chlorine, Total Residual	ND		mg/l	0.02	--	1	-	02/17/17 11:20	121,4500CL-D	LH
TPH, SGT-HEM	ND		mg/l	5.20	--	1.3	02/17/17 16:15	02/17/17 21:30	74,1664A	ML
Phenolics, Total	0.056		mg/l	0.030	--	1	02/21/17 09:09	02/21/17 12:48	4,420.1	AW
Chromium, Hexavalent	ND		mg/l	0.010	--	1	02/17/17 10:47	02/17/17 10:58	121,3500CR-B	LH
<b>Anions by Ion Chromatography - Westborough Lab</b>										
Chloride	483.		mg/l	25.0	--	50	-	02/17/17 18:04	44,300.0	AU



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704993  
**Report Date:** 02/21/17

### SAMPLE RESULTS

Lab ID:	L1704993-05	Date Collected:	02/16/17 15:10
Client ID:	VES-123 (GW)	Date Received:	02/16/17
Sample Location:	MA	Field Prep:	Field Filtered (Dissolved Metals)
Matrix:	Water		

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>MCP General Chemistry - Westborough Lab</b>										
Cyanide, Total	ND		mg/l	0.005	--	1	02/17/17 09:45	02/17/17 13:46	97,9014	JO
<b>General Chemistry - Westborough Lab</b>										
Solids, Total Suspended	19.		mg/l	5.0	NA	1	-	02/19/17 14:35	121,2540D	SG
Chlorine, Total Residual	ND		mg/l	0.02	--	1	-	02/16/17 22:45	121,4500CL-D	AS
TPH, SGT-HEM	ND		mg/l	4.40	--	1.1	02/17/17 16:15	02/17/17 21:30	74,1664A	ML
Phenolics, Total	ND		mg/l	0.030	--	1	02/20/17 10:57	02/20/17 15:59	4,420.1	AW
Chromium, Hexavalent	ND		mg/l	0.010	--	1	02/17/17 01:30	02/17/17 02:07	121,3500CR-B	KA
<b>Anions by Ion Chromatography - Westborough Lab</b>										
Chloride	27.3		mg/l	0.500	--	1	-	02/17/17 19:40	44,300.0	AU



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704993  
**Report Date:** 02/21/17

**Method Blank Analysis**  
**Batch Quality Control**

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab for sample(s): 01,03,05 Batch: WG978600-1									
Chlorine, Total Residual	ND	mg/l	0.02	--	1	-	02/16/17 22:45	121,4500CL-D	AS
General Chemistry - Westborough Lab for sample(s): 01,03,05 Batch: WG978624-1									
Chromium, Hexavalent	ND	mg/l	0.010	--	1	02/17/17 01:30	02/17/17 02:05	121,3500CR-B	KA
MCP General Chemistry - Westborough Lab for sample(s): 01,03,05 Batch: WG978715-1									
Cyanide, Total	ND	mg/l	0.005	--	1	02/17/17 09:45	02/17/17 13:40	97,9014	JO
General Chemistry - Westborough Lab for sample(s): 04 Batch: WG978764-1									
Chromium, Hexavalent	ND	mg/l	0.010	--	1	02/17/17 10:47	02/17/17 10:58	121,3500CR-B	LH
General Chemistry - Westborough Lab for sample(s): 04 Batch: WG978785-1									
Chlorine, Total Residual	ND	mg/l	0.02	--	1	-	02/17/17 11:20	121,4500CL-D	LH
MCP General Chemistry - Westborough Lab for sample(s): 04 Batch: WG978786-1									
Cyanide, Total	ND	mg/l	0.005	--	1	02/17/17 12:27	02/17/17 15:43	97,9014	JO
General Chemistry - Westborough Lab for sample(s): 01,03 Batch: WG978858-1									
Phenolics, Total	ND	mg/l	0.030	--	1	02/17/17 15:55	02/17/17 20:53	4,420.1	AW
General Chemistry - Westborough Lab for sample(s): 01,03-05 Batch: WG978864-1									
TPH, SGT-HEM	ND	mg/l	4.00	--	1	02/17/17 16:15	02/17/17 21:30	74,1664A	ML
Anions by Ion Chromatography - Westborough Lab for sample(s): 01,03-05 Batch: WG978961-1									
Chloride	ND	mg/l	0.500	--	1	-	02/17/17 17:16	44,300.0	AU
General Chemistry - Westborough Lab for sample(s): 01,03-05 Batch: WG979152-1									
Solids, Total Suspended	ND	mg/l	5.0	NA	1	-	02/19/17 14:35	121,2540D	SG
General Chemistry - Westborough Lab for sample(s): 05 Batch: WG979320-1									
Phenolics, Total	ND	mg/l	0.030	--	1	02/20/17 10:57	02/20/17 15:19	4,420.1	AW
General Chemistry - Westborough Lab for sample(s): 04 Batch: WG979610-1									
Phenolics, Total	ND	mg/l	0.030	--	1	02/21/17 09:09	02/21/17 12:46	4,420.1	AW



# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704993  
**Report Date:** 02/21/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01,03,05 Batch: WG978600-2								
Chlorine, Total Residual	101	-	-	-	90-110	-	-	-
General Chemistry - Westborough Lab Associated sample(s): 01,03,05 Batch: WG978624-2								
Chromium, Hexavalent	103	-	-	-	85-115	-	-	20
MCP General Chemistry - Westborough Lab Associated sample(s): 01,03,05 Batch: WG978715-2 WG978715-3								
Cyanide, Total	108	-	103	-	80-120	5	-	20
General Chemistry - Westborough Lab Associated sample(s): 04 Batch: WG978764-2								
Chromium, Hexavalent	102	-	-	-	85-115	-	-	20
General Chemistry - Westborough Lab Associated sample(s): 04 Batch: WG978785-2								
Chlorine, Total Residual	105	-	-	-	90-110	-	-	-
MCP General Chemistry - Westborough Lab Associated sample(s): 04 Batch: WG978786-2 WG978786-3								
Cyanide, Total	98	-	99	-	80-120	1	-	20
General Chemistry - Westborough Lab Associated sample(s): 01,03 Batch: WG978858-2								
Phenolics, Total	100	-	-	-	70-130	-	-	-

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704993  
**Report Date:** 02/21/17

Parameter	LCS %Recovery	LCSD %Recovery	%Recovery Limits	RPD	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01,03-05 Batch: WG978864-2					
TPH	90	-	64-132	-	34
Anions by Ion Chromatography - Westborough Lab Associated sample(s): 01,03-05 Batch: WG978961-2					
Chloride	101	-	90-110	-	
General Chemistry - Westborough Lab Associated sample(s): 05 Batch: WG979320-2					
Phenolics, Total	90	-	70-130	-	
General Chemistry - Westborough Lab Associated sample(s): 04 Batch: WG979610-2					
Phenolics, Total	96	-	70-130	-	

**Matrix Spike Analysis**  
**Batch Quality Control**

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704993  
**Report Date:** 02/21/17

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	MSD Qual	MSD Found	MSD %Recovery	MSD Qual	Recovery Limits	RPD RPD	Qual Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01,03,05 QC Batch ID: WG978624-4 QC Sample: L1704993-05 Client ID: VES-123 (GW)												
Chromium, Hexavalent	ND	0.1	0.103	103	-	-	-	-	85-115	-	-	20
General Chemistry - Westborough Lab Associated sample(s): 04 QC Batch ID: WG978764-4 QC Sample: L1704993-04 Client ID: VES-103 (GW)												
Chromium, Hexavalent	ND	0.1	0.105	105	-	-	-	-	85-115	-	-	20
General Chemistry - Westborough Lab Associated sample(s): 01,03 QC Batch ID: WG978858-4 QC Sample: L1704993-03 Client ID: VES-102 (GW)												
Phenolics, Total	ND	0.4	0.32	80	-	-	-	-	70-130	-	-	20
General Chemistry - Westborough Lab Associated sample(s): 01,03-05 QC Batch ID: WG978864-4 QC Sample: L1704993-03 Client ID: VES-102 (GW)												
TPH	ND	22.2	19.6	88	-	-	-	-	64-132	-	-	34
General Chemistry - Westborough Lab Associated sample(s): 04 QC Batch ID: WG979610-4 QC Sample: L1704993-04 Client ID: VES-103 (GW)												
Phenolics, Total	0.056	0.4	0.45	99	-	-	-	-	70-130	-	-	20

**Lab Duplicate Analysis**  
Batch Quality Control

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704993  
**Report Date:** 02/21/17

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01,03,05 QC Batch ID: WG978624-3 QC Sample: L1704993-05 Client ID: VES-123 (GW)						
Chromium, Hexavalent	ND	ND	mg/l	NC		20
General Chemistry - Westborough Lab Associated sample(s): 04 QC Batch ID: WG978764-3 QC Sample: L1704993-04 Client ID: VES-103 (GW)						
Chromium, Hexavalent	ND	ND	mg/l	NC		20
General Chemistry - Westborough Lab Associated sample(s): 04 QC Batch ID: WG978785-3 QC Sample: L1704993-04 Client ID: VES-103 (GW)						
Chlorine, Total Residual	ND	ND	mg/l	NC		20
General Chemistry - Westborough Lab Associated sample(s): 01,03 QC Batch ID: WG978858-3 QC Sample: L1704993-03 Client ID: VES-102 (GW)						
Phenolics, Total	ND	ND	mg/l	NC		20
General Chemistry - Westborough Lab Associated sample(s): 01,03-05 QC Batch ID: WG978864-3 QC Sample: L1704993-01 Client ID: VES-101 (GW)						
TPH, SGT-HEM	ND	ND	mg/l	NC		34
General Chemistry - Westborough Lab Associated sample(s): 04 QC Batch ID: WG979610-3 QC Sample: L1704993-04 Client ID: VES-103 (GW)						
Phenolics, Total	0.056	0.042	mg/l	29	Q	20

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704993  
**Report Date:** 02/21/17

### Sample Receipt and Container Information

Were project specific reporting limits specified? YES

#### Cooler Information Custody Seal

##### Cooler

A	Absent
C	Absent
B	Absent

#### Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L1704993-01A	Vial HCl preserved	A	N/A	4.1	Y	Absent	MCP-8260SIM-10(14),MCP-8260-10(14)
L1704993-01B	Vial HCl preserved	A	N/A	4.1	Y	Absent	MCP-8260SIM-10(14),MCP-8260-10(14)
L1704993-01C	Vial HCl preserved	A	N/A	4.1	Y	Absent	VPH-10(14)
L1704993-01D	Vial Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> preserved	A	N/A	4.1	Y	Absent	504(14)
L1704993-01E	Vial Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> preserved	A	N/A	4.1	Y	Absent	504(14)
L1704993-01F	Plastic 250ml HNO <sub>3</sub> preserved	A	<2	4.1	Y	Absent	FE-RI(180),MCP-PB-6020S-10(180),MCP-7470S-10(28),MCP-SB-6020S-10(180),MCP-CU-6020S-10(180),MCP-BA-6020S-10(180),MCP-CD-6020S-10(180),MCP-SE-6020S-10(180),MCP-AS-6020S-10(180),MCP-NI-6020S-10(180),MCP-AG-6020S-10(180),MCP-ZN-6020S-10(180),MCP-CR-6020S-10(180)
L1704993-01F1	Plastic 250ml HNO <sub>3</sub> preserved	A	<2	4.1	Y	Absent	MCP-CR-6020T-10(180),MCP-7470T-10(28),FE-UI(180),MCP-CU-6020T-10(180),MCP-ZN-6020T-10(180),MCP-AS-6020T-10(180),MCP-NI-6020T-10(180),MCP-AG-6020T-10(180),MCP-CD-6020T-10(180),MCP-SE-6020T-10(180),MCP-PB-6020T-10(180),MCP-SB-6020T-10(180)
L1704993-01G	Plastic 250ml NaOH preserved	A	>12	4.1	Y	Absent	MCP-TCN9014-10(14)
L1704993-01H	Plastic 950ml unpreserved	A	7	4.1	Y	Absent	TSS-2540(7)
L1704993-01I	Plastic 950ml unpreserved	A	7	4.1	Y	Absent	CL-300(28),HEXCR-3500(1),TRC-4500(1)
L1704993-01J	Amber 1000ml HCl preserved	A	N/A	4.1	Y	Absent	TPH-1664(28)
L1704993-01K	Amber 1000ml HCl preserved	A	N/A	4.1	Y	Absent	TPH-1664(28)
L1704993-01L	Amber 950ml H <sub>2</sub> SO <sub>4</sub> preserved	A	<2	4.1	Y	Absent	TPHENOL-420(28)
L1704993-01M	Amber 1000ml unpreserved	A	7	4.1	Y	Absent	8270TCL(7),8270TCL-SIM(7)

\*Values in parentheses indicate holding time in days

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704993  
**Report Date:** 02/21/17

**Container Information**

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L1704993-01N	Amber 1000ml unpreserved	A	7	4.1	Y	Absent	EPH-MS-10(14),EPHD-GC-10(14)
L1704993-01O	Amber 1000ml Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub>	A	7	4.1	Y	Absent	PCB-608(7)
L1704993-01P	Amber 1000ml Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub>	A	7	4.1	Y	Absent	PCB-608(7)
L1704993-02A	Vial HCl preserved	A	N/A	4.1	Y	Absent	MCP-8260-10(14)
L1704993-02B	Vial HCl preserved	A	N/A	4.1	Y	Absent	MCP-8260-10(14)
L1704993-02C	Vial HCl preserved	A	N/A	4.1	Y	Absent	MCP-8260-10(14)
L1704993-02D	Vial HCl preserved	A	N/A	4.1	Y	Absent	VPH-10(14)
L1704993-02E	Vial HCl preserved	A	N/A	4.1	Y	Absent	VPH-10(14)
L1704993-02F	Vial HCl preserved	A	N/A	4.1	Y	Absent	VPH-10(14)
L1704993-02G	Plastic 250ml HNO <sub>3</sub> preserved	A	<2	4.1	Y	Absent	MCP-CD-6010S-10(180),MCP-7470S-10(28),MCP-AG-6010S-10(180),MCP-AS-6010S-10(180),MCP-CR-6010S-10(180),MCP-BA-6010S-10(180),MCP-PB-6010S-10(180),MCP-SE-6010S-10(180)
L1704993-02H	Amber 1000ml HCl preserved	A	N/A	4.1	Y	Absent	EPH-MS-10(14),EPHD-GC-10(14)
L1704993-02I	Amber 1000ml HCl preserved	A	N/A	4.1	Y	Absent	EPH-MS-10(14),EPHD-GC-10(14)
L1704993-03A	Vial HCl preserved	A	N/A	4.1	Y	Absent	MCP-8260SIM-10(14),MCP-8260-10(14)
L1704993-03B	Vial HCl preserved	A	N/A	4.1	Y	Absent	MCP-8260SIM-10(14),MCP-8260-10(14)
L1704993-03C	Vial HCl preserved	A	N/A	4.1	Y	Absent	VPH-10(14)
L1704993-03D	Vial Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> preserved	A	N/A	4.1	Y	Absent	504(14)
L1704993-03E	Vial Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> preserved	A	N/A	4.1	Y	Absent	504(14)
L1704993-03F	Plastic 250ml HNO <sub>3</sub> preserved	A	<2	4.1	Y	Absent	FE-RI(180),MCP-PB-6020S-10(180),MCP-7470S-10(28),MCP-SB-6020S-10(180),MCP-CU-6020S-10(180),MCP-BA-6020S-10(180),MCP-CD-6020S-10(180),MCP-SE-6020S-10(180),MCP-AS-6020S-10(180),MCP-NI-6020S-10(180),MCP-AG-6020S-10(180),MCP-ZN-6020S-10(180),MCP-CR-6020S-10(180)

\*Values in parentheses indicate holding time in days

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704993  
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**Container Information**

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L1704993-03F1	Plastic 250ml HNO3 preserved	A	<2	4.1	Y	Absent	MCP-CR-6020T-10(180),MCP-7470T-10(28),FE-UI(180),MCP-CU-6020T-10(180),MCP-ZN-6020T-10(180),MCP-AS-6020T-10(180),MCP-NI-6020T-10(180),MCP-AG-6020T-10(180),MCP-CD-6020T-10(180),MCP-SE-6020T-10(180),MCP-PB-6020T-10(180),MCP-SB-6020T-10(180)
L1704993-03G	Plastic 250ml NaOH preserved	A	>12	4.1	Y	Absent	MCP-TCN9014-10(14)
L1704993-03H	Plastic 950ml unpreserved	A	7	4.1	Y	Absent	TSS-2540(7)
L1704993-03I	Plastic 950ml unpreserved	A	7	4.1	Y	Absent	CL-300(28),HEXCR-3500(1),TRC-4500(1)
L1704993-03J	Amber 1000ml HCl preserved	A	N/A	4.1	Y	Absent	TPH-1664(28)
L1704993-03K	Amber 1000ml HCl preserved	A	N/A	4.1	Y	Absent	TPH-1664(28)
L1704993-03L	Amber 950ml H2SO4 preserved	A	<2	4.1	Y	Absent	TPHENOL-420(28)
L1704993-03M	Amber 1000ml unpreserved	A	7	4.1	Y	Absent	8270TCL(7),8270TCL-SIM(7)
L1704993-03N	Amber 1000ml unpreserved	A	7	4.1	Y	Absent	EPH-MS-10(14),EPHD-GC-10(14)
L1704993-03O	Amber 1000ml Na2S2O3	A	7	4.1	Y	Absent	PCB-608(7)
L1704993-03P	Amber 1000ml Na2S2O3	A	7	4.1	Y	Absent	PCB-608(7)
L1704993-04A	Vial HCl preserved	C	N/A	2.6	Y	Absent	MCP-8260SIM-10(14),MCP-8260-10(14)
L1704993-04B	Vial HCl preserved	C	N/A	2.6	Y	Absent	MCP-8260SIM-10(14),MCP-8260-10(14)
L1704993-04C	Vial HCl preserved	C	N/A	2.6	Y	Absent	VPH-10(14)
L1704993-04D	Vial Na2S2O3 preserved	C	N/A	2.6	Y	Absent	504(14)
L1704993-04E	Vial Na2S2O3 preserved	C	N/A	2.6	Y	Absent	504(14)
L1704993-04F	Plastic 250ml HNO3 preserved	C	<2	2.6	Y	Absent	FE-RI(180),MCP-PB-6020S-10(180),MCP-7470S-10(28),MCP-SB-6020S-10(180),MCP-CU-6020S-10(180),MCP-BA-6020S-10(180),MCP-CD-6020S-10(180),MCP-SE-6020S-10(180),MCP-AS-6020S-10(180),MCP-NI-6020S-10(180),HOLD-METAL(180),MCP-AG-6020S-10(180),MCP-ZN-6020S-10(180),MCP-CR-6020S-10(180)

\*Values in parentheses indicate holding time in days

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704993  
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**Container Information**

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L1704993-04F1	Plastic 250ml HNO3 preserved spl	C	<2	2.6	Y	Absent	MCP-CR-6020T-10(180),FE-UI(180),MCP-CU-6020T-10(180),MCP-ZN-6020T-10(180),MCP-AS-6020T-10(180),MCP-NI-6020T-10(180),MCP-AG-6020T-10(180),MCP-CD-6020T-10(180),MCP-SE-6020T-10(180),MCP-PB-6020T-10(180),MCP-SB-6020T-10(180)
L1704993-04G	Plastic 250ml NaOH preserved	C	>12	2.6	Y	Absent	MCP-TCN9014-10(14)
L1704993-04H	Plastic 950ml unpreserved	C	7	2.6	Y	Absent	TSS-2540(7)
L1704993-04I	Plastic 950ml unpreserved	C	7	2.6	Y	Absent	CL-300(28),HEXCR-3500(1),TRC-4500(1)
L1704993-04J	Amber 1000ml HCl preserved	C	N/A	2.6	Y	Absent	TPH-1664(28)
L1704993-04K	Amber 1000ml HCl preserved	C	7	2.6	Y	Absent	TPH-1664(28)
L1704993-04L	Amber 950ml H2SO4 preserved	C	<2	2.6	Y	Absent	TPHENOL-420(28)
L1704993-04M	Amber 1000ml unpreserved	C	7	2.6	Y	Absent	8270TCL(7),8270TCL-SIM(7)
L1704993-04N	Amber 1000ml unpreserved	C	7	2.6	Y	Absent	EPH-MS-10(14),EPHD-GC-10(14)
L1704993-04O	Amber 1000ml Na2S2O3	C	7	2.6	Y	Absent	PCB-608(7)
L1704993-04P	Amber 1000ml Na2S2O3	C	7	2.6	Y	Absent	PCB-608(7)
L1704993-05A	Vial HCl preserved	B	N/A	4.1	Y	Absent	MCP-8260SIM-10(14),MCP-8260-10(14)
L1704993-05B	Vial HCl preserved	B	N/A	4.1	Y	Absent	MCP-8260SIM-10(14),MCP-8260-10(14)
L1704993-05C	Vial HCl preserved	B	N/A	4.1	Y	Absent	VPH-10(14)
L1704993-05D	Vial Na2S2O3 preserved	B	N/A	4.1	Y	Absent	504(14)
L1704993-05E	Vial Na2S2O3 preserved	B	N/A	4.1	Y	Absent	504(14)
L1704993-05F	Plastic 250ml HNO3 preserved	A	<2	4.1	Y	Absent	FE-RI(180),MCP-PB-6020S-10(180),MCP-7470S-10(28),MCP-SB-6020S-10(180),MCP-CU-6020S-10(180),MCP-BA-6020S-10(180),MCP-CD-6020S-10(180),MCP-SE-6020S-10(180),MCP-AS-6020S-10(180),MCP-NI-6020S-10(180),MCP-AG-6020S-10(180),MCP-ZN-6020S-10(180),MCP-CR-6020S-10(180)

\*Values in parentheses indicate holding time in days

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1704993  
**Report Date:** 02/21/17

**Container Information**

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L1704993-05F1	Plastic 250ml HNO3 preserved	A	<2	4.1	Y	Absent	MCP-CR-6020T-10(180),MCP-7470T-10(28),FE-UI(180),MCP-CU-6020T-10(180),MCP-ZN-6020T-10(180),MCP-AS-6020T-10(180),MCP-NI-6020T-10(180),MCP-AG-6020T-10(180),MCP-CD-6020T-10(180),MCP-SE-6020T-10(180),MCP-PB-6020T-10(180),MCP-SB-6020T-10(180)
L1704993-05G	Plastic 250ml NaOH preserved	B	>12	4.1	Y	Absent	MCP-TCN9014-10(14)
L1704993-05H	Plastic 950ml unpreserved	B	7	4.1	Y	Absent	TSS-2540(7)
L1704993-05I	Plastic 950ml unpreserved	B	7	4.1	Y	Absent	CL-300(28),HEXCR-3500(1),TRC-4500(1)
L1704993-05J	Amber 1000ml HCl preserved	B	N/A	4.1	Y	Absent	TPH-1664(28)
L1704993-05J1	Amber 1000ml HCl preserved	C	N/A	2.6	Y	Absent	TPH-1664(28)
L1704993-05L	Amber 950ml H2SO4 preserved	B	<2	4.1	Y	Absent	TPHENOL-420(28)
L1704993-05M	Amber 1000ml unpreserved	B	7	4.1	Y	Absent	8270TCL(7),8270TCL-SIM(7)
L1704993-05N	Amber 1000ml unpreserved	B	7	4.1	Y	Absent	EPH-MS-10(14),EPHD-GC-10(14)
L1704993-05O	Amber 1000ml Na2S2O3	B	7	4.1	Y	Absent	PCB-608(7)
L1704993-05P	Amber 1000ml Na2S2O3	B	7	4.1	Y	Absent	PCB-608(7)
L1704993-06A	Vial HCl preserved	C	N/A	2.6	Y	Absent	MCP-8260-10(14)
L1704993-06B	Vial HCl preserved	C	N/A	2.6	Y	Absent	MCP-8260-10(14)
L1704993-06C	Vial HCl preserved	C	N/A	2.6	Y	Absent	MCP-8260-10(14)
L1704993-06D	Vial HCl preserved	C	N/A	2.6	Y	Absent	VPH-10(14)
L1704993-06E	Vial HCl preserved	C	N/A	2.6	Y	Absent	VPH-10(14)
L1704993-06F	Vial HCl preserved	C	N/A	2.6	Y	Absent	VPH-10(14)
L1704993-06G	Plastic 250ml HNO3 preserved	C	<2	2.6	Y	Absent	MCP-CD-6010S-10(180),MCP-7470S-10(28),MCP-AG-6010S-10(180),MCP-AS-6010S-10(180),MCP-CR-6010S-10(180),MCP-BA-6010S-10(180),MCP-PB-6010S-10(180),MCP-SE-6010S-10(180)
L1704993-06H	Amber 1000ml HCl preserved	C	7	2.6	Y	Absent	EPH-MS-10(14),EPHD-GC-10(14)
L1704993-06I	Amber 1000ml HCl preserved	C	7	2.6	Y	Absent	EPH-MS-10(14),EPHD-GC-10(14)

\*Values in parentheses indicate holding time in days

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## GLOSSARY

### **Acronyms**

EDL	- Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).
EPA	- Environmental Protection Agency.
LCS	- Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCSD	- Laboratory Control Sample Duplicate: Refer to LCS.
LFB	- Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
MDL	- Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
MS	- Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available.
MSD	- Matrix Spike Sample Duplicate: Refer to MS.
NA	- Not Applicable.
NC	- Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
NDPA/DPA	- N-Nitrosodiphenylamine/Diphenylamine.
NI	- Not Ignitable.
NP	- Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.
RL	- Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
RPD	- Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.
SRM	- Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.
STLP	- Semi-dynamic Tank Leaching Procedure per EPA Method 1315.
TIC	- Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

### **Footnotes**

- 1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

### **Terms**

**Total:** With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

**Analytical Method:** Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

### **Data Qualifiers**

- A** - Spectra identified as "Aldol Condensation Product".
- B** - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the

**Report Format:** Data Usability Report



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**Data Qualifiers**

reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

- C** - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.
- D** - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.
- E** - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.
- G** - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.
- H** - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.
- I** - The lower value for the two columns has been reported due to obvious interference.
- M** - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.
- NJ** - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.
- P** - The RPD between the results for the two columns exceeds the method-specified criteria.
- Q** - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)
- R** - Analytical results are from sample re-analysis.
- RE** - Analytical results are from sample re-extraction.
- S** - Analytical results are from modified screening analysis.
- J** - Estimated value. This represents an estimated concentration for Tentatively Identified Compounds (TICs).
- ND** - Not detected at the reporting limit (RL) for the sample.

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## REFERENCES

- 1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - IV, 2007.
- 4 Methods for Chemical Analysis of Water and Wastes. EPA 600/4-79-020. Revised March 1983.
- 5 Methods for the Organic Chemical Analysis of Municipal and Industrial Wastewater. Appendix A, Part 136, 40 CFR (Code of Federal Regulations).
- 14 Methods for the Determination of Organic Compounds in Finished Drinking Water and Raw Source Water. EPA/600/4-88/039, Revised July 1991.
- 19 Inductively Coupled Plasma Atomic Emission Spectrometric Method for Trace Element Analysis of Water and Wastes. Appendix C, Part 136, 40 CFR (Code of Federal Regulations). July 1, 1999 edition.
- 44 Methods for the Determination of Inorganic Substances in Environmental Samples, EPA/600/R-93/100, August 1993.
- 74 Method 1664, Revision A: N-Hexane Extractable Material (HEM; Oil & Grease) and Silica Gel Treated N-Hexane Extractable Material (SGT-HEM; Non-polar Material) by Extraction and Gravimetry, EPA-821-R-98-002, February 1999.
- 97 EPA Test Methods (SW-846) with QC Requirements & Performance Standards for the Analysis of EPA SW-846 Methods under the Massachusetts Contingency Plan, WSC-CAM-IIA, IIB, IIIA, IIIB, IIIC, IID, VA, VB, VC, VIA, VIB, VIIIA and VIIIB, July 2010.
- 98 Method for the Determination of Extractable Petroleum Hydrocarbons (EPH), MassDEP, May 2004, Revision 1.1 with QC Requirements & Performance Standards for the Analysis of EPH under the Massachusetts Contingency Plan, WSC-CAM-IVB, July 2010.
- 100 Method for the Determination of Volatile Petroleum Hydrocarbons (VPH), MassDEP, May 2004, Revision 1.1 with QC Requirements & Performance Standards for the Analysis of VPH under the Massachusetts Contingency Plan, WSC-CAM-IVA, July 2010.
- 121 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. Standard Methods Online.

## LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at its own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.



## Certification Information

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**The following analytes are not included in our Primary NELAP Scope of Accreditation:**

**Westborough Facility**

EPA 624: m/p-xylene, o-xylene  
EPA 8260C: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), Methyl methacrylate, 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.  
EPA 8270D: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.  
EPA 300: DW: Bromide  
EPA 6860: NPW and SCM: Perchlorate  
EPA 9010: NPW and SCM: Amenable Cyanide Distillation  
EPA 9012B: NPW: Total Cyanide  
EPA 9050A: NPW: Specific Conductance  
SM3500: NPW: Ferrous Iron  
SM4500: NPW: Amenable Cyanide, Dissolved Oxygen; SCM: Total Phosphorus, TKN, NO<sub>2</sub>, NO<sub>3</sub>.  
SM5310C: DW: Dissolved Organic Carbon

**Mansfield Facility**

SM 2540D: TSS  
EPA 3005A NPW  
EPA 8082A: NPW: PCB: 1, 5, 31, 87, 101, 110, 141, 151, 153, 180, 183, 187.  
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.  
Biological Tissue Matrix: EPA 3050B

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**The following analytes are included in our Massachusetts DEP Scope of Accreditation**

**Westborough Facility:**

**Drinking Water**

EPA 300.0: Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C**, **SM4500CN-CE**, **EPA 180.1**, **SM2130B**, **SM4500CI-D**, **SM2320B**, **SM2540C**, **SM4500H-B**  
EPA 332: Perchlorate; **EPA 524.2**: THMs and VOCs; **EPA 504.1**: EDB, DBCP.  
Microbiology: **SM9215B**; **SM9223-P/A**, **SM9223B-Colilert-QT**,**SM9222D**.

**Non-Potable Water**

**SM4500H,B**, **EPA 120.1**, **SM2510B**, **SM2540C**, **SM2320B**, **SM4500CL-E**, **SM4500F-BC**, **SM4500NH3-BH**, **EPA 350.1**: Ammonia-N, LACHAT 10-107-06-1-B: Ammonia-N, **SM4500NO3-F**, **EPA 353.2**: Nitrate-N, **EPA 351.1**, **SM4500P-E**, **SM4500P-B**, **E**, **SM4500SO4-E**, **SM5220D**, **EPA 410.4**, **SM5210B**, **SM5310C**, **SM4500CL-D**, **EPA 1664**, **EPA 420.1**, **SM4500-CN-CE**, **SM2540D**.  
**EPA 624**: Volatile Halocarbons & Aromatics,  
**EPA 608**: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs  
**EPA 625**: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045**: PCB-Oil.  
Microbiology: **SM9223B-Colilert-QT**; **Enterolert-QT**, **SM9221E**.

**Mansfield Facility:**

**Drinking Water**

**EPA 200.7**: Ba, Be, Cd, Cr, Cu, Ni, Na, Ca. **EPA 200.8**: Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Ni, Se, TL. **EPA 245.1 Hg**.

**Non-Potable Water**

**EPA 200.7**: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.  
**EPA 200.8**: Al, Sb, As, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn.  
**EPA 245.1 Hg**.  
**SM2340B**

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For a complete listing of analytes and methods, please contact your Alpha Project Manager.



Vertex

## CHAIN OF CUSTODY

PAGE 1 OF 1

Date Rec'd in Lab: 02/16/17

ALPHA Job #: L1704993

8 Walkup Drive  
Westboro, MA 01581  
Tel: 508-898-9220

320 Forbes Blvd  
Mansfield, MA 02048  
Tel: 508-822-9300

## Client Information

Client: Vertex

Address: One Congress St, 10th Fl  
Boston, MA 02114

Phone: 781-917-5366

Email: bgibbons@vertexenergy.com  
ctrapp@vertexenergy.com

## Additional Project Information:

\* NPDES parameters: 1,4-dioxane 8260C-SIM, PCB-608, SVOC 8260D-PATH & SIM  
EDB-SO<sub>4</sub>, total metals 6000 & 7000, total cyanide 9000, hexachrom 77964  
TPH 1664, total phenol 9005, total residual chlorine 4500, total suspended solids 2540D  
Chloride 9251

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection		Sample Matrix	Sampler Initials	ANALYSIS												SAMPLE INFO	TOTAL # BOTTLES
		Date	Time			VOC: 8260	SVOC: 624	METALS: 524.2	EPH: MCP 13	TPH: RCR48	PCB: Ranges & Targets	PEST: PP13	Fingerprint: Ranges Only	NPDES parameters (Gr) 14					
04993-01	VES-101 (GW)	2/16/17	0840	GW	TC	X			X	X	X		X	X				16	
02	VES-104 (GW)		1130		TC	X			X	X	X							9	
03	VES-102 (GW)		1335		TC	X			X	X	X		X	X				16	
04	VES-103 (GW)		1245		EP	X			X	X	X		X	X				16	
05	VES-123 (GW)		1510		EP	X			X	X	X		X	X				16	
06	VES-121 (GW)		1015		EP	X			X	X	X							9	

\*Per Bill Gibbons- MCP Protocol required for 8260, Dissolved RCRA8, EPH and VPH

NPDES parameters -do NOT require MCP- but can be used for metals, 8260SIM and TCN

Container Type	Preservative	Container Type	V	P	A	V	
P= Plastic	A= None						
A= Amber glass	B= HCl						
V= Vial	C= HNO <sub>3</sub>						
G= Glass	D= H <sub>2</sub> SO <sub>4</sub>						
B= Bacteria cup	E= NaOH						
C= Cube	F= MeOH						
O= Other	G= NaHSO <sub>4</sub>						
E= Encore	H= Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub>						
D= BOD Bottle	I= Ascorbic Acid						
	J= NH <sub>4</sub> Cl						
	K= Zn Acetate						
	O= Other						

Relinquished By: <i>Rob Maesto</i>	Date/Time: 2/16/17 1800	Received By: <i>Rob Maesto AP</i>	Date/Time: 2/16/17 16:00
			2/16/17 1820

All samples submitted are subject to Alpha's Terms and Conditions.  
See reverse side.

FORM NO: 01-01 (rev. 12-Mar-2012)



Vertex

## CHAIN OF CUSTODY

PAGE 1 OF 1

Date Rec'd in Lab: 02/16/17

ALPHA Job #: L1704993

8 Walkup Drive  
Westboro, MA 01581  
Tel: 508-898-9220320 Forbes Blvd  
Mansfield, MA 02048  
Tel: 508-822-9300

## Client Information

Client: Vertex

Address: One Congress St, 10th Fl  
Boston, MA 02114

Phone: 781-917-5366

Email: bgibbons@vertexeig.com  
ctrapp@vertexeig.com

## Additional Project Information:

\* NPDES parameters: 1,4-dioxane 8260C-SIM, PCB-608, SVOC 8270D-PATH & SIM  
 EDB-SO<sub>4</sub>, total metals 6000 & 7000, total cyanide 9000, hexachrom 71964  
 TPH 1664, total phenol 9005, total residual chlorine 4500, total suspended solids 2540D  
 Chloride 9251

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection		Sample Matrix	Sampler Initials	Turn-Around Time										Sample Comments	
		Date	Time			Turn-Around Time											
04993-01	VES-101 (GW)	2/16/17	0840	GW	TC	X		X	X	X							16
02	VES-104 (GW)		1130		TC	X		X	X	X							9
03	VES-102 (GW)		1335		TC	X		X	X	X							16
04	VES-103 (GW)		1245		EP	X		X	X	X							16
05	VES-123 (GW)		1510		EP	X		X	X	X							16
06	VES-121 (GW)		1015		EP	X		X	X	X							9

## Container Type

 P= Plastic  
 A= Amber glass  
 V= Vial  
 G= Glass  
 B= Bacteria cup  
 C= Cube  
 O= Other  
 E= Encore  
 D= BOD Bottle

## Preservative

 A= None  
 B= HCl  
 C= HNO<sub>3</sub>  
 D= H<sub>2</sub>SO<sub>4</sub>  
 E= NaOH  
 F= MeOH  
 G= NaHSO<sub>4</sub>  
 H= Na<sub>2</sub>S<sub>2</sub>O<sub>3</sub>  
 I= Ascorbic Acid  
 J= NH<sub>4</sub>Cl  
 K= Zn Acetate  
 O= Other

## Container Type

 V P A U  
 C B B

## Preservative

Relinquished By:	Date/Time	Received By:	Date/Time	All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.
K. Johnson Rob Maesto	2/16/17 1800 2/16/17 1820	Rob Maesto APIC	2/16/17 16:00 2/16/17 1820	FORM NO: 01-01 (rev. 12-Mar-2012)

**Method Blank Summary  
Form 4**

Client	: Vertex Environmental Services, Inc.	Lab Number	: L1704993
Project Name	: EAST BOSTON	Project Number	: 43068
Lab Sample ID	: WG979299-5	Lab File ID	: V16170220A07
Instrument ID	: VOA116		
Matrix	: WATER	Analysis Date	: 02/20/17 06:45

Client Sample No.	Lab Sample ID	Analysis Date
WG979299-3LCS	WG979299-3	02/20/17 05:30
WG979299-4LCSD	WG979299-4	02/20/17 05:55
VES-101 (GW)	L1704993-01	02/20/17 08:01
VES-104 (GW)	L1704993-02	02/20/17 08:26
VES-102 (GW)	L1704993-03	02/20/17 08:51
VES-103 (GW)	L1704993-04	02/20/17 09:16
VES-123 (GW)	L1704993-05	02/20/17 09:41

## Method Blank Summary Form 4

Client : Vertex Environmental Services, Inc.      Lab Number : L1704993  
Project Name : EAST BOSTON      Project Number : 43068  
Lab Sample ID : WG979616-5      Lab File ID : VQ170221A06  
Instrument ID : QUIMBY  
Matrix : WATER      Analysis Date : 02/21/17 06:56

Client Sample No.	Lab Sample ID	Analysis Date
WG979616-3LCS	WG979616-3	02/21/17 05:23
WG979616-4LCSD	WG979616-4	02/21/17 05:54
VES-121 (GW)	L1704993-06	02/21/17 07:28

# Continuing Calibration Form 7

Client : Vertex Environmental Services, Inc.      Lab Number : L1704993  
 Project Name : EAST BOSTON      Project Number : 43068  
 Instrument ID : VOA116      Calibration Date : 02/20/17 05:30  
 Lab File ID : V16170220A04      Init. Calib. Date(s) : 01/30/17      01/30/17  
 Sample No : WG979299-2      Init. Calib. Times : 08:54      11:50  
 Channel :

Compound	Ave. RRF	RRF	Min RRF	%D	Max %D	Area%	Dev(min)
Fluorobenzene	1	1	-	0	20	72	0
Dichlorodifluoromethane	0.489	0.514	-	-5.1	20	71	0
Chloromethane	0.517	0.553	-	-7	20	73	0
Vinyl chloride	0.5	0.522	-	-4.4	20	73	0
Bromomethane	0.2	0.186	-	7	20	66	0
Chloroethane	0.245	0.246	-	-0.4	20	67	0
Trichlorofluoromethane	0.574	0.732	-	-27.5*	20	85	0
Ethyl ether	0.134	0.133	-	0.7	20	69	-.01
1,1-Dichloroethene	0.339	0.362	-	-6.8	20	75	0
Carbon disulfide	1.056	1.141	-	-8	20	77	0
Freon-113	0.336	0.408	-	-21.4*	20	80	0
Methylene chloride	0.39	0.412	-	-5.6	20	74	0
Acetone	10	10.674	-	-6.7	20	68	0
trans-1,2-Dichloroethene	0.373	0.39	-	-4.6	20	73	0
Methyl tert-butyl ether	0.693	0.678	-	2.2	20	72	0
tert-Butyl alcohol	0.015	0.015*	-	0	20	71	0
Diisopropyl ether	1.239	1.119	-	9.7	20	67	0
1,1-Dichloroethane	0.791	0.863	-	-9.1	20	74	-.01
Ethyl tert-butyl ether	1.001	0.974	-	2.7	20	71	0
cis-1,2-Dichloroethene	0.404	0.424	-	-5	20	73	0
2,2-Dichloropropane	0.577	0.669	-	-15.9	20	82	0
Bromochloromethane	0.175	0.202	-	-15.4	20	76	0
Chloroform	0.703	0.793	-	-12.8	20	77	0
Carbon tetrachloride	0.575	0.714	-	-24.2*	20	86	0
Tetrahydrofuran	0.075	0.074	-	1.3	20	69	0
Dibromofluoromethane	0.44	0.457	-	-3.9	20	74	0
1,1,1-Trichloroethane	0.626	0.752	-	-20.1*	20	83	0
2-Butanone	0.084	0.085*	-	-1.2	20	69	-.01
1,1-Dichloropropene	0.501	0.529	-	-5.6	20	75	0
Benzene	1.52	1.609	-	-5.9	20	72	0
tert-Amyl methyl ether	0.708	0.663	-	6.4	20	73	0
1,2-Dichloroethane-d4	0.474	0.492	-	-3.8	20	75	0
1,2-Dichloroethane	0.475	0.545	-	-14.7	20	79	0
Trichloroethene	0.418	0.47	-	-12.4	20	78	0
Dibromomethane	0.194	0.213	-	-9.8	20	77	0
1,2-Dichloropropane	0.413	0.421	-	-1.9	20	70	0
2-Chloroethyl vinyl ether	10	6.771	-	32.3*	20	60	0
Bromodichloromethane	0.517	0.557	-	-7.7	20	78	0
1,4-Dioxane	0.00125	0.00115*	-	8	20	70	0
cis-1,3-Dichloropropene	0.438	0.449	-	-2.5	20	73	0
Chlorobenzene-d5	1	1	-	0	20	75	0
Toluene-d8	1.278	1.228	-	3.9	20	71	0
Toluene	0.81	0.835	-	-3.1	20	75	0
4-Methyl-2-pentanone	10	8.203	-	18	20	67	0
Tetrachloroethene	0.378	0.417	-	-10.3	20	81	0

\* Value outside of QC limits.



# Continuing Calibration

## Form 7

Client : Vertex Environmental Services, Inc.      Lab Number : L1704993  
 Project Name : EAST BOSTON      Project Number : 43068  
 Instrument ID : VOA116      Calibration Date : 02/20/17 05:30  
 Lab File ID : V16170220A04      Init. Calib. Date(s) : 01/30/17      01/30/17  
 Sample No : WG979299-2      Init. Calib. Times : 08:54      11:50  
 Channel :

Compound	Ave. RRF	RRF	Min RRF	%D	Max %D	Area%	Dev(min)
trans-1,3-Dichloropropene	0.374	0.367	-	1.9	20	75	0
1,1,2-Trichloroethane	0.193	0.195	-	-1	20	73	0
Chlorodibromomethane	0.286	0.304	-	-6.3	20	78	0
1,3-Dichloropropane	0.381	0.376	-	1.3	20	72	0
1,2-Dibromoethane	0.209	0.217	-	-3.8	20	74	0
2-Hexanone	10	7.464	-	25.4*	20	64	0
Chlorobenzene	0.874	0.89	-	-1.8	20	75	0
Ethylbenzene	1.505	1.545	-	-2.7	20	74	0
1,1,1,2-Tetrachloroethane	0.321	0.357	-	-11.2	20	80	0
p/m Xylene	20	21.011	-	-5.1	20	77	0
o Xylene	20	19.595	-	2	20	75	0
Styrene	20	18.96	-	5.2	20	73	0
1,4-Dichlorobenzene-d4	1	1	-	0	20	85	0
Bromoform	0.329	0.305	-	7.3	20	80	0
Isopropylbenzene	10	8.5	-	15	20	78	0
4-Bromofluorobenzene	0.827	0.76	-	8.1	20	80	0
Bromobenzene	0.667	0.625	-	6.3	20	77	0
n-Propylbenzene	3.447	3.205	-	7	20	76	0
1,1,2,2-Tetrachloroethane	0.477	0.433	-	9.2	20	74	0
2-Chlorotoluene	2.351	2.289	-	2.6	20	78	0
1,3,5-Trimethylbenzene	10	9.283	-	7.2	20	79	0
1,2,3-Trichloropropane	0.376	0.344	-	8.5	20	76	0
4-Chlorotoluene	1.991	1.875	-	5.8	20	76	0
tert-Butylbenzene	10	8.595	-	14	20	78	0
1,2,4-Trimethylbenzene	10	9.088	-	9.1	20	78	0
sec-Butylbenzene	2.307	2.709	-	-17.4	20	92	-01
p-Isopropyltoluene	10	8.792	-	12.1	20	79	0
1,3-Dichlorobenzene	1.357	1.343	-	1	20	80	0
1,4-Dichlorobenzene	1.333	1.29	-	3.2	20	79	0
n-Butylbenzene	10	9.143	-	8.6	20	77	0
1,2-Dichlorobenzene	1.186	1.127	-	5	20	78	0
1,2-Dibromo-3-chloropropan	10	9.071	-	9.3	20	78	0
Hexachlorobutadiene	0.294	0.29	-	1.4	20	85	0
1,2,4-Trichlorobenzene	10	8.157	-	18.4	20	80	0
Naphthalene	10	7.091	-	29.1*	20	76	0
1,2,3-Trichlorobenzene	0.56	0.504	-	10	20	80	0

\* Value outside of QC limits.



**Continuing Calibration  
Form 7**

Client	: Vertex Environmental Services, Inc.	Lab Number	: L1704993
Project Name	: EAST BOSTON	Project Number	: 43068
Instrument ID	: QUIMBY	Calibration Date	: 02/21/17 05:23
Lab File ID	: VQ170221A03	Init. Calib. Date(s)	: 01/30/17
Sample No	: WG979616-2	Init. Calib. Times	: 09:04 01/30/17 12:43
Channel	:		

Compound	Ave. RRF	RRF	Min RRF	%D	Max %D	Area%	Dev(min)
Fluorobenzene	1	1	-	0	20	95	0
Dichlorodifluoromethane	0.503	0.471	-	6.4	20	81	0
Chloromethane	0.631	0.534	-	15.4	20	79	0
Vinyl chloride	0.559	0.582	-	-4.1	20	90	0
Bromomethane	10	8.637	-	13.6	20	94	0
Chloroethane	0.348	0.372	-	-6.9	20	96	0
Trichlorofluoromethane	0.574	0.622	-	-8.4	20	98	0
Ethyl ether	0.155	0.175	-	-12.9	20	101	-.01
1,1-Dichloroethene	0.338	0.365	-	-8	20	98	0
Carbon disulfide	1.059	1.075	-	-1.5	20	97	0
Freon-113	0.315	0.352	-	-11.7	20	100	0
Methylene chloride	0.411	0.43	-	-4.6	20	97	0
Acetone	10	9.738	-	2.6	20	90	0
trans-1,2-Dichloroethene	0.389	0.42	-	-8	20	100	0
Methyl tert-butyl ether	0.749	0.787	-	-5.1	20	99	0
tert-Butyl alcohol	0.011	0.011*	-	0	20	101	0
Diisopropyl ether	1.331	1.362	-	-2.3	20	94	0
1,1-Dichloroethane	0.778	0.805	-	-3.5	20	96	0
Ethyl tert-butyl ether	1.054	1.099	-	-4.3	20	98	0
cis-1,2-Dichloroethene	0.412	0.44	-	-6.8	20	98	0
2,2-Dichloropropane	10	9.773	-	2.3	20	105	0
Bromochloromethane	0.151	0.169	-	-11.9	20	104	0
Chloroform	0.689	0.712	-	-3.3	20	96	0
Carbon tetrachloride	10	9.772	-	2.3	20	103	0
Tetrahydrofuran	0.059	0.059	-	0	20	92	0
Dibromofluoromethane	0.21	0.217	-	-3.3	20	98	0
1,1,1-Trichloroethane	0.632	0.665	-	-5.2	20	98	0
2-Butanone	10	9.741	-	2.6	20	93	-.01
1,1-Dichloropropene	0.606	0.631	-	-4.1	20	96	0
Benzene	1.714	1.796	-	-4.8	20	97	0
tert-Amyl methyl ether	0.802	0.834	-	-4	20	99	0
1,2-Dichloroethane-d4	0.238	0.222	-	6.7	20	88	0
1,2-Dichloroethane	0.495	0.5	-	-1	20	92	0
Trichloroethene	0.447	0.459	-	-2.7	20	96	0
Dibromomethane	0.175	0.187	-	-6.9	20	98	0
1,2-Dichloropropane	0.427	0.44	-	-3	20	95	0
2-Chloroethyl vinyl ether	0.194	0.184	-	5.2	20	91	0
Bromodichloromethane	0.495	0.504	-	-1.8	20	97	0
1,4-Dioxane	0.00158	0.00153*	-	3.2	20	91	0
cis-1,3-Dichloropropene	10	9.238	-	7.6	20	96	0
Chlorobenzene-d5	1	1	-	0	20	104	0
Toluene-d8	1.284	1.247	-	2.9	20	98	0
Toluene	1.445	1.441	-	0.3	20	97	0
4-Methyl-2-pentanone	0.093	0.084*	-	9.7	20	93	0
Tetrachloroethene	0.548	0.558	-	-1.8	20	102	0

\* Value outside of QC limits.



# Continuing Calibration

## Form 7

Client : Vertex Environmental Services, Inc.      Lab Number : L1704993  
 Project Name : EAST BOSTON      Project Number : 43068  
 Instrument ID : QUIMBY      Calibration Date : 02/21/17 05:23  
 Lab File ID : VQ170221A03      Init. Calib. Date(s) : 01/30/17      01/30/17  
 Sample No : WG979616-2      Init. Calib. Times : 09:04      12:43  
 Channel :

Compound	Ave. RRF	RRF	Min RRF	%D	Max %D	Area%	Dev(min)
trans-1,3-Dichloropropene	10	9.069	-	9.3	20	102	0
1,1,2-Trichloroethane	0.253	0.246	-	2.8	20	96	0
Chlorodibromomethane	0.338	0.334	-	1.2	20	102	0
1,3-Dichloropropane	0.569	0.55	-	3.3	20	96	0
1,2-Dibromoethane	0.287	0.286	-	0.3	20	100	0
2-Hexanone	0.154	0.14	-	9.1	20	94	0
Chlorobenzene	1.54	1.53	-	0.6	20	98	0
Ethylbenzene	2.868	2.834	-	1.2	20	99	0
1,1,1,2-Tetrachloroethane	0.436	0.434	-	0.5	20	103	0
p/m Xylene	0.941	0.95	-	-1	20	105	0
o Xylene	0.866	0.884	-	-2.1	20	105	0
Styrene	1.41	1.432	-	-1.6	20	103	0
1,4-Dichlorobenzene-d4	1	1	-	0	20	118	0
Bromoform	10	7.966	-	20.3*	20	104	0
Isopropylbenzene	6.841	6.362	-	7	20	102	0
4-Bromofluorobenzene	1.26	1.192	-	5.4	20	109	0
Bromobenzene	1.437	1.336	-	7	20	103	0
n-Propylbenzene	7.306	6.855	-	6.2	20	104	0
1,1,2,2-Tetrachloroethane	0.921	0.814	-	11.6	20	95	0
2-Chlorotoluene	4.784	4.39	-	8.2	20	102	0
1,3,5-Trimethylbenzene	3.558	3.316	-	6.8	20	107	0
1,2,3-Trichloropropane	0.74	0.637	-	13.9	20	93	0
4-Chlorotoluene	4.168	3.832	-	8.1	20	104	0
tert-Butylbenzene	4.306	4.135	-	4	20	106	0
1,2,4-Trimethylbenzene	3.397	3.29	-	3.1	20	108	0
sec-Butylbenzene	6.45	6.311	-	2.2	20	106	0
p-Isopropyltoluene	4.434	4.453	-	-0.4	20	108	.01
1,3-Dichlorobenzene	2.477	2.36	-	4.7	20	106	0
1,4-Dichlorobenzene	2.309	2.236	-	3.2	20	108	0
n-Butylbenzene	4.424	4.478	-	-1.2	20	104	0
1,2-Dichlorobenzene	2.116	2.065	-	2.4	20	108	0
1,2-Dibromo-3-chloropropan	10	9.755	-	2.4	20	110	0
Hexachlorobutadiene	0.697	0.681	-	2.3	20	107	0
1,2,4-Trichlorobenzene	0.844	0.859	-	-1.8	20	108	0
Naphthalene	1.311	1.294	-	1.3	20	104	0
1,2,3-Trichlorobenzene	0.713	0.731	-	-2.5	20	106	0

\* Value outside of QC limits.



**Method Blank Summary  
Form 4**

Client	: Vertex Environmental Services, Inc.	Lab Number	: L1704993
Project Name	: EAST BOSTON	Project Number	: 43068
Lab Sample ID	: WG979334-5	Lab File ID	: V16170220A07
Instrument ID	: VOA116		
Matrix	: WATER	Analysis Date	: 02/20/17 06:45

Client Sample No.	Lab Sample ID	Analysis Date
WG979334-3LCS	WG979334-3	02/20/17 04:40
WG979334-4LCSD	WG979334-4	02/20/17 05:05
VES-101 (GW)	L1704993-01	02/20/17 08:01
VES-102 (GW)	L1704993-03	02/20/17 08:51
VES-103 (GW)	L1704993-04	02/20/17 09:16
VES-123 (GW)	L1704993-05	02/20/17 09:41

# Continuing Calibration Form 7

Client : Vertex Environmental Services, Inc.      Lab Number : L1704993  
 Project Name : EAST BOSTON      Project Number : 43068  
 Instrument ID : VOA116      Calibration Date : 02/20/17 04:40  
 Lab File ID : V16170220A02      Init. Calib. Date(s) : 02/17/17      02/17/17  
 Sample No : WG979334-2      Init. Calib. Times : 16:39      19:36  
 Channel :

Compound	Ave. RRF	RRF	Min RRF	%D	Max %D	Area%	Dev(min)
Fluorobenzene	1	1	-	0	20	104	0
1,4-Dioxane	10	10.557	-	-5.6	20	118	0
1,4-Dichlorobenzene-d4	1	1	-	0	20	101	0

---

\* Value outside of QC limits.





## ANALYTICAL REPORT

Lab Number:	L1705147
Client:	Vertex Environmental Services, Inc. 400 Libbey Pkwy Weymouth, MA 02184
ATTN:	Bill Gibbons
Phone:	(617) 830-1540
Project Name:	E. BOSTON
Project Number:	43068
Report Date:	02/23/17

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Certifications & Approvals: MA (M-MA086), NH NELAP (2064), NJ NELAP (MA935), CT (PH-0574), IL (200077), ME (MA00086), MD (348), NY (11148), NC (25700/666), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #P330-14-00197).

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Eight Walkup Drive, Westborough, MA 01581-1019  
508-898-9220 (Fax) 508-898-9193 800-624-9220 - [www.alphalab.com](http://www.alphalab.com)



**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1705147  
**Report Date:** 02/23/17

<b>Alpha Sample ID</b>	<b>Client ID</b>	<b>Matrix</b>	<b>Sample Location</b>	<b>Collection Date/Time</b>	<b>Receive Date</b>
L1705147-01	VES-124 (0-2)	SOIL	E. BOSTON	02/17/17 10:30	02/17/17
L1705147-02	VES-124 (3-5)	SOIL	E. BOSTON	02/17/17 10:35	02/17/17
L1705147-03	VES-124 (18-20)	SOIL	E. BOSTON	02/17/17 10:40	02/17/17
L1705147-04	VES-116 (2-4)	SOIL	E. BOSTON	02/17/17 09:45	02/17/17
L1705147-05	VES-112 (0-1)	SOIL	E. BOSTON	02/17/17 09:30	02/17/17
L1705147-06	VES-112 (1-2)	SOIL	E. BOSTON	02/17/17 09:35	02/17/17

**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1705147  
**Report Date:** 02/23/17

### MADEP MCP Response Action Analytical Report Certification

This form provides certifications for all samples performed by MCP methods. Please refer to the Sample Results and Container Information sections of this report for specification of MCP methods used for each analysis. The following questions pertain only to MCP Analytical Methods.

<b>An affirmative response to questions A through F is required for "Presumptive Certainty" status</b>		
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
B	Were the analytical method(s) and all associated QC requirements specified in the selected CAM protocol(s) followed?	YES
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
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
E a.	VPH, EPH, and APH Methods only: Was each method conducted without significant modification(s)? (Refer to the individual method(s) for a list of significant modifications).	YES
E b.	APH and TO-15 Methods only: Was the complete analyte list reported for each method?	N/A
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

<b>A response to questions G, H and I is required for "Presumptive Certainty" status</b>		
G	Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocol(s)?	NO
H	Were all QC performance standards specified in the CAM protocol(s) achieved?	NO
I	Were results reported for the complete analyte list specified in the selected CAM protocol(s)?	NO

**For any questions answered "No", please refer to the case narrative section on the following page(s).**

Please note that sample matrix information is located in the Sample Results section of this report.



**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1705147  
**Report Date:** 02/23/17

### Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively. When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. All specific QC information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated usability implications. Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances the specific failure is not narrated but noted in the associated QC table. The information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated usability implications.

Please see the associated ADEX data file for a comparison of laboratory reporting limits that were achieved with the regulatory Numerical Standards requested on the Chain of Custody.

#### HOLD POLICY

For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Client Service Representative and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Client Services at 800-624-9220 with any questions.

**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1705147  
**Report Date:** 02/23/17

### Case Narrative (continued)

MCP Related Narratives

Volatile Organics

In reference to question H:

The initial calibration, associated with L1705147-02 and -04, did not meet the method required minimum response factor on the lowest calibration standard for 1,4-dioxane (0.0020), as well as the average response factor for 1,4-dioxane.

The initial calibration, associated with L1705147-03 and -06, did not meet the method required minimum response factor on the lowest calibration standard for 1,4-dioxane (0.0027), as well as the average response factor for acetone and 1,4-dioxane.

The continuing calibration standards, associated with L1705147-02, -03, -04, and -06, are outside the acceptance criteria for several compounds; however, they are within overall method allowances. Copies of the continuing calibration standards is included as an addendum to this report.

VPH

In reference to question I:

All samples were analyzed for a subset of MCP analytes per the Chain of Custody.

Pesticides

A copy of the Degradation Standards for 4,4'-DDT and Endrin breakdown products is included as an addendum.

In reference to question G:

One or more of the target analytes did not achieve the requested CAM reporting limits.

Metals

In reference to question H:

The WG980148-4/-5 MS recoveries, performed on L1705147-02, are outside the acceptance criteria for barium (MS 74%) and chromium (568%/248%). Re-analysis of the MS/MSD yielded unacceptable recoveries for barium and chromium in the range of 30-74% or >125%. The LCS recoveries were within acceptance

**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1705147  
**Report Date:** 02/23/17

### Case Narrative (continued)

criteria for these analytes; therefore, no further action was taken. In addition, the MS/MSD RPD is above the acceptance criteria for chromium (38%).

The WG980148-4 MS recovery, performed on L1705147-02, is outside the acceptance criteria for lead (0%).

The MS recovery is <30%, but the sample detection is above the RL. The WG980148-5 MSD recovery, performed on L1705147-02, is outside the acceptance criteria for lead (14100%). Re-analysis of the MSD yielded an unacceptable recovery for lead in the range of 30-74% or >125%. The LCS recovery is acceptable; therefore, no further action was taken. In addition, the MS/MSD RPD is above the acceptance criteria for lead (161%).

The WG980148-7/-8 MS/MSD recoveries, performed on L1705147-06, are outside the acceptance criteria for chromium (56%/48%), lead (MS 65%), and silver (MSD 64%). Re-analysis of the MS yielded unacceptable recoveries for chromium, lead, and silver in the range of 30-74% or >125%. The LCS recoveries were within acceptance criteria for these analytes; therefore, no further action was taken.

The WG980149-4 MSD recovery, performed on L1705147-02, is outside the acceptance criteria for mercury (0%). The MS % recovery is <30%, but the sample detection is above the RL. The LCS recovery is acceptable; therefore, no further action was taken.

The WG980149-5 MS recovery, performed on L1705147-06, is outside the acceptance criteria for mercury (191%). Re-analysis of the MS yielded an unacceptable recovery for mercury in the range of 30-74% or >125%. The LCS recovery was within acceptance criteria; therefore, no further action was taken.

The WG980148-6 serial dilution analysis, associated with L1705147-02, had a %D above the acceptance criteria for barium (14%), chromium (20%) and lead (22%).

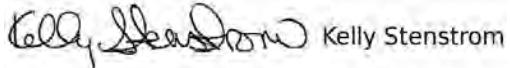
The WG980148-9 serial dilution analysis, associated with L1705147-06, had a %D above the acceptance criteria for chromium (19%).

In reference to question I:

All samples were analyzed for a subset of MCP analytes per the Chain of Custody.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature:


 Kelly Stenstrom

Title: Technical Director/Representative

Date: 02/23/17

# ORGANICS



# VOLATILES



**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1705147  
**Report Date:** 02/23/17

**SAMPLE RESULTS**

Lab ID: L1705147-02  
Client ID: VES-124 (3-5)  
Sample Location: E. BOSTON  
Matrix: Soil  
Analytical Method: 97,8260C  
Analytical Date: 02/21/17 15:32  
Analyst: PK  
Percent Solids: 84%

Date Collected: 02/17/17 10:35  
Date Received: 02/17/17  
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics by 8260/5035 - Westborough Lab</b>						
Methylene chloride	ND	ug/kg	9.0	--	--	1
1,1-Dichloroethane	ND	ug/kg	1.4	--	--	1
Chloroform	ND	ug/kg	1.4	--	--	1
Carbon tetrachloride	ND	ug/kg	0.90	--	--	1
1,2-Dichloropropane	ND	ug/kg	3.2	--	--	1
Dibromochloromethane	ND	ug/kg	0.90	--	--	1
1,1,2-Trichloroethane	ND	ug/kg	1.4	--	--	1
Tetrachloroethene	ND	ug/kg	0.90	--	--	1
Chlorobenzene	ND	ug/kg	0.90	--	--	1
Trichlorofluoromethane	ND	ug/kg	3.6	--	--	1
1,2-Dichloroethane	ND	ug/kg	0.90	--	--	1
1,1,1-Trichloroethane	ND	ug/kg	0.90	--	--	1
Bromodichloromethane	ND	ug/kg	0.90	--	--	1
trans-1,3-Dichloropropene	ND	ug/kg	0.90	--	--	1
cis-1,3-Dichloropropene	ND	ug/kg	0.90	--	--	1
1,3-Dichloropropene, Total	ND	ug/kg	0.90	--	--	1
1,1-Dichloropropene	ND	ug/kg	3.6	--	--	1
Bromoform	ND	ug/kg	3.6	--	--	1
1,1,2,2-Tetrachloroethane	ND	ug/kg	0.90	--	--	1
Benzene	ND	ug/kg	0.90	--	--	1
Toluene	ND	ug/kg	1.4	--	--	1
Ethylbenzene	ND	ug/kg	0.90	--	--	1
Chloromethane	ND	ug/kg	3.6	--	--	1
Bromomethane	ND	ug/kg	1.8	--	--	1
Vinyl chloride	ND	ug/kg	1.8	--	--	1
Chloroethane	ND	ug/kg	1.8	--	--	1
1,1-Dichloroethene	ND	ug/kg	0.90	--	--	1
trans-1,2-Dichloroethene	ND	ug/kg	1.4	--	--	1
Trichloroethene	ND	ug/kg	0.90	--	--	1
1,2-Dichlorobenzene	ND	ug/kg	3.6	--	--	1



**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1705147  
**Report Date:** 02/23/17

**SAMPLE RESULTS**

Lab ID:	L1705147-02	Date Collected:	02/17/17 10:35			
Client ID:	VES-124 (3-5)	Date Received:	02/17/17			
Sample Location:	E. BOSTON	Field Prep:	Not Specified			
Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics by 8260/5035 - Westborough Lab</b>						
1,3-Dichlorobenzene	ND	ug/kg	3.6	--	1	
1,4-Dichlorobenzene	ND	ug/kg	3.6	--	1	
Methyl tert butyl ether	ND	ug/kg	1.8	--	1	
p/m-Xylene	ND	ug/kg	1.8	--	1	
o-Xylene	ND	ug/kg	1.8	--	1	
Xylenes, Total	ND	ug/kg	1.8	--	1	
cis-1,2-Dichloroethene	ND	ug/kg	0.90	--	1	
1,2-Dichloroethene, Total	ND	ug/kg	0.90	--	1	
Dibromomethane	ND	ug/kg	3.6	--	1	
1,2,3-Trichloropropane	ND	ug/kg	3.6	--	1	
Styrene	ND	ug/kg	1.8	--	1	
Dichlorodifluoromethane	ND	ug/kg	9.0	--	1	
Acetone	ND	ug/kg	32	--	1	
Carbon disulfide	ND	ug/kg	3.6	--	1	
Methyl ethyl ketone	ND	ug/kg	9.0	--	1	
Methyl isobutyl ketone	ND	ug/kg	9.0	--	1	
2-Hexanone	ND	ug/kg	9.0	--	1	
Bromochloromethane	ND	ug/kg	3.6	--	1	
Tetrahydrofuran	ND	ug/kg	3.6	--	1	
2,2-Dichloropropane	ND	ug/kg	4.5	--	1	
1,2-Dibromoethane	ND	ug/kg	3.6	--	1	
1,3-Dichloropropane	ND	ug/kg	3.6	--	1	
1,1,1,2-Tetrachloroethane	ND	ug/kg	0.90	--	1	
Bromobenzene	ND	ug/kg	4.5	--	1	
n-Butylbenzene	ND	ug/kg	0.90	--	1	
sec-Butylbenzene	ND	ug/kg	0.90	--	1	
tert-Butylbenzene	ND	ug/kg	3.6	--	1	
o-Chlorotoluene	ND	ug/kg	3.6	--	1	
p-Chlorotoluene	ND	ug/kg	3.6	--	1	
1,2-Dibromo-3-chloropropane	ND	ug/kg	3.6	--	1	
Hexachlorobutadiene	ND	ug/kg	3.6	--	1	
Isopropylbenzene	ND	ug/kg	0.90	--	1	
p-Isopropyltoluene	ND	ug/kg	0.90	--	1	
Naphthalene	ND	ug/kg	3.6	--	1	
n-Propylbenzene	ND	ug/kg	0.90	--	1	
1,2,3-Trichlorobenzene	ND	ug/kg	3.6	--	1	
1,2,4-Trichlorobenzene	ND	ug/kg	3.6	--	1	
1,3,5-Trimethylbenzene	ND	ug/kg	3.6	--	1	
1,2,4-Trimethylbenzene	ND	ug/kg	3.6	--	1	



Project Name: E. BOSTON

Lab Number: L1705147

Project Number: 43068

Report Date: 02/23/17

**SAMPLE RESULTS**

Lab ID: L1705147-02  
 Client ID: VES-124 (3-5)  
 Sample Location: E. BOSTON

Date Collected: 02/17/17 10:35  
 Date Received: 02/17/17  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics by 8260/5035 - Westborough Lab						
Diethyl ether	ND		ug/kg	4.5	--	1
Diisopropyl Ether	ND		ug/kg	3.6	--	1
Ethyl-Tert-Butyl-Ether	ND		ug/kg	3.6	--	1
Tertiary-Amyl Methyl Ether	ND		ug/kg	3.6	--	1
1,4-Dioxane	ND		ug/kg	36	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	102		70-130
Toluene-d8	97		70-130
4-Bromofluorobenzene	107		70-130
Dibromofluoromethane	100		70-130

**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1705147  
**Report Date:** 02/23/17

**SAMPLE RESULTS**

Lab ID: L1705147-03  
Client ID: VES-124 (18-20)  
Sample Location: E. BOSTON  
Matrix: Soil  
Analytical Method: 97,8260C  
Analytical Date: 02/20/17 11:56  
Analyst: JC  
Percent Solids: 78%

Date Collected: 02/17/17 10:40  
Date Received: 02/17/17  
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics by 8260/5035 - Westborough Lab</b>						
Methylene chloride	ND	ug/kg	9.4	--	--	1
1,1-Dichloroethane	ND	ug/kg	1.4	--	--	1
Chloroform	ND	ug/kg	1.4	--	--	1
Carbon tetrachloride	ND	ug/kg	0.94	--	--	1
1,2-Dichloropropane	ND	ug/kg	3.3	--	--	1
Dibromochloromethane	ND	ug/kg	0.94	--	--	1
1,1,2-Trichloroethane	ND	ug/kg	1.4	--	--	1
Tetrachloroethene	ND	ug/kg	0.94	--	--	1
Chlorobenzene	ND	ug/kg	0.94	--	--	1
Trichlorofluoromethane	ND	ug/kg	3.8	--	--	1
1,2-Dichloroethane	ND	ug/kg	0.94	--	--	1
1,1,1-Trichloroethane	ND	ug/kg	0.94	--	--	1
Bromodichloromethane	ND	ug/kg	0.94	--	--	1
trans-1,3-Dichloropropene	ND	ug/kg	0.94	--	--	1
cis-1,3-Dichloropropene	ND	ug/kg	0.94	--	--	1
1,3-Dichloropropene, Total	ND	ug/kg	0.94	--	--	1
1,1-Dichloropropene	ND	ug/kg	3.8	--	--	1
Bromoform	ND	ug/kg	3.8	--	--	1
1,1,2,2-Tetrachloroethane	ND	ug/kg	0.94	--	--	1
Benzene	ND	ug/kg	0.94	--	--	1
Toluene	ND	ug/kg	1.4	--	--	1
Ethylbenzene	ND	ug/kg	0.94	--	--	1
Chloromethane	ND	ug/kg	3.8	--	--	1
Bromomethane	ND	ug/kg	1.9	--	--	1
Vinyl chloride	ND	ug/kg	1.9	--	--	1
Chloroethane	ND	ug/kg	1.9	--	--	1
1,1-Dichloroethene	ND	ug/kg	0.94	--	--	1
trans-1,2-Dichloroethene	ND	ug/kg	1.4	--	--	1
Trichloroethene	ND	ug/kg	0.94	--	--	1
1,2-Dichlorobenzene	ND	ug/kg	3.8	--	--	1



**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1705147  
**Report Date:** 02/23/17

**SAMPLE RESULTS**

Lab ID:	L1705147-03	Date Collected:	02/17/17 10:40		
Client ID:	VES-124 (18-20)	Date Received:	02/17/17		
Sample Location:	E. BOSTON	Field Prep:	Not Specified		
Parameter	Result	Qualifier	Units	RL	MDL
<b>MCP Volatile Organics by 8260/5035 - Westborough Lab</b>					
1,3-Dichlorobenzene	ND	ug/kg	3.8	--	1
1,4-Dichlorobenzene	ND	ug/kg	3.8	--	1
Methyl tert butyl ether	ND	ug/kg	1.9	--	1
p/m-Xylene	ND	ug/kg	1.9	--	1
o-Xylene	ND	ug/kg	1.9	--	1
Xylenes, Total	ND	ug/kg	1.9	--	1
cis-1,2-Dichloroethene	ND	ug/kg	0.94	--	1
1,2-Dichloroethene, Total	ND	ug/kg	0.94	--	1
Dibromomethane	ND	ug/kg	3.8	--	1
1,2,3-Trichloropropane	ND	ug/kg	3.8	--	1
Styrene	ND	ug/kg	1.9	--	1
Dichlorodifluoromethane	ND	ug/kg	9.4	--	1
Acetone	ND	ug/kg	34	--	1
Carbon disulfide	5.0	ug/kg	3.8	--	1
Methyl ethyl ketone	ND	ug/kg	9.4	--	1
Methyl isobutyl ketone	ND	ug/kg	9.4	--	1
2-Hexanone	ND	ug/kg	9.4	--	1
Bromochloromethane	ND	ug/kg	3.8	--	1
Tetrahydrofuran	ND	ug/kg	3.8	--	1
2,2-Dichloropropane	ND	ug/kg	4.7	--	1
1,2-Dibromoethane	ND	ug/kg	3.8	--	1
1,3-Dichloropropane	ND	ug/kg	3.8	--	1
1,1,1,2-Tetrachloroethane	ND	ug/kg	0.94	--	1
Bromobenzene	ND	ug/kg	4.7	--	1
n-Butylbenzene	ND	ug/kg	0.94	--	1
sec-Butylbenzene	ND	ug/kg	0.94	--	1
tert-Butylbenzene	ND	ug/kg	3.8	--	1
o-Chlorotoluene	ND	ug/kg	3.8	--	1
p-Chlorotoluene	ND	ug/kg	3.8	--	1
1,2-Dibromo-3-chloropropane	ND	ug/kg	3.8	--	1
Hexachlorobutadiene	ND	ug/kg	3.8	--	1
Isopropylbenzene	ND	ug/kg	0.94	--	1
p-Isopropyltoluene	ND	ug/kg	0.94	--	1
Naphthalene	ND	ug/kg	3.8	--	1
n-Propylbenzene	ND	ug/kg	0.94	--	1
1,2,3-Trichlorobenzene	ND	ug/kg	3.8	--	1
1,2,4-Trichlorobenzene	ND	ug/kg	3.8	--	1
1,3,5-Trimethylbenzene	ND	ug/kg	3.8	--	1
1,2,4-Trimethylbenzene	ND	ug/kg	3.8	--	1



Project Name: E. BOSTON

Lab Number: L1705147

Project Number: 43068

Report Date: 02/23/17

**SAMPLE RESULTS**

Lab ID: L1705147-03  
 Client ID: VES-124 (18-20)  
 Sample Location: E. BOSTON

Date Collected: 02/17/17 10:40  
 Date Received: 02/17/17  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics by 8260/5035 - Westborough Lab						
Diethyl ether	ND	ug/kg	4.7	--	--	1
Diisopropyl Ether	ND	ug/kg	3.8	--	--	1
Ethyl-Tert-Butyl-Ether	ND	ug/kg	3.8	--	--	1
Tertiary-Amyl Methyl Ether	ND	ug/kg	3.8	--	--	1
1,4-Dioxane	ND	ug/kg	38	--	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	87		70-130
Toluene-d8	100		70-130
4-Bromofluorobenzene	98		70-130
Dibromofluoromethane	93		70-130

**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1705147  
**Report Date:** 02/23/17

**SAMPLE RESULTS**

Lab ID: L1705147-04  
Client ID: VES-116 (2-4)  
Sample Location: E. BOSTON  
Matrix: Soil  
Analytical Method: 97,8260C  
Analytical Date: 02/21/17 15:06  
Analyst: JC  
Percent Solids: 93%

Date Collected: 02/17/17 09:45  
Date Received: 02/17/17  
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics by 8260/5035 - Westborough Lab</b>						
Methylene chloride	ND	ug/kg	6.6	--	--	1
1,1-Dichloroethane	ND	ug/kg	0.98	--	--	1
Chloroform	ND	ug/kg	0.98	--	--	1
Carbon tetrachloride	ND	ug/kg	0.66	--	--	1
1,2-Dichloropropane	ND	ug/kg	2.3	--	--	1
Dibromochloromethane	ND	ug/kg	0.66	--	--	1
1,1,2-Trichloroethane	ND	ug/kg	0.98	--	--	1
Tetrachloroethene	ND	ug/kg	0.66	--	--	1
Chlorobenzene	ND	ug/kg	0.66	--	--	1
Trichlorofluoromethane	ND	ug/kg	2.6	--	--	1
1,2-Dichloroethane	ND	ug/kg	0.66	--	--	1
1,1,1-Trichloroethane	ND	ug/kg	0.66	--	--	1
Bromodichloromethane	ND	ug/kg	0.66	--	--	1
trans-1,3-Dichloropropene	ND	ug/kg	0.66	--	--	1
cis-1,3-Dichloropropene	ND	ug/kg	0.66	--	--	1
1,3-Dichloropropene, Total	ND	ug/kg	0.66	--	--	1
1,1-Dichloropropene	ND	ug/kg	2.6	--	--	1
Bromoform	ND	ug/kg	2.6	--	--	1
1,1,2,2-Tetrachloroethane	ND	ug/kg	0.66	--	--	1
Benzene	ND	ug/kg	0.66	--	--	1
Toluene	ND	ug/kg	0.98	--	--	1
Ethylbenzene	ND	ug/kg	0.66	--	--	1
Chloromethane	ND	ug/kg	2.6	--	--	1
Bromomethane	ND	ug/kg	1.3	--	--	1
Vinyl chloride	ND	ug/kg	1.3	--	--	1
Chloroethane	ND	ug/kg	1.3	--	--	1
1,1-Dichloroethene	ND	ug/kg	0.66	--	--	1
trans-1,2-Dichloroethene	ND	ug/kg	0.98	--	--	1
Trichloroethene	ND	ug/kg	0.66	--	--	1
1,2-Dichlorobenzene	ND	ug/kg	2.6	--	--	1



**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1705147  
**Report Date:** 02/23/17

**SAMPLE RESULTS**

Lab ID:	L1705147-04	Date Collected:	02/17/17 09:45			
Client ID:	VES-116 (2-4)	Date Received:	02/17/17			
Sample Location:	E. BOSTON	Field Prep:	Not Specified			
Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics by 8260/5035 - Westborough Lab</b>						
1,3-Dichlorobenzene	ND	ug/kg	2.6	--	1	
1,4-Dichlorobenzene	ND	ug/kg	2.6	--	1	
Methyl tert butyl ether	ND	ug/kg	1.3	--	1	
p/m-Xylene	ND	ug/kg	1.3	--	1	
o-Xylene	ND	ug/kg	1.3	--	1	
Xylenes, Total	ND	ug/kg	1.3	--	1	
cis-1,2-Dichloroethene	ND	ug/kg	0.66	--	1	
1,2-Dichloroethene, Total	ND	ug/kg	0.66	--	1	
Dibromomethane	ND	ug/kg	2.6	--	1	
1,2,3-Trichloropropane	ND	ug/kg	2.6	--	1	
Styrene	ND	ug/kg	1.3	--	1	
Dichlorodifluoromethane	ND	ug/kg	6.6	--	1	
Acetone	ND	ug/kg	24	--	1	
Carbon disulfide	ND	ug/kg	2.6	--	1	
Methyl ethyl ketone	ND	ug/kg	6.6	--	1	
Methyl isobutyl ketone	ND	ug/kg	6.6	--	1	
2-Hexanone	ND	ug/kg	6.6	--	1	
Bromochloromethane	ND	ug/kg	2.6	--	1	
Tetrahydrofuran	ND	ug/kg	2.6	--	1	
2,2-Dichloropropane	ND	ug/kg	3.3	--	1	
1,2-Dibromoethane	ND	ug/kg	2.6	--	1	
1,3-Dichloropropane	ND	ug/kg	2.6	--	1	
1,1,1,2-Tetrachloroethane	ND	ug/kg	0.66	--	1	
Bromobenzene	ND	ug/kg	3.3	--	1	
n-Butylbenzene	ND	ug/kg	0.66	--	1	
sec-Butylbenzene	ND	ug/kg	0.66	--	1	
tert-Butylbenzene	ND	ug/kg	2.6	--	1	
o-Chlorotoluene	ND	ug/kg	2.6	--	1	
p-Chlorotoluene	ND	ug/kg	2.6	--	1	
1,2-Dibromo-3-chloropropane	ND	ug/kg	2.6	--	1	
Hexachlorobutadiene	ND	ug/kg	2.6	--	1	
Isopropylbenzene	ND	ug/kg	0.66	--	1	
p-Isopropyltoluene	ND	ug/kg	0.66	--	1	
Naphthalene	ND	ug/kg	2.6	--	1	
n-Propylbenzene	ND	ug/kg	0.66	--	1	
1,2,3-Trichlorobenzene	ND	ug/kg	2.6	--	1	
1,2,4-Trichlorobenzene	ND	ug/kg	2.6	--	1	
1,3,5-Trimethylbenzene	ND	ug/kg	2.6	--	1	
1,2,4-Trimethylbenzene	ND	ug/kg	2.6	--	1	



Project Name: E. BOSTON

Lab Number: L1705147

Project Number: 43068

Report Date: 02/23/17

**SAMPLE RESULTS**

Lab ID: L1705147-04  
 Client ID: VES-116 (2-4)  
 Sample Location: E. BOSTON

Date Collected: 02/17/17 09:45  
 Date Received: 02/17/17  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics by 8260/5035 - Westborough Lab						
Diethyl ether	ND	ug/kg	3.3	--	--	1
Diisopropyl Ether	ND	ug/kg	2.6	--	--	1
Ethyl-Tert-Butyl-Ether	ND	ug/kg	2.6	--	--	1
Tertiary-Amyl Methyl Ether	ND	ug/kg	2.6	--	--	1
1,4-Dioxane	ND	ug/kg	26	--	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	101		70-130
Toluene-d8	98		70-130
4-Bromofluorobenzene	105		70-130
Dibromofluoromethane	101		70-130

**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1705147  
**Report Date:** 02/23/17

**SAMPLE RESULTS**

Lab ID: L1705147-06  
Client ID: VES-112 (1-2)  
Sample Location: E. BOSTON  
Matrix: Soil  
Analytical Method: 97,8260C  
Analytical Date: 02/20/17 12:48  
Analyst: JC  
Percent Solids: 94%

Date Collected: 02/17/17 09:35  
Date Received: 02/17/17  
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics by 8260/5035 - Westborough Lab</b>						
Methylene chloride	ND	ug/kg	8.7	--	--	1
1,1-Dichloroethane	ND	ug/kg	1.3	--	--	1
Chloroform	ND	ug/kg	1.3	--	--	1
Carbon tetrachloride	ND	ug/kg	0.87	--	--	1
1,2-Dichloropropane	ND	ug/kg	3.0	--	--	1
Dibromochloromethane	ND	ug/kg	0.87	--	--	1
1,1,2-Trichloroethane	ND	ug/kg	1.3	--	--	1
Tetrachloroethene	ND	ug/kg	0.87	--	--	1
Chlorobenzene	ND	ug/kg	0.87	--	--	1
Trichlorofluoromethane	ND	ug/kg	3.5	--	--	1
1,2-Dichloroethane	ND	ug/kg	0.87	--	--	1
1,1,1-Trichloroethane	ND	ug/kg	0.87	--	--	1
Bromodichloromethane	ND	ug/kg	0.87	--	--	1
trans-1,3-Dichloropropene	ND	ug/kg	0.87	--	--	1
cis-1,3-Dichloropropene	ND	ug/kg	0.87	--	--	1
1,3-Dichloropropene, Total	ND	ug/kg	0.87	--	--	1
1,1-Dichloropropene	ND	ug/kg	3.5	--	--	1
Bromoform	ND	ug/kg	3.5	--	--	1
1,1,2,2-Tetrachloroethane	ND	ug/kg	0.87	--	--	1
Benzene	ND	ug/kg	0.87	--	--	1
Toluene	ND	ug/kg	1.3	--	--	1
Ethylbenzene	ND	ug/kg	0.87	--	--	1
Chloromethane	ND	ug/kg	3.5	--	--	1
Bromomethane	ND	ug/kg	1.7	--	--	1
Vinyl chloride	ND	ug/kg	1.7	--	--	1
Chloroethane	ND	ug/kg	1.7	--	--	1
1,1-Dichloroethene	ND	ug/kg	0.87	--	--	1
trans-1,2-Dichloroethene	ND	ug/kg	1.3	--	--	1
Trichloroethene	ND	ug/kg	0.87	--	--	1
1,2-Dichlorobenzene	ND	ug/kg	3.5	--	--	1



**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1705147  
**Report Date:** 02/23/17

**SAMPLE RESULTS**

Lab ID:	L1705147-06	Date Collected:	02/17/17 09:35			
Client ID:	VES-112 (1-2)	Date Received:	02/17/17			
Sample Location:	E. BOSTON	Field Prep:	Not Specified			
Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics by 8260/5035 - Westborough Lab</b>						
1,3-Dichlorobenzene	ND	ug/kg	3.5	--	1	
1,4-Dichlorobenzene	ND	ug/kg	3.5	--	1	
Methyl tert butyl ether	ND	ug/kg	1.7	--	1	
p/m-Xylene	ND	ug/kg	1.7	--	1	
o-Xylene	ND	ug/kg	1.7	--	1	
Xylenes, Total	ND	ug/kg	1.7	--	1	
cis-1,2-Dichloroethene	ND	ug/kg	0.87	--	1	
1,2-Dichloroethene, Total	ND	ug/kg	0.87	--	1	
Dibromomethane	ND	ug/kg	3.5	--	1	
1,2,3-Trichloropropane	ND	ug/kg	3.5	--	1	
Styrene	ND	ug/kg	1.7	--	1	
Dichlorodifluoromethane	ND	ug/kg	8.7	--	1	
Acetone	ND	ug/kg	31	--	1	
Carbon disulfide	ND	ug/kg	3.5	--	1	
Methyl ethyl ketone	ND	ug/kg	8.7	--	1	
Methyl isobutyl ketone	ND	ug/kg	8.7	--	1	
2-Hexanone	ND	ug/kg	8.7	--	1	
Bromochloromethane	ND	ug/kg	3.5	--	1	
Tetrahydrofuran	ND	ug/kg	3.5	--	1	
2,2-Dichloropropane	ND	ug/kg	4.4	--	1	
1,2-Dibromoethane	ND	ug/kg	3.5	--	1	
1,3-Dichloropropane	ND	ug/kg	3.5	--	1	
1,1,1,2-Tetrachloroethane	ND	ug/kg	0.87	--	1	
Bromobenzene	ND	ug/kg	4.4	--	1	
n-Butylbenzene	ND	ug/kg	0.87	--	1	
sec-Butylbenzene	ND	ug/kg	0.87	--	1	
tert-Butylbenzene	ND	ug/kg	3.5	--	1	
o-Chlorotoluene	ND	ug/kg	3.5	--	1	
p-Chlorotoluene	ND	ug/kg	3.5	--	1	
1,2-Dibromo-3-chloropropane	ND	ug/kg	3.5	--	1	
Hexachlorobutadiene	ND	ug/kg	3.5	--	1	
Isopropylbenzene	ND	ug/kg	0.87	--	1	
p-Isopropyltoluene	ND	ug/kg	0.87	--	1	
Naphthalene	ND	ug/kg	3.5	--	1	
n-Propylbenzene	ND	ug/kg	0.87	--	1	
1,2,3-Trichlorobenzene	ND	ug/kg	3.5	--	1	
1,2,4-Trichlorobenzene	ND	ug/kg	3.5	--	1	
1,3,5-Trimethylbenzene	ND	ug/kg	3.5	--	1	
1,2,4-Trimethylbenzene	ND	ug/kg	3.5	--	1	



Project Name: E. BOSTON

Lab Number: L1705147

Project Number: 43068

Report Date: 02/23/17

**SAMPLE RESULTS**

Lab ID: L1705147-06  
 Client ID: VES-112 (1-2)  
 Sample Location: E. BOSTON

Date Collected: 02/17/17 09:35  
 Date Received: 02/17/17  
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics by 8260/5035 - Westborough Lab						
Diethyl ether	ND	ug/kg	4.4	--	--	1
Diisopropyl Ether	ND	ug/kg	3.5	--	--	1
Ethyl-Tert-Butyl-Ether	ND	ug/kg	3.5	--	--	1
Tertiary-Amyl Methyl Ether	ND	ug/kg	3.5	--	--	1
1,4-Dioxane	ND	ug/kg	35	--	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	92		70-130
Toluene-d8	106		70-130
4-Bromofluorobenzene	118		70-130
Dibromofluoromethane	94		70-130

**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1705147  
**Report Date:** 02/23/17

### Method Blank Analysis Batch Quality Control

Analytical Method: 97,8260C  
Analytical Date: 02/20/17 09:19  
Analyst: BN

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics by 8260/5035 - Westborough Lab for sample(s):	03,06			Batch:	WG979472-5
Methylene chloride	ND		ug/kg	10	--
1,1-Dichloroethane	ND		ug/kg	1.5	--
Chloroform	ND		ug/kg	1.5	--
Carbon tetrachloride	ND		ug/kg	1.0	--
1,2-Dichloropropane	ND		ug/kg	3.5	--
Dibromochloromethane	ND		ug/kg	1.0	--
1,1,2-Trichloroethane	ND		ug/kg	1.5	--
Tetrachloroethene	ND		ug/kg	1.0	--
Chlorobenzene	ND		ug/kg	1.0	--
Trichlorofluoromethane	ND		ug/kg	4.0	--
1,2-Dichloroethane	ND		ug/kg	1.0	--
1,1,1-Trichloroethane	ND		ug/kg	1.0	--
Bromodichloromethane	ND		ug/kg	1.0	--
trans-1,3-Dichloropropene	ND		ug/kg	1.0	--
cis-1,3-Dichloropropene	ND		ug/kg	1.0	--
1,3-Dichloropropene, Total	ND		ug/kg	1.0	--
1,1-Dichloropropene	ND		ug/kg	4.0	--
Bromoform	ND		ug/kg	4.0	--
1,1,2,2-Tetrachloroethane	ND		ug/kg	1.0	--
Benzene	ND		ug/kg	1.0	--
Toluene	ND		ug/kg	1.5	--
Ethylbenzene	ND		ug/kg	1.0	--
Chloromethane	ND		ug/kg	4.0	--
Bromomethane	ND		ug/kg	2.0	--
Vinyl chloride	ND		ug/kg	2.0	--
Chloroethane	ND		ug/kg	2.0	--
1,1-Dichloroethene	ND		ug/kg	1.0	--
trans-1,2-Dichloroethene	ND		ug/kg	1.5	--
Trichloroethene	ND		ug/kg	1.0	--



**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1705147  
**Report Date:** 02/23/17

### Method Blank Analysis Batch Quality Control

Analytical Method: 97,8260C  
Analytical Date: 02/20/17 09:19  
Analyst: BN

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics by 8260/5035 - Westborough Lab for sample(s):	03,06			Batch:	WG979472-5
1,2-Dichlorobenzene	ND		ug/kg	4.0	--
1,3-Dichlorobenzene	ND		ug/kg	4.0	--
1,4-Dichlorobenzene	ND		ug/kg	4.0	--
Methyl tert butyl ether	ND		ug/kg	2.0	--
p/m-Xylene	ND		ug/kg	2.0	--
o-Xylene	ND		ug/kg	2.0	--
Xylenes, Total	ND		ug/kg	2.0	--
cis-1,2-Dichloroethene	ND		ug/kg	1.0	--
1,2-Dichloroethene, Total	ND		ug/kg	1.0	--
Dibromomethane	ND		ug/kg	4.0	--
1,2,3-Trichloropropane	ND		ug/kg	4.0	--
Styrene	ND		ug/kg	2.0	--
Dichlorodifluoromethane	ND		ug/kg	10	--
Acetone	ND		ug/kg	36	--
Carbon disulfide	ND		ug/kg	4.0	--
Methyl ethyl ketone	ND		ug/kg	10	--
Methyl isobutyl ketone	ND		ug/kg	10	--
2-Hexanone	ND		ug/kg	10	--
Bromochloromethane	ND		ug/kg	4.0	--
Tetrahydrofuran	ND		ug/kg	4.0	--
2,2-Dichloropropane	ND		ug/kg	5.0	--
1,2-Dibromoethane	ND		ug/kg	4.0	--
1,3-Dichloropropane	ND		ug/kg	4.0	--
1,1,1,2-Tetrachloroethane	ND		ug/kg	1.0	--
Bromobenzene	ND		ug/kg	5.0	--
n-Butylbenzene	ND		ug/kg	1.0	--
sec-Butylbenzene	ND		ug/kg	1.0	--
tert-Butylbenzene	ND		ug/kg	4.0	--
o-Chlorotoluene	ND		ug/kg	4.0	--



**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1705147  
**Report Date:** 02/23/17

### Method Blank Analysis Batch Quality Control

Analytical Method: 97,8260C  
Analytical Date: 02/20/17 09:19  
Analyst: BN

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics by 8260/5035 - Westborough Lab for sample(s):	03,06			Batch:	WG979472-5
p-Chlorotoluene	ND		ug/kg	4.0	--
1,2-Dibromo-3-chloropropane	ND		ug/kg	4.0	--
Hexachlorobutadiene	ND		ug/kg	4.0	--
Isopropylbenzene	ND		ug/kg	1.0	--
p-Isopropyltoluene	ND		ug/kg	1.0	--
Naphthalene	ND		ug/kg	4.0	--
n-Propylbenzene	ND		ug/kg	1.0	--
1,2,3-Trichlorobenzene	ND		ug/kg	4.0	--
1,2,4-Trichlorobenzene	ND		ug/kg	4.0	--
1,3,5-Trimethylbenzene	ND		ug/kg	4.0	--
1,2,4-Trimethylbenzene	ND		ug/kg	4.0	--
Diethyl ether	ND		ug/kg	5.0	--
Diisopropyl Ether	ND		ug/kg	4.0	--
Ethyl-Tert-Butyl-Ether	ND		ug/kg	4.0	--
Tertiary-Amyl Methyl Ether	ND		ug/kg	4.0	--
1,4-Dioxane	ND		ug/kg	40	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	88		70-130
Toluene-d8	100		70-130
4-Bromofluorobenzene	95		70-130
Dibromofluoromethane	91		70-130



**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1705147  
**Report Date:** 02/23/17

### Method Blank Analysis Batch Quality Control

Analytical Method: 97,8260C  
Analytical Date: 02/21/17 10:00  
Analyst: JC

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics by 8260/5035 - Westborough Lab for sample(s):	02,04			Batch: WG979787-5	
Methylene chloride	ND		ug/kg	10	--
1,1-Dichloroethane	ND		ug/kg	1.5	--
Chloroform	ND		ug/kg	1.5	--
Carbon tetrachloride	ND		ug/kg	1.0	--
1,2-Dichloropropane	ND		ug/kg	3.5	--
Dibromochloromethane	ND		ug/kg	1.0	--
1,1,2-Trichloroethane	ND		ug/kg	1.5	--
Tetrachloroethene	ND		ug/kg	1.0	--
Chlorobenzene	ND		ug/kg	1.0	--
Trichlorofluoromethane	ND		ug/kg	4.0	--
1,2-Dichloroethane	ND		ug/kg	1.0	--
1,1,1-Trichloroethane	ND		ug/kg	1.0	--
Bromodichloromethane	ND		ug/kg	1.0	--
trans-1,3-Dichloropropene	ND		ug/kg	1.0	--
cis-1,3-Dichloropropene	ND		ug/kg	1.0	--
1,3-Dichloropropene, Total	ND		ug/kg	1.0	--
1,1-Dichloropropene	ND		ug/kg	4.0	--
Bromoform	ND		ug/kg	4.0	--
1,1,2,2-Tetrachloroethane	ND		ug/kg	1.0	--
Benzene	ND		ug/kg	1.0	--
Toluene	ND		ug/kg	1.5	--
Ethylbenzene	ND		ug/kg	1.0	--
Chloromethane	ND		ug/kg	4.0	--
Bromomethane	ND		ug/kg	2.0	--
Vinyl chloride	ND		ug/kg	2.0	--
Chloroethane	ND		ug/kg	2.0	--
1,1-Dichloroethene	ND		ug/kg	1.0	--
trans-1,2-Dichloroethene	ND		ug/kg	1.5	--
Trichloroethene	ND		ug/kg	1.0	--



**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1705147  
**Report Date:** 02/23/17

### Method Blank Analysis Batch Quality Control

Analytical Method: 97,8260C  
Analytical Date: 02/21/17 10:00  
Analyst: JC

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics by 8260/5035 - Westborough Lab for sample(s):	02,04			Batch:	WG979787-5
1,2-Dichlorobenzene	ND		ug/kg	4.0	--
1,3-Dichlorobenzene	ND		ug/kg	4.0	--
1,4-Dichlorobenzene	ND		ug/kg	4.0	--
Methyl tert butyl ether	ND		ug/kg	2.0	--
p/m-Xylene	ND		ug/kg	2.0	--
o-Xylene	ND		ug/kg	2.0	--
Xylenes, Total	ND		ug/kg	2.0	--
cis-1,2-Dichloroethene	ND		ug/kg	1.0	--
1,2-Dichloroethene, Total	ND		ug/kg	1.0	--
Dibromomethane	ND		ug/kg	4.0	--
1,4-Dichlorobutane	ND		ug/kg	10	--
1,2,3-Trichloropropane	ND		ug/kg	4.0	--
Styrene	ND		ug/kg	2.0	--
Dichlorodifluoromethane	ND		ug/kg	10	--
Acetone	ND		ug/kg	36	--
Carbon disulfide	ND		ug/kg	4.0	--
Methyl ethyl ketone	ND		ug/kg	10	--
Methyl isobutyl ketone	ND		ug/kg	10	--
2-Hexanone	ND		ug/kg	10	--
Ethyl methacrylate	ND		ug/kg	10	--
Acrylonitrile	ND		ug/kg	4.0	--
Bromochloromethane	ND		ug/kg	4.0	--
Tetrahydrofuran	ND		ug/kg	4.0	--
2,2-Dichloropropane	ND		ug/kg	5.0	--
1,2-Dibromoethane	ND		ug/kg	4.0	--
1,3-Dichloropropane	ND		ug/kg	4.0	--
1,1,1,2-Tetrachloroethane	ND		ug/kg	1.0	--
Bromobenzene	ND		ug/kg	5.0	--
n-Butylbenzene	ND		ug/kg	1.0	--



**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1705147  
**Report Date:** 02/23/17

### Method Blank Analysis Batch Quality Control

Analytical Method: 97,8260C  
Analytical Date: 02/21/17 10:00  
Analyst: JC

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics by 8260/5035 - Westborough Lab for sample(s):	02,04			Batch: WG979787-5	
sec-Butylbenzene	ND		ug/kg	1.0	--
tert-Butylbenzene	ND		ug/kg	4.0	--
o-Chlorotoluene	ND		ug/kg	4.0	--
p-Chlorotoluene	ND		ug/kg	4.0	--
1,2-Dibromo-3-chloropropane	ND		ug/kg	4.0	--
Hexachlorobutadiene	ND		ug/kg	4.0	--
Isopropylbenzene	ND		ug/kg	1.0	--
p-Isopropyltoluene	ND		ug/kg	1.0	--
Naphthalene	ND		ug/kg	4.0	--
n-Propylbenzene	ND		ug/kg	1.0	--
1,2,3-Trichlorobenzene	ND		ug/kg	4.0	--
1,2,4-Trichlorobenzene	ND		ug/kg	4.0	--
1,3,5-Trimethylbenzene	ND		ug/kg	4.0	--
1,2,4-Trimethylbenzene	ND		ug/kg	4.0	--
trans-1,4-Dichloro-2-butene	ND		ug/kg	5.0	--
Diethyl ether	ND		ug/kg	5.0	--
Diisopropyl Ether	ND		ug/kg	4.0	--
Ethyl-Tert-Butyl-Ether	ND		ug/kg	4.0	--
Tertiary-Amyl Methyl Ether	ND		ug/kg	4.0	--
1,4-Dioxane	ND		ug/kg	40	--
2-Chloroethylvinyl ether	ND		ug/kg	20	--
Halothane	ND		ug/kg	40	--
Ethyl Acetate	ND		ug/kg	20	--
Freon-113	ND		ug/kg	20	--
Vinyl acetate	ND		ug/kg	10	--

**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1705147  
**Report Date:** 02/23/17

**Method Blank Analysis**  
**Batch Quality Control**

Analytical Method: 97,8260C  
Analytical Date: 02/21/17 10:00  
Analyst: JC

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics by 8260/5035 - Westborough Lab for sample(s): 02,04 Batch: WG979787-5					

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	94		70-130
Toluene-d8	96		70-130
4-Bromofluorobenzene	102		70-130
Dibromofluoromethane	98		70-130

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1705147  
**Report Date:** 02/23/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics by 8260/5035 - Westborough Lab Associated sample(s): 03,06 Batch: WG979472-3 WG979472-4								
Methylene chloride	106		100		70-130	6		20
1,1-Dichloroethane	91		86		70-130	6		20
Chloroform	89		86		70-130	3		20
Carbon tetrachloride	92		85		70-130	8		20
1,2-Dichloropropane	89		88		70-130	1		20
Dibromochloromethane	77		78		70-130	1		20
1,1,2-Trichloroethane	81		80		70-130	1		20
Tetrachloroethene	91		86		70-130	6		20
Chlorobenzene	89		86		70-130	3		20
Trichlorofluoromethane	110		99		70-130	11		20
1,2-Dichloroethane	84		83		70-130	1		20
1,1,1-Trichloroethane	91		85		70-130	7		20
Bromodichloromethane	85		84		70-130	1		20
trans-1,3-Dichloropropene	80		78		70-130	3		20
cis-1,3-Dichloropropene	84		83		70-130	1		20
1,1-Dichloropropene	92		86		70-130	7		20
Bromoform	70		70		70-130	0		20
1,1,2,2-Tetrachloroethane	74		73		70-130	1		20
Benzene	92		88		70-130	4		20
Toluene	88		85		70-130	3		20
Ethylbenzene	89		86		70-130	3		20

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1705147  
**Report Date:** 02/23/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics by 8260/5035 - Westborough Lab Associated sample(s): 03,06 Batch: WG979472-3 WG979472-4								
Chloromethane	92		88		70-130	4		20
Bromomethane	115		108		70-130	6		20
Vinyl chloride	107		97		70-130	10		20
Chloroethane	105		96		70-130	9		20
1,1-Dichloroethene	93		85		70-130	9		20
trans-1,2-Dichloroethene	94		87		70-130	8		20
Trichloroethene	90		86		70-130	5		20
1,2-Dichlorobenzene	85		82		70-130	4		20
1,3-Dichlorobenzene	87		84		70-130	4		20
1,4-Dichlorobenzene	87		84		70-130	4		20
Methyl tert butyl ether	81		78		70-130	4		20
p/m-Xylene	90		86		70-130	5		20
o-Xylene	89		86		70-130	3		20
cis-1,2-Dichloroethene	90		88		70-130	2		20
Dibromomethane	82		82		70-130	0		20
1,2,3-Trichloropropane	75		71		70-130	5		20
Styrene	88		85		70-130	3		20
Dichlorodifluoromethane	87		81		70-130	7		20
Acetone	90		82		70-130	9		20
Carbon disulfide	89		86		70-130	3		20
Methyl ethyl ketone	73		72		70-130	1		20

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1705147  
**Report Date:** 02/23/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics by 8260/5035 - Westborough Lab Associated sample(s): 03,06 Batch: WG979472-3 WG979472-4								
Methyl isobutyl ketone	67	Q	67	Q	70-130	0		20
2-Hexanone	70		71		70-130	1		20
Bromochloromethane	89		84		70-130	6		20
Tetrahydrofuran	70		70		70-130	0		20
2,2-Dichloropropane	89		84		70-130	6		20
1,2-Dibromoethane	78		77		70-130	1		20
1,3-Dichloropropane	81		79		70-130	3		20
1,1,1,2-Tetrachloroethane	85		84		70-130	1		20
Bromobenzene	86		83		70-130	4		20
n-Butylbenzene	90		85		70-130	6		20
sec-Butylbenzene	89		84		70-130	6		20
tert-Butylbenzene	88		83		70-130	6		20
o-Chlorotoluene	85		82		70-130	4		20
p-Chlorotoluene	86		83		70-130	4		20
1,2-Dibromo-3-chloropropane	67	Q	66	Q	70-130	2		20
Hexachlorobutadiene	89		85		70-130	5		20
Isopropylbenzene	88		83		70-130	6		20
p-Isopropyltoluene	89		84		70-130	6		20
Naphthalene	73		74		70-130	1		20
n-Propylbenzene	88		84		70-130	5		20
1,2,3-Trichlorobenzene	83		82		70-130	1		20

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1705147  
**Report Date:** 02/23/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics by 8260/5035 - Westborough Lab Associated sample(s): 03,06 Batch: WG979472-3 WG979472-4								
1,2,4-Trichlorobenzene	85		84		70-130	1		20
1,3,5-Trimethylbenzene	87		83		70-130	5		20
1,2,4-Trimethylbenzene	87		83		70-130	5		20
Diethyl ether	82		80		70-130	2		20
Diisopropyl Ether	86		83		70-130	4		20
Ethyl-Tert-Butyl-Ether	83		82		70-130	1		20
Tertiary-Amyl Methyl Ether	81		81		70-130	0		20
1,4-Dioxane	72		72		70-130	0		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	88		89		70-130
Toluene-d8	98		99		70-130
4-Bromofluorobenzene	94		94		70-130
Dibromofluoromethane	96		97		70-130

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1705147  
**Report Date:** 02/23/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics by 8260/5035 - Westborough Lab Associated sample(s): 02,04 Batch: WG979787-3 WG979787-4								
Methylene chloride	117		129		70-130	10		20
1,1-Dichloroethane	109		112		70-130	3		20
Chloroform	104		105		70-130	1		20
Carbon tetrachloride	110		112		70-130	2		20
1,2-Dichloropropane	104		107		70-130	3		20
Dibromochloromethane	88		90		70-130	2		20
1,1,2-Trichloroethane	88		92		70-130	4		20
Tetrachloroethene	106		106		70-130	0		20
Chlorobenzene	97		97		70-130	0		20
Trichlorofluoromethane	115		116		70-130	1		20
1,2-Dichloroethane	96		100		70-130	4		20
1,1,1-Trichloroethane	112		115		70-130	3		20
Bromodichloromethane	100		102		70-130	2		20
trans-1,3-Dichloropropene	88		91		70-130	3		20
cis-1,3-Dichloropropene	97		101		70-130	4		20
1,1-Dichloropropene	115		118		70-130	3		20
Bromoform	81		84		70-130	4		20
1,1,2,2-Tetrachloroethane	84		85		70-130	1		20
Benzene	107		110		70-130	3		20
Toluene	99		100		70-130	1		20
Ethylbenzene	100		101		70-130	1		20

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1705147  
**Report Date:** 02/23/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics by 8260/5035 - Westborough Lab Associated sample(s): 02,04 Batch: WG979787-3 WG979787-4								
Chloromethane	111		112		70-130	1		20
Bromomethane	64	Q	71		70-130	10		20
Vinyl chloride	103		106		70-130	3		20
Chloroethane	110		113		70-130	3		20
1,1-Dichloroethene	114		117		70-130	3		20
trans-1,2-Dichloroethene	111		113		70-130	2		20
Trichloroethene	110		112		70-130	2		20
1,2-Dichlorobenzene	92		92		70-130	0		20
1,3-Dichlorobenzene	96		96		70-130	0		20
1,4-Dichlorobenzene	95		93		70-130	2		20
Methyl tert butyl ether	92		95		70-130	3		20
p/m-Xylene	101		102		70-130	1		20
o-Xylene	98		99		70-130	1		20
cis-1,2-Dichloroethene	105		107		70-130	2		20
Dibromomethane	94		97		70-130	3		20
1,4-Dichlorobutane	86		88		70-130	2		20
1,2,3-Trichloropropane	84		86		70-130	2		20
Styrene	96		98		70-130	2		20
Dichlorodifluoromethane	95		96		70-130	1		20
Acetone	100		103		70-130	3		20
Carbon disulfide	110		114		70-130	4		20

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1705147  
**Report Date:** 02/23/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics by 8260/5035 - Westborough Lab Associated sample(s): 02,04 Batch: WG979787-3 WG979787-4								
Methyl ethyl ketone	85		89		70-130	5		20
Methyl isobutyl ketone	75		78		70-130	4		20
2-Hexanone	78		81		70-130	4		20
Ethyl methacrylate	76		78		70-130	3		20
Acrylonitrile	90		98		70-130	9		20
Bromochloromethane	98		103		70-130	5		20
Tetrahydrofuran	89		97		70-130	9		20
2,2-Dichloropropane	107		110		70-130	3		20
1,2-Dibromoethane	86		89		70-130	3		20
1,3-Dichloropropane	90		92		70-130	2		20
1,1,1,2-Tetrachloroethane	92		94		70-130	2		20
Bromobenzene	93		93		70-130	0		20
n-Butylbenzene	108		106		70-130	2		20
sec-Butylbenzene	105		104		70-130	1		20
tert-Butylbenzene	102		102		70-130	0		20
o-Chlorotoluene	100		99		70-130	1		20
p-Chlorotoluene	100		98		70-130	2		20
1,2-Dibromo-3-chloropropane	70		74		70-130	6		20
Hexachlorobutadiene	104		102		70-130	2		20
Isopropylbenzene	102		101		70-130	1		20
p-Isopropyltoluene	104		104		70-130	0		20

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1705147  
**Report Date:** 02/23/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics by 8260/5035 - Westborough Lab Associated sample(s): 02,04 Batch: WG979787-3 WG979787-4								
Naphthalene	85		87		70-130	2		20
n-Propylbenzene	103		102		70-130	1		20
1,2,3-Trichlorobenzene	91		91		70-130	0		20
1,2,4-Trichlorobenzene	95		94		70-130	1		20
1,3,5-Trimethylbenzene	102		100		70-130	2		20
1,2,4-Trimethylbenzene	100		99		70-130	1		20
trans-1,4-Dichloro-2-butene	79		82		70-130	4		20
Diethyl ether	96		101		70-130	5		20
Diisopropyl Ether	104		107		70-130	3		20
Ethyl-Tert-Butyl-Ether	97		99		70-130	2		20
Tertiary-Amyl Methyl Ether	91		95		70-130	4		20
1,4-Dioxane	74		80		70-130	8		20
2-Chloroethylvinyl ether	44	Q	49	Q	70-130	11		20
Halothane	111		113		70-130	2		20
Ethyl Acetate	89		97		70-130	9		20
Freon-113	116		121		70-130	4		20
Vinyl acetate	82		88		70-130	7		20

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1705147  
**Report Date:** 02/23/17

<b>Parameter</b>	<i>LCS</i> <i>%Recovery</i>	<i>Qual</i>	<i>LCSD</i> <i>%Recovery</i>	<i>Qual</i>	<i>%Recovery</i> <i>Limits</i>	<i>RPD</i>	<i>Qual</i>	<i>RPD</i> <i>Limits</i>
MCP Volatile Organics by 8260/5035 - Westborough Lab Associated sample(s): 02,04 Batch: WG979787-3 WG979787-4								
<b>Surrogate</b>	<i>LCS</i> <i>%Recovery</i>	<i>Qual</i>	<i>LCSD</i> <i>%Recovery</i>	<i>Qual</i>	<i>Acceptance</i> <i>Criteria</i>			
1,2-Dichloroethane-d4	90		93		70-130			
Toluene-d8	98		97		70-130			
4-Bromofluorobenzene	101		100		70-130			
Dibromofluoromethane	100		101		70-130			

# **SEMIVOLATILES**



**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1705147  
**Report Date:** 02/23/17

**SAMPLE RESULTS**

Lab ID: L1705147-02  
Client ID: VES-124 (3-5)  
Sample Location: E. BOSTON  
Matrix: Soil  
Analytical Method: 97,8270D  
Analytical Date: 02/18/17 22:20  
Analyst: KV  
Percent Solids: 84%

Date Collected: 02/17/17 10:35  
Date Received: 02/17/17  
Field Prep: Not Specified  
Extraction Method: EPA 3546  
Extraction Date: 02/18/17 01:14

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Semivolatile Organics - Westborough Lab</b>						
Acenaphthene	ND	ug/kg	160	--	--	1
1,2,4-Trichlorobenzene	ND	ug/kg	200	--	--	1
Hexachlorobenzene	ND	ug/kg	120	--	--	1
Bis(2-chloroethyl)ether	ND	ug/kg	180	--	--	1
2-Chloronaphthalene	ND	ug/kg	200	--	--	1
1,2-Dichlorobenzene	ND	ug/kg	200	--	--	1
1,3-Dichlorobenzene	ND	ug/kg	200	--	--	1
1,4-Dichlorobenzene	ND	ug/kg	200	--	--	1
3,3'-Dichlorobenzidine	ND	ug/kg	200	--	--	1
2,4-Dinitrotoluene	ND	ug/kg	200	--	--	1
2,6-Dinitrotoluene	ND	ug/kg	200	--	--	1
Azobenzene	ND	ug/kg	200	--	--	1
Fluoranthene	3900	ug/kg	120	--	--	1
4-Bromophenyl phenyl ether	ND	ug/kg	200	--	--	1
Bis(2-chloroisopropyl)ether	ND	ug/kg	240	--	--	1
Bis(2-chloroethoxy)methane	ND	ug/kg	210	--	--	1
Hexachlorobutadiene	ND	ug/kg	200	--	--	1
Hexachloroethane	ND	ug/kg	160	--	--	1
Isophorone	ND	ug/kg	180	--	--	1
Naphthalene	ND	ug/kg	200	--	--	1
Nitrobenzene	ND	ug/kg	180	--	--	1
Bis(2-ethylhexyl)phthalate	ND	ug/kg	200	--	--	1
Butyl benzyl phthalate	ND	ug/kg	200	--	--	1
Di-n-butylphthalate	ND	ug/kg	200	--	--	1
Di-n-octylphthalate	ND	ug/kg	200	--	--	1
Diethyl phthalate	ND	ug/kg	200	--	--	1
Dimethyl phthalate	ND	ug/kg	200	--	--	1
Benzo(a)anthracene	2100	ug/kg	120	--	--	1
Benzo(a)pyrene	1900	ug/kg	160	--	--	1
Benzo(b)fluoranthene	2400	ug/kg	120	--	--	1



Project Name: E. BOSTON

Lab Number: L1705147

Project Number: 43068

Report Date: 02/23/17

**SAMPLE RESULTS**

Lab ID:	L1705147-02	Date Collected:	02/17/17 10:35
Client ID:	VES-124 (3-5)	Date Received:	02/17/17
Sample Location:	E. BOSTON	Field Prep:	Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Semivolatile Organics - Westborough Lab</b>						
Benzo(k)fluoranthene	800	ug/kg	120	--	--	1
Chrysene	1900	ug/kg	120	--	--	1
Acenaphthylene	ND	ug/kg	160	--	--	1
Anthracene	560	ug/kg	120	--	--	1
Benzo(ghi)perylene	990	ug/kg	160	--	--	1
Fluorene	ND	ug/kg	200	--	--	1
Phenanthrene	1900	ug/kg	120	--	--	1
Dibenzo(a,h)anthracene	290	ug/kg	120	--	--	1
Indeno(1,2,3-cd)pyrene	1200	ug/kg	160	--	--	1
Pyrene	3400	ug/kg	120	--	--	1
Aniline	ND	ug/kg	240	--	--	1
4-Chloroaniline	ND	ug/kg	200	--	--	1
Dibenzofuran	ND	ug/kg	200	--	--	1
2-Methylnaphthalene	ND	ug/kg	240	--	--	1
Acetophenone	ND	ug/kg	200	--	--	1
2,4,6-Trichlorophenol	ND	ug/kg	120	--	--	1
2-Chlorophenol	ND	ug/kg	200	--	--	1
2,4-Dichlorophenol	ND	ug/kg	180	--	--	1
2,4-Dimethylphenol	ND	ug/kg	200	--	--	1
2-Nitrophenol	ND	ug/kg	420	--	--	1
4-Nitrophenol	ND	ug/kg	280	--	--	1
2,4-Dinitrophenol	ND	ug/kg	940	--	--	1
Pentachlorophenol	ND	ug/kg	390	--	--	1
Phenol	ND	ug/kg	200	--	--	1
2-Methylphenol	ND	ug/kg	200	--	--	1
3-Methylphenol/4-Methylphenol	ND	ug/kg	280	--	--	1
2,4,5-Trichlorophenol	ND	ug/kg	200	--	--	1
Pyridine	ND	ug/kg	210	--	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	71		30-130
Phenol-d6	77		30-130
Nitrobenzene-d5	95		30-130
2-Fluorobiphenyl	85		30-130
2,4,6-Tribromophenol	90		30-130
4-Terphenyl-d14	86		30-130

**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1705147  
**Report Date:** 02/23/17

**SAMPLE RESULTS**

Lab ID: L1705147-03  
Client ID: VES-124 (18-20)  
Sample Location: E. BOSTON  
Matrix: Soil  
Analytical Method: 97,8270D  
Analytical Date: 02/18/17 22:46  
Analyst: KV  
Percent Solids: 78%

Date Collected: 02/17/17 10:40  
Date Received: 02/17/17  
Field Prep: Not Specified  
Extraction Method: EPA 3546  
Extraction Date: 02/18/17 01:14

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Semivolatile Organics - Westborough Lab</b>						
Acenaphthene	ND	ug/kg	170	--	--	1
1,2,4-Trichlorobenzene	ND	ug/kg	210	--	--	1
Hexachlorobenzene	ND	ug/kg	130	--	--	1
Bis(2-chloroethyl)ether	ND	ug/kg	190	--	--	1
2-Chloronaphthalene	ND	ug/kg	210	--	--	1
1,2-Dichlorobenzene	ND	ug/kg	210	--	--	1
1,3-Dichlorobenzene	ND	ug/kg	210	--	--	1
1,4-Dichlorobenzene	ND	ug/kg	210	--	--	1
3,3'-Dichlorobenzidine	ND	ug/kg	210	--	--	1
2,4-Dinitrotoluene	ND	ug/kg	210	--	--	1
2,6-Dinitrotoluene	ND	ug/kg	210	--	--	1
Azobenzene	ND	ug/kg	210	--	--	1
Fluoranthene	ND	ug/kg	130	--	--	1
4-Bromophenyl phenyl ether	ND	ug/kg	210	--	--	1
Bis(2-chloroisopropyl)ether	ND	ug/kg	250	--	--	1
Bis(2-chloroethoxy)methane	ND	ug/kg	230	--	--	1
Hexachlorobutadiene	ND	ug/kg	210	--	--	1
Hexachloroethane	ND	ug/kg	170	--	--	1
Isophorone	ND	ug/kg	190	--	--	1
Naphthalene	ND	ug/kg	210	--	--	1
Nitrobenzene	ND	ug/kg	190	--	--	1
Bis(2-ethylhexyl)phthalate	ND	ug/kg	210	--	--	1
Butyl benzyl phthalate	ND	ug/kg	210	--	--	1
Di-n-butylphthalate	ND	ug/kg	210	--	--	1
Di-n-octylphthalate	ND	ug/kg	210	--	--	1
Diethyl phthalate	ND	ug/kg	210	--	--	1
Dimethyl phthalate	ND	ug/kg	210	--	--	1
Benzo(a)anthracene	ND	ug/kg	130	--	--	1
Benzo(a)pyrene	ND	ug/kg	170	--	--	1
Benzo(b)fluoranthene	ND	ug/kg	130	--	--	1



Project Name: E. BOSTON

Lab Number: L1705147

Project Number: 43068

Report Date: 02/23/17

**SAMPLE RESULTS**

Lab ID: L1705147-03 Date Collected: 02/17/17 10:40  
 Client ID: VES-124 (18-20) Date Received: 02/17/17  
 Sample Location: E. BOSTON Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Semivolatile Organics - Westborough Lab</b>						
Benzo(k)fluoranthene	ND	ug/kg	130	--	--	1
Chrysene	ND	ug/kg	130	--	--	1
Acenaphthylene	ND	ug/kg	170	--	--	1
Anthracene	ND	ug/kg	130	--	--	1
Benzo(ghi)perylene	ND	ug/kg	170	--	--	1
Fluorene	ND	ug/kg	210	--	--	1
Phenanthrene	ND	ug/kg	130	--	--	1
Dibenzo(a,h)anthracene	ND	ug/kg	130	--	--	1
Indeno(1,2,3-cd)pyrene	ND	ug/kg	170	--	--	1
Pyrene	ND	ug/kg	130	--	--	1
Aniline	ND	ug/kg	250	--	--	1
4-Chloroaniline	ND	ug/kg	210	--	--	1
Dibenzofuran	ND	ug/kg	210	--	--	1
2-Methylnaphthalene	ND	ug/kg	250	--	--	1
Acetophenone	ND	ug/kg	210	--	--	1
2,4,6-Trichlorophenol	ND	ug/kg	130	--	--	1
2-Chlorophenol	ND	ug/kg	210	--	--	1
2,4-Dichlorophenol	ND	ug/kg	190	--	--	1
2,4-Dimethylphenol	ND	ug/kg	210	--	--	1
2-Nitrophenol	ND	ug/kg	460	--	--	1
4-Nitrophenol	ND	ug/kg	300	--	--	1
2,4-Dinitrophenol	ND	ug/kg	1000	--	--	1
Pentachlorophenol	ND	ug/kg	420	--	--	1
Phenol	ND	ug/kg	210	--	--	1
2-Methylphenol	ND	ug/kg	210	--	--	1
3-Methylphenol/4-Methylphenol	ND	ug/kg	300	--	--	1
2,4,5-Trichlorophenol	ND	ug/kg	210	--	--	1
Pyridine	ND	ug/kg	230	--	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	86		30-130
Phenol-d6	94		30-130
Nitrobenzene-d5	100		30-130
2-Fluorobiphenyl	87		30-130
2,4,6-Tribromophenol	103		30-130
4-Terphenyl-d14	92		30-130

**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1705147  
**Report Date:** 02/23/17

**SAMPLE RESULTS**

Lab ID: L1705147-04  
Client ID: VES-116 (2-4)  
Sample Location: E. BOSTON  
Matrix: Soil  
Analytical Method: 97,8270D  
Analytical Date: 02/18/17 23:13  
Analyst: KV  
Percent Solids: 93%

Date Collected: 02/17/17 09:45  
Date Received: 02/17/17  
Field Prep: Not Specified  
Extraction Method: EPA 3546  
Extraction Date: 02/18/17 01:14

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Semivolatile Organics - Westborough Lab</b>						
Acenaphthene	ND	ug/kg	140	--	--	1
1,2,4-Trichlorobenzene	ND	ug/kg	180	--	--	1
Hexachlorobenzene	ND	ug/kg	100	--	--	1
Bis(2-chloroethyl)ether	ND	ug/kg	160	--	--	1
2-Chloronaphthalene	ND	ug/kg	180	--	--	1
1,2-Dichlorobenzene	ND	ug/kg	180	--	--	1
1,3-Dichlorobenzene	ND	ug/kg	180	--	--	1
1,4-Dichlorobenzene	ND	ug/kg	180	--	--	1
3,3'-Dichlorobenzidine	ND	ug/kg	180	--	--	1
2,4-Dinitrotoluene	ND	ug/kg	180	--	--	1
2,6-Dinitrotoluene	ND	ug/kg	180	--	--	1
Azobenzene	ND	ug/kg	180	--	--	1
Fluoranthene	510	ug/kg	100	--	--	1
4-Bromophenyl phenyl ether	ND	ug/kg	180	--	--	1
Bis(2-chloroisopropyl)ether	ND	ug/kg	210	--	--	1
Bis(2-chloroethoxy)methane	ND	ug/kg	190	--	--	1
Hexachlorobutadiene	ND	ug/kg	180	--	--	1
Hexachloroethane	ND	ug/kg	140	--	--	1
Isophorone	ND	ug/kg	160	--	--	1
Naphthalene	ND	ug/kg	180	--	--	1
Nitrobenzene	ND	ug/kg	160	--	--	1
Bis(2-ethylhexyl)phthalate	ND	ug/kg	180	--	--	1
Butyl benzyl phthalate	ND	ug/kg	180	--	--	1
Di-n-butylphthalate	ND	ug/kg	180	--	--	1
Di-n-octylphthalate	ND	ug/kg	180	--	--	1
Diethyl phthalate	ND	ug/kg	180	--	--	1
Dimethyl phthalate	ND	ug/kg	180	--	--	1
Benzo(a)anthracene	260	ug/kg	100	--	--	1
Benzo(a)pyrene	260	ug/kg	140	--	--	1
Benzo(b)fluoranthene	300	ug/kg	100	--	--	1



Project Name: E. BOSTON

Lab Number: L1705147

Project Number: 43068

Report Date: 02/23/17

**SAMPLE RESULTS**

Lab ID:	L1705147-04	Date Collected:	02/17/17 09:45
Client ID:	VES-116 (2-4)	Date Received:	02/17/17
Sample Location:	E. BOSTON	Field Prep:	Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Semivolatile Organics - Westborough Lab</b>						
Benzo(k)fluoranthene	110	ug/kg	100	--	--	1
Chrysene	240	ug/kg	100	--	--	1
Acenaphthylene	ND	ug/kg	140	--	--	1
Anthracene	ND	ug/kg	100	--	--	1
Benzo(ghi)perylene	ND	ug/kg	140	--	--	1
Fluorene	ND	ug/kg	180	--	--	1
Phenanthrene	320	ug/kg	100	--	--	1
Dibenzo(a,h)anthracene	ND	ug/kg	100	--	--	1
Indeno(1,2,3-cd)pyrene	150	ug/kg	140	--	--	1
Pyrene	460	ug/kg	100	--	--	1
Aniline	ND	ug/kg	210	--	--	1
4-Chloroaniline	ND	ug/kg	180	--	--	1
Dibenzofuran	ND	ug/kg	180	--	--	1
2-Methylnaphthalene	ND	ug/kg	210	--	--	1
Acetophenone	ND	ug/kg	180	--	--	1
2,4,6-Trichlorophenol	ND	ug/kg	100	--	--	1
2-Chlorophenol	ND	ug/kg	180	--	--	1
2,4-Dichlorophenol	ND	ug/kg	160	--	--	1
2,4-Dimethylphenol	ND	ug/kg	180	--	--	1
2-Nitrophenol	ND	ug/kg	380	--	--	1
4-Nitrophenol	ND	ug/kg	250	--	--	1
2,4-Dinitrophenol	ND	ug/kg	850	--	--	1
Pentachlorophenol	ND	ug/kg	350	--	--	1
Phenol	ND	ug/kg	180	--	--	1
2-Methylphenol	ND	ug/kg	180	--	--	1
3-Methylphenol/4-Methylphenol	ND	ug/kg	250	--	--	1
2,4,5-Trichlorophenol	ND	ug/kg	180	--	--	1
Pyridine	ND	ug/kg	190	--	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	93		30-130
Phenol-d6	97		30-130
Nitrobenzene-d5	103		30-130
2-Fluorobiphenyl	90		30-130
2,4,6-Tribromophenol	98		30-130
4-Terphenyl-d14	93		30-130

**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1705147  
**Report Date:** 02/23/17

**SAMPLE RESULTS**

Lab ID: L1705147-06  
Client ID: VES-112 (1-2)  
Sample Location: E. BOSTON  
Matrix: Soil  
Analytical Method: 97,8270D  
Analytical Date: 02/18/17 23:39  
Analyst: KV  
Percent Solids: 94%

Date Collected: 02/17/17 09:35  
Date Received: 02/17/17  
Field Prep: Not Specified  
Extraction Method: EPA 3546  
Extraction Date: 02/18/17 01:14

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Semivolatile Organics - Westborough Lab</b>						
Acenaphthene	ND	ug/kg	140	--	--	1
1,2,4-Trichlorobenzene	ND	ug/kg	170	--	--	1
Hexachlorobenzene	ND	ug/kg	100	--	--	1
Bis(2-chloroethyl)ether	ND	ug/kg	160	--	--	1
2-Chloronaphthalene	ND	ug/kg	170	--	--	1
1,2-Dichlorobenzene	ND	ug/kg	170	--	--	1
1,3-Dichlorobenzene	ND	ug/kg	170	--	--	1
1,4-Dichlorobenzene	ND	ug/kg	170	--	--	1
3,3'-Dichlorobenzidine	ND	ug/kg	170	--	--	1
2,4-Dinitrotoluene	ND	ug/kg	170	--	--	1
2,6-Dinitrotoluene	ND	ug/kg	170	--	--	1
Azobenzene	ND	ug/kg	170	--	--	1
Fluoranthene	180	ug/kg	100	--	--	1
4-Bromophenyl phenyl ether	ND	ug/kg	170	--	--	1
Bis(2-chloroisopropyl)ether	ND	ug/kg	210	--	--	1
Bis(2-chloroethoxy)methane	ND	ug/kg	190	--	--	1
Hexachlorobutadiene	ND	ug/kg	170	--	--	1
Hexachloroethane	ND	ug/kg	140	--	--	1
Isophorone	ND	ug/kg	160	--	--	1
Naphthalene	ND	ug/kg	170	--	--	1
Nitrobenzene	ND	ug/kg	160	--	--	1
Bis(2-ethylhexyl)phthalate	ND	ug/kg	170	--	--	1
Butyl benzyl phthalate	ND	ug/kg	170	--	--	1
Di-n-butylphthalate	ND	ug/kg	170	--	--	1
Di-n-octylphthalate	ND	ug/kg	170	--	--	1
Diethyl phthalate	ND	ug/kg	170	--	--	1
Dimethyl phthalate	ND	ug/kg	170	--	--	1
Benzo(a)anthracene	120	ug/kg	100	--	--	1
Benzo(a)pyrene	ND	ug/kg	140	--	--	1
Benzo(b)fluoranthene	160	ug/kg	100	--	--	1



Project Name: E. BOSTON

Lab Number: L1705147

Project Number: 43068

Report Date: 02/23/17

**SAMPLE RESULTS**

Lab ID:	L1705147-06	Date Collected:	02/17/17 09:35
Client ID:	VES-112 (1-2)	Date Received:	02/17/17
Sample Location:	E. BOSTON	Field Prep:	Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Semivolatile Organics - Westborough Lab</b>						
Benzo(k)fluoranthene	ND	ug/kg	100	--	--	1
Chrysene	120	ug/kg	100	--	--	1
Acenaphthylene	ND	ug/kg	140	--	--	1
Anthracene	ND	ug/kg	100	--	--	1
Benzo(ghi)perylene	ND	ug/kg	140	--	--	1
Fluorene	ND	ug/kg	170	--	--	1
Phenanthrene	ND	ug/kg	100	--	--	1
Dibenzo(a,h)anthracene	ND	ug/kg	100	--	--	1
Indeno(1,2,3-cd)pyrene	ND	ug/kg	140	--	--	1
Pyrene	180	ug/kg	100	--	--	1
Aniline	ND	ug/kg	210	--	--	1
4-Chloroaniline	ND	ug/kg	170	--	--	1
Dibenzofuran	ND	ug/kg	170	--	--	1
2-Methylnaphthalene	ND	ug/kg	210	--	--	1
Acetophenone	ND	ug/kg	170	--	--	1
2,4,6-Trichlorophenol	ND	ug/kg	100	--	--	1
2-Chlorophenol	ND	ug/kg	170	--	--	1
2,4-Dichlorophenol	ND	ug/kg	160	--	--	1
2,4-Dimethylphenol	ND	ug/kg	170	--	--	1
2-Nitrophenol	ND	ug/kg	380	--	--	1
4-Nitrophenol	ND	ug/kg	240	--	--	1
2,4-Dinitrophenol	ND	ug/kg	830	--	--	1
Pentachlorophenol	ND	ug/kg	350	--	--	1
Phenol	ND	ug/kg	170	--	--	1
2-Methylphenol	ND	ug/kg	170	--	--	1
3-Methylphenol/4-Methylphenol	ND	ug/kg	250	--	--	1
2,4,5-Trichlorophenol	ND	ug/kg	170	--	--	1
Pyridine	ND	ug/kg	190	--	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	80		30-130
Phenol-d6	88		30-130
Nitrobenzene-d5	94		30-130
2-Fluorobiphenyl	84		30-130
2,4,6-Tribromophenol	95		30-130
4-Terphenyl-d14	83		30-130

**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1705147  
**Report Date:** 02/23/17

### Method Blank Analysis Batch Quality Control

Analytical Method: 97,8270D  
Analytical Date: 02/18/17 20:10  
Analyst: KV

Extraction Method: EPA 3546  
Extraction Date: 02/18/17 01:14

Parameter	Result	Qualifier	Units	RL	MDL
MCP Semivolatile Organics - Westborough Lab for sample(s): 02-04,06 Batch: WG978966-1					
Acenaphthene	ND		ug/kg	130	--
1,2,4-Trichlorobenzene	ND		ug/kg	160	--
Hexachlorobenzene	ND		ug/kg	99	--
Bis(2-chloroethyl)ether	ND		ug/kg	150	--
2-Chloronaphthalene	ND		ug/kg	160	--
1,2-Dichlorobenzene	ND		ug/kg	160	--
1,3-Dichlorobenzene	ND		ug/kg	160	--
1,4-Dichlorobenzene	ND		ug/kg	160	--
3,3'-Dichlorobenzidine	ND		ug/kg	160	--
2,4-Dinitrotoluene	ND		ug/kg	160	--
2,6-Dinitrotoluene	ND		ug/kg	160	--
Azobenzene	ND		ug/kg	160	--
Fluoranthene	ND		ug/kg	99	--
4-Bromophenyl phenyl ether	ND		ug/kg	160	--
Bis(2-chloroisopropyl)ether	ND		ug/kg	200	--
Bis(2-chloroethoxy)methane	ND		ug/kg	180	--
Hexachlorobutadiene	ND		ug/kg	160	--
Hexachloroethane	ND		ug/kg	130	--
Isophorone	ND		ug/kg	150	--
Naphthalene	ND		ug/kg	160	--
Nitrobenzene	ND		ug/kg	150	--
Bis(2-ethylhexyl)phthalate	ND		ug/kg	160	--
Butyl benzyl phthalate	ND		ug/kg	160	--
Di-n-butylphthalate	ND		ug/kg	160	--
Di-n-octylphthalate	ND		ug/kg	160	--
Diethyl phthalate	ND		ug/kg	160	--
Dimethyl phthalate	ND		ug/kg	160	--
Benzo(a)anthracene	ND		ug/kg	99	--
Benzo(a)pyrene	ND		ug/kg	130	--



**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1705147  
**Report Date:** 02/23/17

### Method Blank Analysis Batch Quality Control

Analytical Method: 97,8270D  
Analytical Date: 02/18/17 20:10  
Analyst: KV

Extraction Method: EPA 3546  
Extraction Date: 02/18/17 01:14

Parameter	Result	Qualifier	Units	RL	MDL
MCP Semivolatile Organics - Westborough Lab for sample(s): 02-04,06 Batch: WG978966-1					
Benzo(b)fluoranthene	ND	ug/kg	99	--	
Benzo(k)fluoranthene	ND	ug/kg	99	--	
Chrysene	ND	ug/kg	99	--	
Acenaphthylene	ND	ug/kg	130	--	
Anthracene	ND	ug/kg	99	--	
Benzo(ghi)perylene	ND	ug/kg	130	--	
Fluorene	ND	ug/kg	160	--	
Phenanthrene	ND	ug/kg	99	--	
Dibenzo(a,h)anthracene	ND	ug/kg	99	--	
Indeno(1,2,3-cd)pyrene	ND	ug/kg	130	--	
Pyrene	ND	ug/kg	99	--	
Aniline	ND	ug/kg	200	--	
4-Chloroaniline	ND	ug/kg	160	--	
Dibenzofuran	ND	ug/kg	160	--	
2-Methylnaphthalene	ND	ug/kg	200	--	
Acetophenone	ND	ug/kg	160	--	
2,4,6-Trichlorophenol	ND	ug/kg	99	--	
2-Chlorophenol	ND	ug/kg	160	--	
2,4-Dichlorophenol	ND	ug/kg	150	--	
2,4-Dimethylphenol	ND	ug/kg	160	--	
2-Nitrophenol	ND	ug/kg	360	--	
4-Nitrophenol	ND	ug/kg	230	--	
2,4-Dinitrophenol	ND	ug/kg	790	--	
Pentachlorophenol	ND	ug/kg	330	--	
Phenol	ND	ug/kg	160	--	
2-Methylphenol	ND	ug/kg	160	--	
3-Methylphenol/4-Methylphenol	ND	ug/kg	240	--	
2,4,5-Trichlorophenol	ND	ug/kg	160	--	
Pyridine	ND	ug/kg	180	--	



**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1705147  
**Report Date:** 02/23/17

### **Method Blank Analysis**

#### **Batch Quality Control**

Analytical Method: 97,8270D  
Analytical Date: 02/18/17 20:10  
Analyst: KV

Extraction Method: EPA 3546  
Extraction Date: 02/18/17 01:14

Parameter	Result	Qualifier	Units	RL	MDL
MCP Semivolatile Organics - Westborough Lab for sample(s): 02-04-06 Batch: WG978966-1					

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	77		30-130
Phenol-d6	81		30-130
Nitrobenzene-d5	84		30-130
2-Fluorobiphenyl	80		30-130
2,4,6-Tribromophenol	76		30-130
4-Terphenyl-d14	84		30-130

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1705147  
**Report Date:** 02/23/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Semivolatile Organics - Westborough Lab Associated sample(s): 02-04,06 Batch: WG978966-2 WG978966-3								
Acenaphthene	83		81		40-140	2		30
1,2,4-Trichlorobenzene	79		80		40-140	1		30
Hexachlorobenzene	89		87		40-140	2		30
Bis(2-chloroethyl)ether	77		78		40-140	1		30
2-Chloronaphthalene	86		84		40-140	2		30
1,2-Dichlorobenzene	73		74		40-140	1		30
1,3-Dichlorobenzene	70		72		40-140	3		30
1,4-Dichlorobenzene	70		73		40-140	4		30
3,3'-Dichlorobenzidine	74		73		40-140	1		30
2,4-Dinitrotoluene	94		90		40-140	4		30
2,6-Dinitrotoluene	94		89		40-140	5		30
Azobenzene	91		90		40-140	1		30
Fluoranthene	90		90		40-140	0		30
4-Bromophenyl phenyl ether	88		86		40-140	2		30
Bis(2-chloroisopropyl)ether	77		78		40-140	1		30
Bis(2-chloroethoxy)methane	83		83		40-140	0		30
Hexachlorobutadiene	76		76		40-140	0		30
Hexachloroethane	75		76		40-140	1		30
Isophorone	88		88		40-140	0		30
Naphthalene	81		80		40-140	1		30
Nitrobenzene	90		88		40-140	2		30

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1705147  
**Report Date:** 02/23/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Semivolatile Organics - Westborough Lab Associated sample(s): 02-04,06 Batch: WG978966-2 WG978966-3								
Bis(2-ethylhexyl)phthalate	88		92		40-140	4		30
Butyl benzyl phthalate	96		98		40-140	2		30
Di-n-butylphthalate	98		97		40-140	1		30
Di-n-octylphthalate	92		95		40-140	3		30
Diethyl phthalate	91		90		40-140	1		30
Dimethyl phthalate	95		92		40-140	3		30
Benzo(a)anthracene	88		87		40-140	1		30
Benzo(a)pyrene	89		96		40-140	8		30
Benzo(b)fluoranthene	87		92		40-140	6		30
Benzo(k)fluoranthene	88		94		40-140	7		30
Chrysene	82		82		40-140	0		30
Acenaphthylene	93		90		40-140	3		30
Anthracene	87		86		40-140	1		30
Benzo(ghi)perylene	83		86		40-140	4		30
Fluorene	86		86		40-140	0		30
Phenanthrene	82		83		40-140	1		30
Dibenz(a,h)anthracene	85		88		40-140	3		30
Indeno(1,2,3-cd)pyrene	86		89		40-140	3		30
Pyrene	89		90		40-140	1		30
Aniline	53		49		40-140	8		30
4-Chloroaniline	60		52		40-140	14		30

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1705147  
**Report Date:** 02/23/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Semivolatile Organics - Westborough Lab Associated sample(s): 02-04,06 Batch: WG978966-2 WG978966-3								
Dibenzofuran	83		83		40-140	0		30
2-Methylnaphthalene	82		82		40-140	0		30
Acetophenone	88		88		40-140	0		30
2,4,6-Trichlorophenol	103		97		30-130	6		30
2-Chlorophenol	87		86		30-130	1		30
2,4-Dichlorophenol	93		92		30-130	1		30
2,4-Dimethylphenol	90		89		30-130	1		30
2-Nitrophenol	100		101		30-130	1		30
4-Nitrophenol	92		90		30-130	2		30
2,4-Dinitrophenol	66		67		30-130	2		30
Pentachlorophenol	76		72		30-130	5		30
Phenol	86		86		30-130	0		30
2-Methylphenol	87		85		30-130	2		30
3-Methylphenol/4-Methylphenol	90		88		30-130	2		30
2,4,5-Trichlorophenol	97		94		30-130	3		30
Pyridine	60		62		30-130	3		30

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1705147  
**Report Date:** 02/23/17

<b>Parameter</b>	<i>LCS</i> <i>%Recovery</i>	<i>Qual</i>	<i>LCSD</i> <i>%Recovery</i>	<i>Qual</i>	<i>%Recovery</i> <i>Limits</i>	<i>RPD</i>	<i>Qual</i>	<i>RPD</i> <i>Limits</i>
MCP Semivolatile Organics - Westborough Lab Associated sample(s): 02-04,06 Batch: WG978966-2 WG978966-3								
<b>Surrogate</b>	<i>LCS</i> <i>%Recovery</i>	<i>Qual</i>	<i>LCSD</i> <i>%Recovery</i>	<i>Qual</i>	<b>Acceptance Criteria</b>			
2-Fluorophenol	81		82		30-130			
Phenol-d6	87		86		30-130			
Nitrobenzene-d5	90		89		30-130			
2-Fluorobiphenyl	84		82		30-130			
2,4,6-Tribromophenol	89		88		30-130			
4-Terphenyl-d14	88		88		30-130			

# **PETROLEUM HYDROCARBONS**



**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1705147  
**Report Date:** 02/23/17

### SAMPLE RESULTS

Lab ID:	L1705147-02	Date Collected:	02/17/17 10:35
Client ID:	VES-124 (3-5)	Date Received:	02/17/17
Sample Location:	E. BOSTON	Field Prep:	Not Specified
Matrix:	Soil		
Analytical Method:	100,VPH-04-1.1		
Analytical Date:	02/21/17 15:55		
Analyst:	JM		
Percent Solids:	84%		

### Quality Control Information

Condition of sample received:	Satisfactory
Sample Temperature upon receipt:	Received on Ice
Were samples received in methanol?	Yes (Covering the Soil)
Methanol ratio:	1.3:1

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>Volatile Petroleum Hydrocarbons - Westborough Lab</b>						
C5-C8 Aliphatics	ND		mg/kg	4.65	--	1
C9-C12 Aliphatics	ND		mg/kg	4.65	--	1
C9-C10 Aromatics	ND		mg/kg	4.65	--	1
C5-C8 Aliphatics, Adjusted	ND		mg/kg	4.65	--	1
C9-C12 Aliphatics, Adjusted	ND		mg/kg	4.65	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2,5-Dibromotoluene-PID	132	Q	70-130
2,5-Dibromotoluene-FID	136	Q	70-130

**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1705147  
**Report Date:** 02/23/17

### SAMPLE RESULTS

Lab ID:	L1705147-02	Date Collected:	02/17/17 10:35
Client ID:	VES-124 (3-5)	Date Received:	02/17/17
Sample Location:	E. BOSTON	Field Prep:	Not Specified
Matrix:	Soil	Extraction Method:	EPA 3546
Analytical Method:	98,EPH-04-1.1	Extraction Date:	02/18/17 00:52
Analytical Date:	02/19/17 21:32	Cleanup Method1:	EPH-04-1
Analyst:	SR	Cleanup Date1:	02/19/17
Percent Solids:	84%		

### Quality Control Information

Condition of sample received:	Satisfactory
Sample Temperature upon receipt:	Received on Ice
Sample Extraction method:	Extracted Per the Method

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>Extractable Petroleum Hydrocarbons - Westborough Lab</b>						
C9-C18 Aliphatics	ND		mg/kg	7.76	--	1
C19-C36 Aliphatics	24.5		mg/kg	7.76	--	1
C11-C22 Aromatics	60.7		mg/kg	7.76	--	1
C11-C22 Aromatics, Adjusted	39.8		mg/kg	7.76	--	1
Naphthalene	ND		mg/kg	0.388	--	1
2-Methylnaphthalene	ND		mg/kg	0.388	--	1
Acenaphthylene	ND		mg/kg	0.388	--	1
Acenaphthene	ND		mg/kg	0.388	--	1
Fluorene	ND		mg/kg	0.388	--	1
Phenanthrene	1.71		mg/kg	0.388	--	1
Anthracene	0.398		mg/kg	0.388	--	1
Fluoranthene	3.32		mg/kg	0.388	--	1
Pyrene	3.18		mg/kg	0.388	--	1
Benzo(a)anthracene	2.00		mg/kg	0.388	--	1
Chrysene	2.27		mg/kg	0.388	--	1
Benzo(b)fluoranthene	1.75		mg/kg	0.388	--	1
Benzo(k)fluoranthene	1.56		mg/kg	0.388	--	1
Benzo(a)pyrene	1.84		mg/kg	0.388	--	1
Indeno(1,2,3-cd)Pyrene	1.21		mg/kg	0.388	--	1
Dibenzo(a,h)anthracene	0.525		mg/kg	0.388	--	1
Benzo(ghi)perylene	1.15		mg/kg	0.388	--	1



**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1705147  
**Report Date:** 02/23/17

**SAMPLE RESULTS**

Lab ID:	L1705147-02	Date Collected:	02/17/17 10:35
Client ID:	VES-124 (3-5)	Date Received:	02/17/17
Sample Location:	E. BOSTON	Field Prep:	Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
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**Extractable Petroleum Hydrocarbons - Westborough Lab**

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Chloro-Octadecane	67		40-140
o-Terphenyl	80		40-140
2-Fluorobiphenyl	61		40-140
2-Bromonaphthalene	65		40-140

**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1705147  
**Report Date:** 02/23/17

### SAMPLE RESULTS

Lab ID:	L1705147-03	Date Collected:	02/17/17 10:40
Client ID:	VES-124 (18-20)	Date Received:	02/17/17
Sample Location:	E. BOSTON	Field Prep:	Not Specified
Matrix:	Soil		
Analytical Method:	100,VPH-04-1.1		
Analytical Date:	02/21/17 16:35		
Analyst:	JM		
Percent Solids:	78%		

### Quality Control Information

Condition of sample received:	Satisfactory
Sample Temperature upon receipt:	Received on Ice
Were samples received in methanol?	Yes (Covering the Soil)
Methanol ratio:	1:1.6

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>Volatile Petroleum Hydrocarbons - Westborough Lab</b>						
C5-C8 Aliphatics	ND		mg/kg	2.80	--	1
C9-C12 Aliphatics	ND		mg/kg	2.80	--	1
C9-C10 Aromatics	ND		mg/kg	2.80	--	1
C5-C8 Aliphatics, Adjusted	ND		mg/kg	2.80	--	1
C9-C12 Aliphatics, Adjusted	ND		mg/kg	2.80	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2,5-Dibromotoluene-PID	102		70-130
2,5-Dibromotoluene-FID	105		70-130

**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1705147  
**Report Date:** 02/23/17

### SAMPLE RESULTS

Lab ID:	L1705147-03	Date Collected:	02/17/17 10:40
Client ID:	VES-124 (18-20)	Date Received:	02/17/17
Sample Location:	E. BOSTON	Field Prep:	Not Specified
Matrix:	Soil	Extraction Method:	EPA 3546
Analytical Method:	98,EPH-04-1.1	Extraction Date:	02/18/17 00:52
Analytical Date:	02/19/17 22:04	Cleanup Method1:	EPH-04-1
Analyst:	SR	Cleanup Date1:	02/19/17
Percent Solids:	78%		

### Quality Control Information

Condition of sample received:	Satisfactory
Sample Temperature upon receipt:	Received on Ice
Sample Extraction method:	Extracted Per the Method

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>Extractable Petroleum Hydrocarbons - Westborough Lab</b>						
C9-C18 Aliphatics	ND		mg/kg	8.28	--	1
C19-C36 Aliphatics	ND		mg/kg	8.28	--	1
C11-C22 Aromatics	ND		mg/kg	8.28	--	1
C11-C22 Aromatics, Adjusted	ND		mg/kg	8.28	--	1
Naphthalene	ND		mg/kg	0.414	--	1
2-Methylnaphthalene	ND		mg/kg	0.414	--	1
Acenaphthylene	ND		mg/kg	0.414	--	1
Acenaphthene	ND		mg/kg	0.414	--	1
Fluorene	ND		mg/kg	0.414	--	1
Phenanthrene	ND		mg/kg	0.414	--	1
Anthracene	ND		mg/kg	0.414	--	1
Fluoranthene	ND		mg/kg	0.414	--	1
Pyrene	ND		mg/kg	0.414	--	1
Benzo(a)anthracene	ND		mg/kg	0.414	--	1
Chrysene	ND		mg/kg	0.414	--	1
Benzo(b)fluoranthene	ND		mg/kg	0.414	--	1
Benzo(k)fluoranthene	ND		mg/kg	0.414	--	1
Benzo(a)pyrene	ND		mg/kg	0.414	--	1
Indeno(1,2,3-cd)Pyrene	ND		mg/kg	0.414	--	1
Dibenzo(a,h)anthracene	ND		mg/kg	0.414	--	1
Benzo(ghi)perylene	ND		mg/kg	0.414	--	1



Project Name: E. BOSTON

Lab Number: L1705147

Project Number: 43068

Report Date: 02/23/17

**SAMPLE RESULTS**

Lab ID:	L1705147-03	Date Collected:	02/17/17 10:40
Client ID:	VES-124 (18-20)	Date Received:	02/17/17
Sample Location:	E. BOSTON	Field Prep:	Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
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**Extractable Petroleum Hydrocarbons - Westborough Lab**

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Chloro-Octadecane	52		40-140
o-Terphenyl	67		40-140
2-Fluorobiphenyl	68		40-140
2-Bromonaphthalene	70		40-140

**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1705147  
**Report Date:** 02/23/17

### SAMPLE RESULTS

Lab ID:	L1705147-04	Date Collected:	02/17/17 09:45
Client ID:	VES-116 (2-4)	Date Received:	02/17/17
Sample Location:	E. BOSTON	Field Prep:	Not Specified
Matrix:	Soil		
Analytical Method:	100,VPH-04-1.1		
Analytical Date:	02/21/17 17:14		
Analyst:	JM		
Percent Solids:	93%		

### Quality Control Information

Condition of sample received:	Satisfactory
Sample Temperature upon receipt:	Received on Ice
Were samples received in methanol?	Yes (Covering the Soil)
Methanol ratio:	1:1.4

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>Volatile Petroleum Hydrocarbons - Westborough Lab</b>						
C5-C8 Aliphatics	ND		mg/kg	2.18	--	1
C9-C12 Aliphatics	ND		mg/kg	2.18	--	1
C9-C10 Aromatics	ND		mg/kg	2.18	--	1
C5-C8 Aliphatics, Adjusted	ND		mg/kg	2.18	--	1
C9-C12 Aliphatics, Adjusted	ND		mg/kg	2.18	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2,5-Dibromotoluene-PID	99		70-130
2,5-Dibromotoluene-FID	102		70-130

**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1705147  
**Report Date:** 02/23/17

### SAMPLE RESULTS

Lab ID:	L1705147-04	Date Collected:	02/17/17 09:45
Client ID:	VES-116 (2-4)	Date Received:	02/17/17
Sample Location:	E. BOSTON	Field Prep:	Not Specified
Matrix:	Soil	Extraction Method:	EPA 3546
Analytical Method:	98,EPH-04-1.1	Extraction Date:	02/18/17 00:52
Analytical Date:	02/19/17 23:39	Cleanup Method1:	EPH-04-1
Analyst:	SR	Cleanup Date1:	02/19/17
Percent Solids:	93%		

### Quality Control Information

Condition of sample received:	Satisfactory
Sample Temperature upon receipt:	Received on Ice
Sample Extraction method:	Extracted Per the Method

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>Extractable Petroleum Hydrocarbons - Westborough Lab</b>						
C9-C18 Aliphatics	ND		mg/kg	7.01	--	1
C19-C36 Aliphatics	11.4		mg/kg	7.01	--	1
C11-C22 Aromatics	15.7		mg/kg	7.01	--	1
C11-C22 Aromatics, Adjusted	14.9		mg/kg	7.01	--	1
Naphthalene	ND		mg/kg	0.350	--	1
2-Methylnaphthalene	ND		mg/kg	0.350	--	1
Acenaphthylene	ND		mg/kg	0.350	--	1
Acenaphthene	ND		mg/kg	0.350	--	1
Fluorene	ND		mg/kg	0.350	--	1
Phenanthrene	ND		mg/kg	0.350	--	1
Anthracene	ND		mg/kg	0.350	--	1
Fluoranthene	0.434		mg/kg	0.350	--	1
Pyrene	0.386		mg/kg	0.350	--	1
Benzo(a)anthracene	ND		mg/kg	0.350	--	1
Chrysene	ND		mg/kg	0.350	--	1
Benzo(b)fluoranthene	ND		mg/kg	0.350	--	1
Benzo(k)fluoranthene	ND		mg/kg	0.350	--	1
Benzo(a)pyrene	ND		mg/kg	0.350	--	1
Indeno(1,2,3-cd)Pyrene	ND		mg/kg	0.350	--	1
Dibenzo(a,h)anthracene	ND		mg/kg	0.350	--	1
Benzo(ghi)perylene	ND		mg/kg	0.350	--	1



**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1705147  
**Report Date:** 02/23/17

**SAMPLE RESULTS**

Lab ID:	L1705147-04	Date Collected:	02/17/17 09:45
Client ID:	VES-116 (2-4)	Date Received:	02/17/17
Sample Location:	E. BOSTON	Field Prep:	Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
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**Extractable Petroleum Hydrocarbons - Westborough Lab**

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Chloro-Octadecane	83		40-140
o-Terphenyl	82		40-140
2-Fluorobiphenyl	74		40-140
2-Bromonaphthalene	77		40-140



**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1705147  
**Report Date:** 02/23/17

### SAMPLE RESULTS

Lab ID:	L1705147-06	Date Collected:	02/17/17 09:35
Client ID:	VES-112 (1-2)	Date Received:	02/17/17
Sample Location:	E. BOSTON	Field Prep:	Not Specified
Matrix:	Soil		
Analytical Method:	100,VPH-04-1.1		
Analytical Date:	02/21/17 17:54		
Analyst:	JM		
Percent Solids:	94%		

### Quality Control Information

Condition of sample received:	Satisfactory
Sample Temperature upon receipt:	Received on Ice
Were samples received in methanol?	Yes (Covering the Soil)
Methanol ratio:	2.5:1

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>Volatile Petroleum Hydrocarbons - Westborough Lab</b>						
C5-C8 Aliphatics	ND		mg/kg	7.23	--	1
C9-C12 Aliphatics	ND		mg/kg	7.23	--	1
C9-C10 Aromatics	ND		mg/kg	7.23	--	1
C5-C8 Aliphatics, Adjusted	ND		mg/kg	7.23	--	1
C9-C12 Aliphatics, Adjusted	ND		mg/kg	7.23	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2,5-Dibromotoluene-PID	99		70-130
2,5-Dibromotoluene-FID	103		70-130

**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1705147  
**Report Date:** 02/23/17

### SAMPLE RESULTS

Lab ID:	L1705147-06	Date Collected:	02/17/17 09:35
Client ID:	VES-112 (1-2)	Date Received:	02/17/17
Sample Location:	E. BOSTON	Field Prep:	Not Specified
Matrix:	Soil	Extraction Method:	EPA 3546
Analytical Method:	98,EPH-04-1.1	Extraction Date:	02/18/17 00:52
Analytical Date:	02/19/17 22:36	Cleanup Method1:	EPH-04-1
Analyst:	SR	Cleanup Date1:	02/19/17
Percent Solids:	94%		

### Quality Control Information

Condition of sample received:	Satisfactory
Sample Temperature upon receipt:	Received on Ice
Sample Extraction method:	Extracted Per the Method

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>Extractable Petroleum Hydrocarbons - Westborough Lab</b>						
C9-C18 Aliphatics	ND		mg/kg	6.89	--	1
C19-C36 Aliphatics	8.88		mg/kg	6.89	--	1
C11-C22 Aromatics	ND		mg/kg	6.89	--	1
C11-C22 Aromatics, Adjusted	ND		mg/kg	6.89	--	1
Naphthalene	ND		mg/kg	0.345	--	1
2-Methylnaphthalene	ND		mg/kg	0.345	--	1
Acenaphthylene	ND		mg/kg	0.345	--	1
Acenaphthene	ND		mg/kg	0.345	--	1
Fluorene	ND		mg/kg	0.345	--	1
Phenanthrene	ND		mg/kg	0.345	--	1
Anthracene	ND		mg/kg	0.345	--	1
Fluoranthene	ND		mg/kg	0.345	--	1
Pyrene	ND		mg/kg	0.345	--	1
Benzo(a)anthracene	ND		mg/kg	0.345	--	1
Chrysene	ND		mg/kg	0.345	--	1
Benzo(b)fluoranthene	ND		mg/kg	0.345	--	1
Benzo(k)fluoranthene	ND		mg/kg	0.345	--	1
Benzo(a)pyrene	ND		mg/kg	0.345	--	1
Indeno(1,2,3-cd)Pyrene	ND		mg/kg	0.345	--	1
Dibenzo(a,h)anthracene	ND		mg/kg	0.345	--	1
Benzo(ghi)perylene	ND		mg/kg	0.345	--	1



**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1705147  
**Report Date:** 02/23/17

**SAMPLE RESULTS**

Lab ID:	L1705147-06	Date Collected:	02/17/17 09:35
Client ID:	VES-112 (1-2)	Date Received:	02/17/17
Sample Location:	E. BOSTON	Field Prep:	Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
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**Extractable Petroleum Hydrocarbons - Westborough Lab**

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Chloro-Octadecane	84		40-140
o-Terphenyl	68		40-140
2-Fluorobiphenyl	64		40-140
2-Bromonaphthalene	66		40-140

**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1705147  
**Report Date:** 02/23/17

### Method Blank Analysis Batch Quality Control

Analytical Method: 98,EPH-04-1.1  
Analytical Date: 02/19/17 21:01  
Analyst: SR

Extraction Method: EPA 3546  
Extraction Date: 02/18/17 00:52  
Cleanup Method: EPH-04-1  
Cleanup Date: 02/19/17

Parameter	Result	Qualifier	Units	RL	MDL
Extractable Petroleum Hydrocarbons - Westborough Lab for sample(s): 1	02-04,06			Batch: WG978965-	
C9-C18 Aliphatics	ND		mg/kg	6.28	--
C19-C36 Aliphatics	ND		mg/kg	6.28	--
C11-C22 Aromatics	ND		mg/kg	6.28	--
C11-C22 Aromatics, Adjusted	ND		mg/kg	6.28	--
Naphthalene	ND		mg/kg	0.314	--
2-Methylnaphthalene	ND		mg/kg	0.314	--
Acenaphthylene	ND		mg/kg	0.314	--
Acenaphthene	ND		mg/kg	0.314	--
Fluorene	ND		mg/kg	0.314	--
Phenanthrene	ND		mg/kg	0.314	--
Anthracene	ND		mg/kg	0.314	--
Fluoranthene	ND		mg/kg	0.314	--
Pyrene	ND		mg/kg	0.314	--
Benzo(a)anthracene	ND		mg/kg	0.314	--
Chrysene	ND		mg/kg	0.314	--
Benzo(b)fluoranthene	ND		mg/kg	0.314	--
Benzo(k)fluoranthene	ND		mg/kg	0.314	--
Benzo(a)pyrene	ND		mg/kg	0.314	--
Indeno(1,2,3-cd)Pyrene	ND		mg/kg	0.314	--
Dibenzo(a,h)anthracene	ND		mg/kg	0.314	--
Benzo(ghi)perylene	ND		mg/kg	0.314	--

**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1705147  
**Report Date:** 02/23/17

### **Method Blank Analysis**

#### **Batch Quality Control**

Analytical Method: 98,EPH-04-1.1  
Analytical Date: 02/19/17 21:01  
Analyst: SR

Extraction Method: EPA 3546  
Extraction Date: 02/18/17 00:52  
Cleanup Method: EPH-04-1  
Cleanup Date: 02/19/17

<b>Parameter</b>	<b>Result</b>	<b>Qualifier</b>	<b>Units</b>	<b>RL</b>	<b>MDL</b>
Extractable Petroleum Hydrocarbons - Westborough Lab for sample(s): 02-04,06				Batch: WG978965-1	

<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Acceptance Criteria</b>
Chloro-Octadecane	58		40-140
o-Terphenyl	71		40-140
2-Fluorobiphenyl	79		40-140
2-Bromonaphthalene	82		40-140

**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1705147  
**Report Date:** 02/23/17

### **Method Blank Analysis** **Batch Quality Control**

Analytical Method: 100,VPH-04-1.1  
Analytical Date: 02/21/17 13:27  
Analyst: JM

<b>Parameter</b>	<b>Result</b>	<b>Qualifier</b>	<b>Units</b>	<b>RL</b>	<b>MDL</b>
<b>Volatile Petroleum Hydrocarbons - Westborough Lab for sample(s): 02-04,06 Batch: WG979928-3</b>					
C5-C8 Aliphatics	ND		mg/kg	2.67	--
C9-C12 Aliphatics	ND		mg/kg	2.67	--
C9-C10 Aromatics	ND		mg/kg	2.67	--
C5-C8 Aliphatics, Adjusted	ND		mg/kg	2.67	--
C9-C12 Aliphatics, Adjusted	ND		mg/kg	2.67	--

<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Acceptance Criteria</b>
2,5-Dibromotoluene-PID	99		70-130
2,5-Dibromotoluene-FID	102		70-130

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1705147  
**Report Date:** 02/23/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Extractable Petroleum Hydrocarbons - Westborough Lab Associated sample(s): 02-04,06 Batch: WG978965-2 WG978965-3								
C9-C18 Aliphatics	64		62		40-140	3		25
C19-C36 Aliphatics	73		71		40-140	3		25
C11-C22 Aromatics	77		84		40-140	9		25
Naphthalene	58		62		40-140	7		25
2-Methylnaphthalene	60		64		40-140	6		25
Acenaphthylene	63		68		40-140	8		25
Acenaphthene	67		71		40-140	6		25
Fluorene	71		76		40-140	7		25
Phenanthrene	76		80		40-140	5		25
Anthracene	81		88		40-140	8		25
Fluoranthene	78		83		40-140	6		25
Pyrene	78		83		40-140	6		25
Benzo(a)anthracene	78		82		40-140	5		25
Chrysene	71		76		40-140	7		25
Benzo(b)fluoranthene	80		85		40-140	6		25
Benzo(k)fluoranthene	85		92		40-140	8		25
Benzo(a)pyrene	73		78		40-140	7		25
Indeno(1,2,3-cd)Pyrene	77		83		40-140	8		25
Dibenzo(a,h)anthracene	54		59		40-140	9		25
Benzo(ghi)perylene	71		77		40-140	8		25
Nonane (C9)	50		50		30-140	0		25

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1705147  
**Report Date:** 02/23/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD Qual	RPD Limits
Extractable Petroleum Hydrocarbons - Westborough Lab Associated sample(s): 02-04,06 Batch: WG978965-2 WG978965-3							
Decane (C10)	56		55		40-140	2	25
Dodecane (C12)	60		59		40-140	2	25
Tetradecane (C14)	62		62		40-140	0	25
Hexadecane (C16)	69		66		40-140	4	25
Octadecane (C18)	71		69		40-140	3	25
Nonadecane (C19)	70		68		40-140	3	25
Eicosane (C20)	71		68		40-140	4	25
Docosane (C22)	71		69		40-140	3	25
Tetracosane (C24)	71		68		40-140	4	25
Hexacosane (C26)	70		68		40-140	3	25
Octacosane (C28)	70		68		40-140	3	25
Triacontane (C30)	69		67		40-140	3	25
Hexatriacontane (C36)	66		66		40-140	0	25

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Chloro-Octadecane	62		58		40-140
o-Terphenyl	90		100		40-140
2-Fluorobiphenyl	76		74		40-140
2-Bromonaphthalene	81		79		40-140
% Naphthalene Breakthrough	0		0		
% 2-Methylnaphthalene Breakthrough	0		0		

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1705147  
**Report Date:** 02/23/17

<b>Parameter</b>	<i>LCS</i> <b>%Recovery</b>	<i>LCS</i> <b>%Recovery</b>	<i>%Recovery</i> <b>Limits</b>	<i>RPD</i> <b>Qual</b>	<i>RPD</i> <b>Limits</b>
	<b>Qual</b>	<b>Qual</b>	<b>Limits</b>	<b>Qual</b>	
Volatile Petroleum Hydrocarbons - Westborough Lab Associated sample(s): 02-04,06 Batch: WG979928-1 WG979928-2					
C5-C8 Aliphatics	98	97	70-130	1	25
C9-C12 Aliphatics	104	103	70-130	1	25
C9-C10 Aromatics	100	99	70-130	1	25
Benzene	97	97	70-130	0	25
Toluene	98	97	70-130	1	25
Ethylbenzene	98	97	70-130	1	25
p/m-Xylene	100	98	70-130	2	25
o-Xylene	99	98	70-130	1	25
Methyl tert butyl ether	96	103	70-130	7	25
Naphthalene	104	108	70-130	4	25
1,2,4-Trimethylbenzene	100	99	70-130	1	25
Pentane	89	89	70-130	1	25
2-Methylpentane	97	96	70-130	1	25
2,2,4-Trimethylpentane	103	102	70-130	1	25
n-Nonane	104	103	30-130	1	25
n-Decane	104	102	70-130	2	25
n-Butylcyclohexane	104	104	70-130	0	25

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1705147  
**Report Date:** 02/23/17

<b>Parameter</b>	<i>LCS</i> <i>%Recovery</i>	<i>Qual</i>	<i>LCSD</i> <i>%Recovery</i>	<i>Qual</i>	<i>%Recovery</i> <i>Limits</i>	<i>RPD</i>	<i>Qual</i>	<i>RPD</i> <i>Limits</i>
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Volatile Petroleum Hydrocarbons - Westborough Lab Associated sample(s): 02-04,06 Batch: WG979928-1 WG979928-2

<b>Surrogate</b>	<i>LCS</i> <i>%Recovery</i>	<i>Qual</i>	<i>LCSD</i> <i>%Recovery</i>	<i>Qual</i>	<i>Acceptance</i> <i>Criteria</i>
2,5-Dibromotoluene-PID	100		99		70-130
2,5-Dibromotoluene-FID	99		100		70-130

**PCBS**



**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1705147  
**Report Date:** 02/23/17

**SAMPLE RESULTS**

Lab ID: L1705147-02  
Client ID: VES-124 (3-5)  
Sample Location: E. BOSTON  
Matrix: Soil  
Analytical Method: 97,8082A  
Analytical Date: 02/20/17 12:18  
Analyst: HT  
Percent Solids: 84%

Date Collected: 02/17/17 10:35  
Date Received: 02/17/17  
Field Prep: Not Specified  
Extraction Method: EPA 3540C  
Extraction Date: 02/18/17 03:00  
Cleanup Method: EPA 3665A  
Cleanup Date: 02/19/17  
Cleanup Method: EPA 3660B  
Cleanup Date: 02/19/17

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
<b>MCP Polychlorinated Biphenyls - Westborough Lab</b>							
Aroclor 1016	ND		ug/kg	39.2	--	1	A
Aroclor 1221	ND		ug/kg	39.2	--	1	A
Aroclor 1232	ND		ug/kg	39.2	--	1	A
Aroclor 1242	ND		ug/kg	39.2	--	1	A
Aroclor 1248	ND		ug/kg	39.2	--	1	A
Aroclor 1254	ND		ug/kg	39.2	--	1	A
Aroclor 1260	ND		ug/kg	39.2	--	1	A
Aroclor 1262	ND		ug/kg	39.2	--	1	A
Aroclor 1268	ND		ug/kg	39.2	--	1	A
PCBs, Total	ND		ug/kg	39.2	--	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	58		30-150	A
Decachlorobiphenyl	55		30-150	A
2,4,5,6-Tetrachloro-m-xylene	56		30-150	B
Decachlorobiphenyl	45		30-150	B

Project Name: E. BOSTON

Lab Number: L1705147

Project Number: 43068

Report Date: 02/23/17

**SAMPLE RESULTS**

Lab ID: L1705147-03  
 Client ID: VES-124 (18-20)  
 Sample Location: E. BOSTON  
 Matrix: Soil  
 Analytical Method: 97,8082A  
 Analytical Date: 02/20/17 12:32  
 Analyst: HT  
 Percent Solids: 78%

Date Collected: 02/17/17 10:40  
 Date Received: 02/17/17  
 Field Prep: Not Specified  
 Extraction Method: EPA 3540C  
 Extraction Date: 02/18/17 03:00  
 Cleanup Method: EPA 3665A  
 Cleanup Date: 02/19/17  
 Cleanup Method: EPA 3660B  
 Cleanup Date: 02/19/17

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
<b>MCP Polychlorinated Biphenyls - Westborough Lab</b>							
Aroclor 1016	ND		ug/kg	41.6	--	1	A
Aroclor 1221	ND		ug/kg	41.6	--	1	A
Aroclor 1232	ND		ug/kg	41.6	--	1	A
Aroclor 1242	ND		ug/kg	41.6	--	1	A
Aroclor 1248	ND		ug/kg	41.6	--	1	A
Aroclor 1254	ND		ug/kg	41.6	--	1	A
Aroclor 1260	ND		ug/kg	41.6	--	1	A
Aroclor 1262	ND		ug/kg	41.6	--	1	A
Aroclor 1268	ND		ug/kg	41.6	--	1	A
PCBs, Total	ND		ug/kg	41.6	--	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	60		30-150	A
Decachlorobiphenyl	57		30-150	A
2,4,5,6-Tetrachloro-m-xylene	66		30-150	B
Decachlorobiphenyl	54		30-150	B

**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1705147  
**Report Date:** 02/23/17

**SAMPLE RESULTS**

Lab ID: L1705147-04  
Client ID: VES-116 (2-4)  
Sample Location: E. BOSTON  
Matrix: Soil  
Analytical Method: 97,8082A  
Analytical Date: 02/20/17 12:45  
Analyst: HT  
Percent Solids: 93%

Date Collected: 02/17/17 09:45  
Date Received: 02/17/17  
Field Prep: Not Specified  
Extraction Method: EPA 3540C  
Extraction Date: 02/18/17 03:00  
Cleanup Method: EPA 3665A  
Cleanup Date: 02/19/17  
Cleanup Method: EPA 3660B  
Cleanup Date: 02/19/17

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
<b>MCP Polychlorinated Biphenyls - Westborough Lab</b>							
Aroclor 1016	ND		ug/kg	35.6	--	1	A
Aroclor 1221	ND		ug/kg	35.6	--	1	A
Aroclor 1232	ND		ug/kg	35.6	--	1	A
Aroclor 1242	ND		ug/kg	35.6	--	1	A
Aroclor 1248	ND		ug/kg	35.6	--	1	A
Aroclor 1254	ND		ug/kg	35.6	--	1	A
Aroclor 1260	ND		ug/kg	35.6	--	1	A
Aroclor 1262	ND		ug/kg	35.6	--	1	A
Aroclor 1268	ND		ug/kg	35.6	--	1	A
PCBs, Total	ND		ug/kg	35.6	--	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	66		30-150	A
Decachlorobiphenyl	66		30-150	A
2,4,5,6-Tetrachloro-m-xylene	67		30-150	B
Decachlorobiphenyl	61		30-150	B

**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1705147  
**Report Date:** 02/23/17

**SAMPLE RESULTS**

Lab ID: L1705147-06  
Client ID: VES-112 (1-2)  
Sample Location: E. BOSTON  
Matrix: Soil  
Analytical Method: 97,8082A  
Analytical Date: 02/20/17 12:59  
Analyst: HT  
Percent Solids: 94%

Date Collected: 02/17/17 09:35  
Date Received: 02/17/17  
Field Prep: Not Specified  
Extraction Method: EPA 3540C  
Extraction Date: 02/18/17 03:00  
Cleanup Method: EPA 3665A  
Cleanup Date: 02/19/17  
Cleanup Method: EPA 3660B  
Cleanup Date: 02/19/17

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
<b>MCP Polychlorinated Biphenyls - Westborough Lab</b>							
Aroclor 1016	ND		ug/kg	35.4	--	1	A
Aroclor 1221	ND		ug/kg	35.4	--	1	A
Aroclor 1232	ND		ug/kg	35.4	--	1	A
Aroclor 1242	ND		ug/kg	35.4	--	1	A
Aroclor 1248	ND		ug/kg	35.4	--	1	A
Aroclor 1254	ND		ug/kg	35.4	--	1	A
Aroclor 1260	ND		ug/kg	35.4	--	1	A
Aroclor 1262	ND		ug/kg	35.4	--	1	A
Aroclor 1268	ND		ug/kg	35.4	--	1	A
PCBs, Total	ND		ug/kg	35.4	--	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	57		30-150	A
Decachlorobiphenyl	52		30-150	A
2,4,5,6-Tetrachloro-m-xylene	62		30-150	B
Decachlorobiphenyl	55		30-150	B

**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1705147  
**Report Date:** 02/23/17

### Method Blank Analysis Batch Quality Control

Analytical Method: 97,8082A  
Analytical Date: 02/20/17 11:37  
Analyst: HT

Extraction Method: EPA 3540C  
Extraction Date: 02/18/17 03:00  
Cleanup Method: EPA 3665A  
Cleanup Date: 02/19/17  
Cleanup Method: EPA 3660B  
Cleanup Date: 02/19/17

Parameter	Result	Qualifier	Units	RL	MDL	Column
<b>MCP Polychlorinated Biphenyls - Westborough Lab for sample(s): 02-04,06 Batch: WG978971-1</b>						
Aroclor 1016	ND		ug/kg	32.3	--	A
Aroclor 1221	ND		ug/kg	32.3	--	A
Aroclor 1232	ND		ug/kg	32.3	--	A
Aroclor 1242	ND		ug/kg	32.3	--	A
Aroclor 1248	ND		ug/kg	32.3	--	A
Aroclor 1254	ND		ug/kg	32.3	--	A
Aroclor 1260	ND		ug/kg	32.3	--	A
Aroclor 1262	ND		ug/kg	32.3	--	A
Aroclor 1268	ND		ug/kg	32.3	--	A
PCBs, Total	ND		ug/kg	32.3	--	A

Surrogate	%Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	63		30-150	A
Decachlorobiphenyl	60		30-150	A
2,4,5,6-Tetrachloro-m-xylene	68		30-150	B
Decachlorobiphenyl	54		30-150	B

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1705147  
**Report Date:** 02/23/17

<b>Parameter</b>	<i>LCS</i> <i>%Recovery</i>	<i>Qual</i>	<i>LCSD</i> <i>%Recovery</i>	<i>Qual</i>	<i>%Recovery</i> <i>Limits</i>	<i>RPD</i>	<i>Qual</i>	<i>RPD</i> <i>Limits</i>	<i>Column</i>
MCP Polychlorinated Biphenyls - Westborough Lab Associated sample(s): 02-04,06 Batch: WG978971-2 WG978971-3									
Aroclor 1016	66		57		40-140	15		30	A
Aroclor 1260	77		68		40-140	12		30	A

<b>Surrogate</b>	<i>LCS</i> <i>%Recovery</i>	<i>Qual</i>	<i>LCSD</i> <i>%Recovery</i>	<i>Qual</i>	<i>Acceptance</i> <i>Criteria</i>	<i>Column</i>
2,4,5,6-Tetrachloro-m-xylene						
Decachlorobiphenyl	67		58		30-150	A
2,4,5,6-Tetrachloro-m-xylene	67		55		30-150	A
Decachlorobiphenyl	72		62		30-150	B
2,4,5,6-Tetrachloro-m-xylene	57		50		30-150	B

# **PESTICIDES**



**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1705147  
**Report Date:** 02/23/17

**SAMPLE RESULTS**

Lab ID: L1705147-01  
Client ID: VES-124 (0-2)  
Sample Location: E. BOSTON  
Matrix: Soil  
Analytical Method: 97,8081B  
Analytical Date: 02/19/17 15:43  
Analyst: RL  
Percent Solids: 93%

Date Collected: 02/17/17 10:30  
Date Received: 02/17/17  
Field Prep: Not Specified  
Extraction Method: EPA 3546  
Extraction Date: 02/18/17 02:07  
Cleanup Method: EPA 3620B  
Cleanup Date: 02/18/17

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
<b>MCP Organochlorine Pesticides - Westborough Lab</b>							
Delta-BHC	ND		ug/kg	8.26	--	1	A
Lindane	ND		ug/kg	2.75	--	1	A
Alpha-BHC	ND		ug/kg	3.44	--	1	A
Beta-BHC	ND		ug/kg	8.26	--	1	A
Heptachlor	ND		ug/kg	4.13	--	1	A
Aldrin	ND		ug/kg	8.26	--	1	A
Heptachlor epoxide	ND		ug/kg	15.5	--	1	A
Endrin	ND		ug/kg	3.44	--	1	A
Endrin ketone	ND		ug/kg	8.26	--	1	A
Dieldrin	ND		ug/kg	5.16	--	1	A
4,4'-DDE	ND		ug/kg	8.26	--	1	A
4,4'-DDD	ND		ug/kg	8.26	--	1	A
4,4'-DDT	ND		ug/kg	15.5	--	1	A
Endosulfan I	ND		ug/kg	8.26	--	1	A
Endosulfan II	ND		ug/kg	8.26	--	1	A
Endosulfan sulfate	ND		ug/kg	3.44	--	1	A
Methoxychlor	ND		ug/kg	15.5	--	1	A
Chlordane	ND		ug/kg	67.1	--	1	A
Hexachlorobenzene	ND		ug/kg	8.26	--	1	A
Toxaphene	ND		ug/kg	155	--	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	84		30-150	B
Decachlorobiphenyl	80		30-150	B
2,4,5,6-Tetrachloro-m-xylene	90		30-150	A
Decachlorobiphenyl	72		30-150	A

**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1705147  
**Report Date:** 02/23/17

**SAMPLE RESULTS**

Lab ID: L1705147-05  
Client ID: VES-112 (0-1)  
Sample Location: E. BOSTON  
Matrix: Soil  
Analytical Method: 97,8081B  
Analytical Date: 02/19/17 15:55  
Analyst: RL  
Percent Solids: 94%

Date Collected: 02/17/17 09:30  
Date Received: 02/17/17  
Field Prep: Not Specified  
Extraction Method: EPA 3546  
Extraction Date: 02/18/17 02:07  
Cleanup Method: EPA 3620B  
Cleanup Date: 02/18/17

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
<b>MCP Organochlorine Pesticides - Westborough Lab</b>							
Delta-BHC	ND		ug/kg	8.36	--	1	A
Lindane	ND		ug/kg	2.79	--	1	A
Alpha-BHC	ND		ug/kg	3.48	--	1	A
Beta-BHC	ND		ug/kg	8.36	--	1	A
Heptachlor	ND		ug/kg	4.18	--	1	A
Aldrin	ND		ug/kg	8.36	--	1	A
Heptachlor epoxide	ND		ug/kg	15.7	--	1	A
Endrin	ND		ug/kg	3.48	--	1	A
Endrin ketone	ND		ug/kg	8.36	--	1	A
Dieldrin	ND		ug/kg	5.22	--	1	A
4,4'-DDE	15.4		ug/kg	8.36	--	1	A
4,4'-DDD	ND		ug/kg	8.36	--	1	A
4,4'-DDT	30.5		ug/kg	15.7	--	1	B
Endosulfan I	ND		ug/kg	8.36	--	1	A
Endosulfan II	ND		ug/kg	8.36	--	1	A
Endosulfan sulfate	ND		ug/kg	3.48	--	1	A
Methoxychlor	ND		ug/kg	15.7	--	1	A
Chlordane	ND		ug/kg	67.9	--	1	A
Hexachlorobenzene	ND		ug/kg	8.36	--	1	A
Toxaphene	ND		ug/kg	157	--	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	78		30-150	B
Decachlorobiphenyl	75		30-150	B
2,4,5,6-Tetrachloro-m-xylene	86		30-150	A
Decachlorobiphenyl	60		30-150	A

**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1705147  
**Report Date:** 02/23/17

### Method Blank Analysis Batch Quality Control

Analytical Method: 97,8081B  
Analytical Date: 02/19/17 15:05  
Analyst: RL

Extraction Method: EPA 3546  
Extraction Date: 02/18/17 02:07  
Cleanup Method: EPA 3620B  
Cleanup Date: 02/18/17

Parameter	Result	Qualifier	Units	RL	MDL	Column
MCP Organochlorine Pesticides - Westborough Lab for sample(s): 01,05 Batch: WG978969-1						
Delta-BHC	ND		ug/kg	7.56	--	A
Lindane	ND		ug/kg	2.52	--	A
Alpha-BHC	ND		ug/kg	3.15	--	A
Beta-BHC	ND		ug/kg	7.56	--	A
Heptachlor	ND		ug/kg	3.78	--	A
Aldrin	ND		ug/kg	7.56	--	A
Heptachlor epoxide	ND		ug/kg	14.2	--	A
Endrin	ND		ug/kg	3.15	--	A
Endrin ketone	ND		ug/kg	7.56	--	A
Dieldrin	ND		ug/kg	4.72	--	A
4,4'-DDE	ND		ug/kg	7.56	--	A
4,4'-DDD	ND		ug/kg	7.56	--	A
4,4'-DDT	ND		ug/kg	14.2	--	A
Endosulfan I	ND		ug/kg	7.56	--	A
Endosulfan II	ND		ug/kg	7.56	--	A
Endosulfan sulfate	ND		ug/kg	3.15	--	A
Methoxychlor	ND		ug/kg	14.2	--	A
Chlordane	ND		ug/kg	61.4	--	A
Hexachlorobenzene	ND		ug/kg	7.56	--	A
Toxaphene	ND		ug/kg	142	--	A

Surrogate	%Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	78		30-150	B
Decachlorobiphenyl	73		30-150	B
2,4,5,6-Tetrachloro-m-xylene	86		30-150	A
Decachlorobiphenyl	69		30-150	A



# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1705147  
**Report Date:** 02/23/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
MCP Organochlorine Pesticides - Westborough Lab Associated sample(s): 01,05 Batch: WG978969-2 WG978969-3									
Delta-BHC	79		82		40-140	4		30	A
Lindane	81		84		40-140	4		30	A
Alpha-BHC	94		98		40-140	4		30	A
Beta-BHC	93		89		40-140	4		30	A
Heptachlor	86		89		40-140	3		30	A
Aldrin	94		95		40-140	1		30	A
Heptachlor epoxide	91		91		40-140	0		30	A
Endrin	94		94		40-140	0		30	A
Endrin ketone	84		87		40-140	4		30	A
Dieldrin	96		97		40-140	1		30	A
4,4'-DDE	94		94		40-140	0		30	A
4,4'-DDD	91		92		40-140	1		30	A
4,4'-DDT	90		90		40-140	0		30	A
Endosulfan I	91		92		40-140	1		30	A
Endosulfan II	89		91		40-140	2		30	A
Endosulfan sulfate	72		76		40-140	5		30	A
Methoxychlor	90		90		40-140	0		30	A
Hexachlorobenzene	79		83		40-140	5		30	A

**Lab Control Sample Analysis**  
**Batch Quality Control**

**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1705147  
**Report Date:** 02/23/17

<b>Parameter</b>	<i>LCS</i> %Recovery	<i>Qual</i>	<i>LCSD</i> %Recovery	<i>Qual</i>	<i>%Recovery</i> <i>Limits</i>	<i>RPD</i>	<i>Qual</i>	<i>RPD</i> <i>Limits</i>
<b>Surrogate</b>	<i>LCS</i> %Recovery	<i>Qual</i>	<i>LCSD</i> %Recovery	<i>Qual</i>	<b>Acceptance</b> <b>Criteria</b>		<b>Column</b>	
MCP Organochlorine Pesticides - Westborough Lab Associated sample(s): 01,05 Batch: WG978969-2 WG978969-3								
2,4,5,6-Tetrachloro-m-xylene	79		82		30-150		B	
Decachlorobiphenyl	77		78		30-150		B	
2,4,5,6-Tetrachloro-m-xylene	86		89		30-150		A	
Decachlorobiphenyl	66		50		30-150		A	

## METALS



**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1705147  
**Report Date:** 02/23/17

**SAMPLE RESULTS**

Lab ID: L1705147-02 Date Collected: 02/17/17 10:35  
Client ID: VES-124 (3-5) Date Received: 02/17/17  
Sample Location: E. BOSTON Field Prep: Not Specified  
Matrix: Soil  
Percent Solids: 84%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
<b>MCP Total Metals - Mansfield Lab</b>											
Arsenic, Total	11		mg/kg	0.47	--	1	02/22/17 17:32	02/22/17 22:46	EPA 3050B	97,6010C	MC
Barium, Total	140		mg/kg	0.47	--	1	02/22/17 17:32	02/22/17 22:46	EPA 3050B	97,6010C	MC
Cadmium, Total	0.72		mg/kg	0.47	--	1	02/22/17 17:32	02/22/17 22:46	EPA 3050B	97,6010C	MC
Chromium, Total	83		mg/kg	0.47	--	1	02/22/17 17:32	02/22/17 22:46	EPA 3050B	97,6010C	MC
Lead, Total	1800		mg/kg	24	--	10	02/22/17 17:32	02/23/17 02:54	EPA 3050B	97,6010C	MC
Mercury, Total	1.25		mg/kg	0.093	--	1	02/22/17 17:29	02/22/17 19:06	EPA 7471B	97,7471B	EA
Selenium, Total	ND		mg/kg	2.4	--	1	02/22/17 17:32	02/22/17 22:46	EPA 3050B	97,6010C	MC
Silver, Total	0.77		mg/kg	0.47	--	1	02/22/17 17:32	02/22/17 22:46	EPA 3050B	97,6010C	MC



**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1705147  
**Report Date:** 02/23/17

**SAMPLE RESULTS**

Lab ID: L1705147-03  
Client ID: VES-124 (18-20)  
Sample Location: E. BOSTON  
Matrix: Soil  
Percent Solids: 78%

Date Collected: 02/17/17 10:40  
Date Received: 02/17/17  
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
<b>MCP Total Metals - Mansfield Lab</b>											
Arsenic, Total	1.7		mg/kg	0.50	--	1	02/20/17 20:30	02/21/17 03:19	EPA 3050B	97,6010C	MC
Barium, Total	9.8		mg/kg	0.50	--	1	02/20/17 20:30	02/21/17 03:19	EPA 3050B	97,6010C	MC
Cadmium, Total	ND		mg/kg	0.50	--	1	02/20/17 20:30	02/21/17 03:19	EPA 3050B	97,6010C	MC
Chromium, Total	8.0		mg/kg	0.50	--	1	02/20/17 20:30	02/21/17 03:19	EPA 3050B	97,6010C	MC
Lead, Total	11		mg/kg	2.5	--	1	02/20/17 20:30	02/21/17 03:19	EPA 3050B	97,6010C	MC
Mercury, Total	0.164		mg/kg	0.082	--	1	02/18/17 09:30	02/22/17 00:44	EPA 7471B	97,7471B	EA
Selenium, Total	ND		mg/kg	2.5	--	1	02/20/17 20:30	02/21/17 03:19	EPA 3050B	97,6010C	MC
Silver, Total	ND		mg/kg	0.50	--	1	02/20/17 20:30	02/21/17 03:19	EPA 3050B	97,6010C	MC



**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1705147  
**Report Date:** 02/23/17

**SAMPLE RESULTS**

Lab ID: L1705147-04 Date Collected: 02/17/17 09:45  
Client ID: VES-116 (2-4) Date Received: 02/17/17  
Sample Location: E. BOSTON Field Prep: Not Specified  
Matrix: Soil  
Percent Solids: 93%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
<b>MCP Total Metals - Mansfield Lab</b>											
Arsenic, Total	5.1		mg/kg	0.43	--	1	02/20/17 20:30	02/21/17 03:23	EPA 3050B	97,6010C	MC
Barium, Total	38		mg/kg	0.43	--	1	02/20/17 20:30	02/21/17 03:23	EPA 3050B	97,6010C	MC
Cadmium, Total	ND		mg/kg	0.43	--	1	02/20/17 20:30	02/21/17 03:23	EPA 3050B	97,6010C	MC
Chromium, Total	27		mg/kg	0.43	--	1	02/20/17 20:30	02/21/17 03:23	EPA 3050B	97,6010C	MC
Lead, Total	66		mg/kg	2.1	--	1	02/20/17 20:30	02/21/17 03:23	EPA 3050B	97,6010C	MC
Mercury, Total	0.222		mg/kg	0.068	--	1	02/18/17 09:30	02/22/17 00:46	EPA 7471B	97,7471B	EA
Selenium, Total	ND		mg/kg	2.1	--	1	02/20/17 20:30	02/21/17 03:23	EPA 3050B	97,6010C	MC
Silver, Total	ND		mg/kg	0.43	--	1	02/20/17 20:30	02/21/17 03:23	EPA 3050B	97,6010C	MC



**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1705147  
**Report Date:** 02/23/17

**SAMPLE RESULTS**

Lab ID: L1705147-06 Date Collected: 02/17/17 09:35  
Client ID: VES-112 (1-2) Date Received: 02/17/17  
Sample Location: E. BOSTON Field Prep: Not Specified  
Matrix: Soil  
Percent Solids: 94%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
<b>MCP Total Metals - Mansfield Lab</b>											
Arsenic, Total	4.6		mg/kg	0.40	--	1	02/22/17 17:32	02/22/17 23:07	EPA 3050B	97,6010C	MC
Barium, Total	23		mg/kg	0.40	--	1	02/22/17 17:32	02/22/17 23:07	EPA 3050B	97,6010C	MC
Cadmium, Total	ND		mg/kg	0.40	--	1	02/22/17 17:32	02/22/17 23:07	EPA 3050B	97,6010C	MC
Chromium, Total	26		mg/kg	0.40	--	1	02/22/17 17:32	02/22/17 23:07	EPA 3050B	97,6010C	MC
Lead, Total	49		mg/kg	2.0	--	1	02/22/17 17:32	02/22/17 23:07	EPA 3050B	97,6010C	MC
Mercury, Total	0.099		mg/kg	0.079	--	1	02/22/17 17:29	02/22/17 19:15	EPA 7471B	97,7471B	EA
Selenium, Total	ND		mg/kg	2.0	--	1	02/22/17 17:32	02/22/17 23:07	EPA 3050B	97,6010C	MC
Silver, Total	ND		mg/kg	0.40	--	1	02/22/17 17:32	02/22/17 23:07	EPA 3050B	97,6010C	MC



**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1705147  
**Report Date:** 02/23/17

## Method Blank Analysis Batch Quality Control

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
MCP Total Metals - Mansfield Lab for sample(s): 03-04 Batch: WG979003-1									
Mercury, Total	ND	mg/kg	0.083	--	1	02/18/17 09:30	02/22/17 00:35	97,7471B	EA

### Prep Information

Digestion Method: EPA 7471B

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
MCP Total Metals - Mansfield Lab for sample(s): 03-04 Batch: WG979459-1									
Arsenic, Total	ND	mg/kg	0.40	--	1	02/20/17 20:30	02/21/17 01:39	97,6010C	MC
Barium, Total	ND	mg/kg	0.40	--	1	02/20/17 20:30	02/21/17 01:39	97,6010C	MC
Cadmium, Total	ND	mg/kg	0.40	--	1	02/20/17 20:30	02/21/17 01:39	97,6010C	MC
Chromium, Total	ND	mg/kg	0.40	--	1	02/20/17 20:30	02/21/17 01:39	97,6010C	MC
Lead, Total	ND	mg/kg	2.0	--	1	02/20/17 20:30	02/21/17 01:39	97,6010C	MC
Selenium, Total	ND	mg/kg	2.0	--	1	02/20/17 20:30	02/21/17 01:39	97,6010C	MC
Silver, Total	ND	mg/kg	0.40	--	1	02/20/17 20:30	02/21/17 01:39	97,6010C	MC

### Prep Information

Digestion Method: EPA 3050B

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
MCP Total Metals - Mansfield Lab for sample(s): 02,06 Batch: WG980148-1									
Arsenic, Total	ND	mg/kg	0.40	--	1	02/22/17 17:32	02/22/17 22:42	97,6010C	MC
Barium, Total	ND	mg/kg	0.40	--	1	02/22/17 17:32	02/22/17 22:42	97,6010C	MC
Cadmium, Total	ND	mg/kg	0.40	--	1	02/22/17 17:32	02/22/17 22:42	97,6010C	MC
Chromium, Total	ND	mg/kg	0.40	--	1	02/22/17 17:32	02/22/17 22:42	97,6010C	MC
Lead, Total	ND	mg/kg	2.0	--	1	02/22/17 17:32	02/23/17 02:38	97,6010C	MC
Selenium, Total	ND	mg/kg	2.0	--	1	02/22/17 17:32	02/22/17 22:42	97,6010C	MC
Silver, Total	ND	mg/kg	0.40	--	1	02/22/17 17:32	02/22/17 22:42	97,6010C	MC



**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1705147  
**Report Date:** 02/23/17

## Method Blank Analysis Batch Quality Control

### Prep Information

Digestion Method: EPA 3050B

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
MCP Total Metals - Mansfield Lab for sample(s): 02,06 Batch: WG980149-1									
Mercury, Total	ND	mg/kg	0.083	--	1	02/22/17 17:29	02/22/17 19:02	97,7471B	EA

### Prep Information

Digestion Method: EPA 7471B

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1705147  
**Report Date:** 02/23/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Total Metals - Mansfield Lab Associated sample(s): 03-04 Batch: WG979003-2 WG979003-3 SRM Lot Number: D091-540								
Mercury, Total	100		97		72-128	3		30
MCP Total Metals - Mansfield Lab Associated sample(s): 03-04 Batch: WG979459-2 WG979459-3 SRM Lot Number: D091-540								
Arsenic, Total	96		110		80-121	14		30
Barium, Total	91		100		84-117	9		30
Cadmium, Total	96		102		83-117	6		30
Chromium, Total	98		105		80-119	7		30
Lead, Total	96		110		82-118	14		30
Selenium, Total	96		101		79-121	5		30
Silver, Total	96		109		76-124	13		30
MCP Total Metals - Mansfield Lab Associated sample(s): 02,06 Batch: WG980148-2 WG980148-3 SRM Lot Number: D091-540								
Arsenic, Total	110		117		80-121	6		30
Barium, Total	96		96		84-117	0		30
Cadmium, Total	105		107		83-117	2		30
Chromium, Total	98		98		80-119	0		30
Lead, Total	110		110		82-118	0		30
Selenium, Total	107		112		79-121	5		30
Silver, Total	102		99		76-124	3		30

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1705147  
**Report Date:** 02/23/17

Parameter	LCS %Recovery	LCSD %Recovery	%Recovery Limits	RPD	RPD Limits
MCP Total Metals - Mansfield Lab Associated sample(s): 02,06 Batch: WG980149-2 SRM Lot Number: D091-540					
Mercury, Total	104	-	72-128	-	30

**Matrix Spike Analysis**  
**Batch Quality Control**

**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1705147  
**Report Date:** 02/23/17

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	MSD Qual	MSD Found	MSD %Recovery	MSD Qual	Recovery Limits	RPD RPD	Qual Qual	RPD Limits
<b>MCP Total Metals - Mansfield Lab Associated sample(s): 02,06 QC Batch ID: WG980148-4 WG980148-5 QC Sample: L1705147-02 Client ID: VES-124 (3-5)</b>												
Arsenic, Total	11	11.3	20	80		22	97		75-125	10		35
Barium, Total	140	188	280	74	Q	310	90		75-125	10		35
Cadmium, Total	0.72	4.8	4.4	77		4.5	78		75-125	2		35
Chromium, Total	83	18.8	190	568	Q	130	248	Q	75-125	38	Q	35
Lead, Total	1800	48	940	0	Q	8600	14100	Q	75-125	161	Q	35
Selenium, Total	ND	11.3	9.9	88		10	88		75-125	1		35
Silver, Total	0.77	28.2	25	86		23	78		75-125	8		35
<b>MCP Total Metals - Mansfield Lab Associated sample(s): 02,06 QC Batch ID: WG980148-7 WG980148-8 QC Sample: L1705147-06 Client ID: VES-112 (1-2)</b>												
Arsenic, Total	4.6	9.7	13	86		13	83		75-125	0		35
Barium, Total	23	162	150	78		160	82		75-125	6		35
Cadmium, Total	ND	4.12	3.4	82		3.4	79		75-125	0		35
Chromium, Total	26	16.2	35	56	Q	34	48	Q	75-125	3		35
Lead, Total	49	41.2	76	65	Q	88	91		75-125	15		35
Selenium, Total	ND	9.7	8.4	86		8.3	82		75-125	1		35
Silver, Total	ND	24.2	21	86		16	64	Q	75-125	27		35
<b>MCP Total Metals - Mansfield Lab Associated sample(s): 02,06 QC Batch ID: WG980149-3 WG980149-4 QC Sample: L1705147-02 Client ID: VES-124 (3-5)</b>												
Mercury, Total	1.25	0.186	1.48	123		1.18	0	Q	75-125	23		35

**Matrix Spike Analysis**  
**Batch Quality Control**

**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1705147  
**Report Date:** 02/23/17

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	MSD Found	MSD %Recovery	Recovery Limits	RPD	RPD Limits	
MCP Total Metals - Mansfield Lab Associated sample(s): 02,06 QC Batch ID: WG980149-5 WG980149-6 QC Sample: L1705147-06 Client ID: VES-112 (1-2)										
Mercury, Total	0.099	0.153	0.391	191	Q	0.299	125	75-125	27	35

**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Serial Dilution  
Analysis  
Batch Quality Control**

**Lab Number:** L1705147  
**Report Date:** 02/23/17

Parameter	Native Sample	Serial Dilution	Units	% D	Qual	RPD Limits
MCP Total Metals - Mansfield Lab Associated sample(s): 02,06 QC Batch ID: WG980148-6 QC Sample: L1705147-02 Client ID: VES-124 (3-5)						
Barium, Total	140	160	mg/kg	14	Q	10
Chromium, Total	83	100	mg/kg	20	Q	10
MCP Total Metals - Mansfield Lab Associated sample(s): 02,06 QC Batch ID: WG980148-6 QC Sample: L1705147-02 Client ID: VES-124 (3-5)						
Lead, Total	1800	1400	mg/kg	22	Q	10
MCP Total Metals - Mansfield Lab Associated sample(s): 02,06 QC Batch ID: WG980148-9 QC Sample: L1705147-06 Client ID: VES-112 (1-2)						
Barium, Total	23	25	mg/kg	9		10
Chromium, Total	26	31	mg/kg	19	Q	10

# **INORGANICS & MISCELLANEOUS**



**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1705147  
**Report Date:** 02/23/17

## SAMPLE RESULTS

Lab ID: L1705147-02  
Client ID: VES-124 (3-5)  
Sample Location: E. BOSTON  
Matrix: Soil

Date Collected: 02/17/17 10:35  
Date Received: 02/17/17  
Field Prep: Not Specified

### Test Material Information

Source of Material: Unknown  
Description of Material: Non-Metallic - Damp Soil  
Particle Size: Medium  
Preliminary Burning Time (sec): 120

Parameter	Result	Date Analyzed	Analytical Method	Analyst
Ignitability of Solids - Westborough Lab				
Ignitability	NI	02/19/17 14:27	1,1030	JC



**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1705147  
**Report Date:** 02/23/17

## SAMPLE RESULTS

Lab ID: L1705147-03  
Client ID: VES-124 (18-20)  
Sample Location: E. BOSTON  
Matrix: Soil

Date Collected: 02/17/17 10:40  
Date Received: 02/17/17  
Field Prep: Not Specified

### Test Material Information

Source of Material: Unknown  
Description of Material: Non-Metallic - Wet Sand  
Particle Size: Fine  
Preliminary Burning Time (sec): 120

Parameter	Result	Date Analyzed	Analytical Method	Analyst
Ignitability of Solids - Westborough Lab				
Ignitability	NI	02/19/17 14:27	1,1030	JC



**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1705147  
**Report Date:** 02/23/17

## SAMPLE RESULTS

Lab ID: L1705147-04  
Client ID: VES-116 (2-4)  
Sample Location: E. BOSTON  
Matrix: Soil

Date Collected: 02/17/17 09:45  
Date Received: 02/17/17  
Field Prep: Not Specified

### Test Material Information

Source of Material: Unknown  
Description of Material: Non-Metallic - Damp Soil  
Particle Size: Medium  
Preliminary Burning Time (sec): 120

Parameter	Result	Date Analyzed	Analytical Method	Analyst
Ignitability of Solids - Westborough Lab				
Ignitability	NI	02/19/17 14:27	1,1030	JC



**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1705147  
**Report Date:** 02/23/17

## SAMPLE RESULTS

Lab ID: L1705147-06  
Client ID: VES-112 (1-2)  
Sample Location: E. BOSTON  
Matrix: Soil

Date Collected: 02/17/17 09:35  
Date Received: 02/17/17  
Field Prep: Not Specified

### Test Material Information

Source of Material: Unknown  
Description of Material: Non-Metallic - Damp Soil  
Particle Size: Medium  
Preliminary Burning Time (sec): 120

Parameter	Result	Date Analyzed	Analytical Method	Analyst
Ignitability of Solids - Westborough Lab				
Ignitability	NI	02/19/17 14:27	1,1030	JC



**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1705147  
**Report Date:** 02/23/17

### SAMPLE RESULTS

Lab ID: L1705147-01  
Client ID: VES-124 (0-2)  
Sample Location: E. BOSTON  
Matrix: Soil

Date Collected: 02/17/17 10:30  
Date Received: 02/17/17  
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>General Chemistry - Westborough Lab</b>										
Solids, Total	92.5		%	0.100	NA	1	-	02/18/17 16:14	121,2540G	RI



**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1705147  
**Report Date:** 02/23/17

### SAMPLE RESULTS

Lab ID: L1705147-02  
Client ID: VES-124 (3-5)  
Sample Location: E. BOSTON  
Matrix: Soil

Date Collected: 02/17/17 10:35  
Date Received: 02/17/17  
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>General Chemistry - Westborough Lab</b>										
Specific Conductance @ 25 C	36		umhos/cm	10	--	1	-	02/17/17 22:56	1,9050A	AS
Solids, Total	84.0	%		0.100	NA	1	-	02/18/17 16:14	121,2540G	RI
pH (H)	7.4	SU		-	NA	1	-	02/17/17 21:20	1,9045D	AS
Cyanide, Reactive	ND		mg/kg	10	--	1	02/20/17 20:25	02/20/17 22:08	1,7.3	TL
Sulfide, Reactive	ND		mg/kg	10	--	1	02/20/17 20:25	02/20/17 22:01	1,7.3	TL



**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1705147  
**Report Date:** 02/23/17

### SAMPLE RESULTS

Lab ID: L1705147-03  
Client ID: VES-124 (18-20)  
Sample Location: E. BOSTON  
Matrix: Soil

Date Collected: 02/17/17 10:40  
Date Received: 02/17/17  
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>General Chemistry - Westborough Lab</b>										
Specific Conductance @ 25 C	ND		umhos/cm	10	--	1	-	02/17/17 22:56	1,9050A	AS
Solids, Total	78.2	%		0.100	NA	1	-	02/18/17 16:14	121,2540G	RI
pH (H)	8.2	SU		-	NA	1	-	02/17/17 21:20	1,9045D	AS
Cyanide, Reactive	ND		mg/kg	10	--	1	02/20/17 20:25	02/20/17 22:08	1,7.3	TL
Sulfide, Reactive	ND		mg/kg	10	--	1	02/20/17 20:25	02/20/17 22:01	1,7.3	TL



**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1705147  
**Report Date:** 02/23/17

### SAMPLE RESULTS

Lab ID: L1705147-04  
Client ID: VES-116 (2-4)  
Sample Location: E. BOSTON  
Matrix: Soil

Date Collected: 02/17/17 09:45  
Date Received: 02/17/17  
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>General Chemistry - Westborough Lab</b>										
Specific Conductance @ 25 C	21		umhos/cm	10	--	1	-	02/17/17 22:56	1,9050A	AS
Solids, Total	92.9	%		0.100	NA	1	-	02/18/17 16:14	121,2540G	RI
pH (H)	7.6	SU		-	NA	1	-	02/17/17 21:20	1,9045D	AS
Cyanide, Reactive	ND		mg/kg	10	--	1	02/20/17 20:25	02/20/17 22:08	1,7.3	TL
Sulfide, Reactive	ND		mg/kg	10	--	1	02/20/17 20:25	02/20/17 22:01	1,7.3	TL



**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1705147  
**Report Date:** 02/23/17

### SAMPLE RESULTS

Lab ID: L1705147-05  
Client ID: VES-112 (0-1)  
Sample Location: E. BOSTON  
Matrix: Soil

Date Collected: 02/17/17 09:30  
Date Received: 02/17/17  
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>General Chemistry - Westborough Lab</b>										
Solids, Total	94.2		%	0.100	NA	1	-	02/18/17 16:14	121,2540G	RI



**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1705147  
**Report Date:** 02/23/17

### SAMPLE RESULTS

Lab ID: L1705147-06  
Client ID: VES-112 (1-2)  
Sample Location: E. BOSTON  
Matrix: Soil

Date Collected: 02/17/17 09:35  
Date Received: 02/17/17  
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>General Chemistry - Westborough Lab</b>										
Specific Conductance @ 25 C	13		umhos/cm	10	--	1	-	02/17/17 22:56	1,9050A	AS
Solids, Total	94.2	%		0.100	NA	1	-	02/18/17 16:14	121,2540G	RI
pH (H)	7.3	SU		-	NA	1	-	02/17/17 21:20	1,9045D	AS
Cyanide, Reactive	ND		mg/kg	10	--	1	02/20/17 20:25	02/20/17 22:09	1,7.3	TL
Sulfide, Reactive	ND		mg/kg	10	--	1	02/20/17 20:25	02/20/17 22:01	1,7.3	TL



**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1705147  
**Report Date:** 02/23/17

**Method Blank Analysis**  
**Batch Quality Control**

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab for sample(s): 02-04,06 Batch: WG979431-1									
Cyanide, Reactive	ND	mg/kg	10	--	1	02/20/17 20:25	02/20/17 22:05	1,7.3	TL
General Chemistry - Westborough Lab for sample(s): 02-04,06 Batch: WG979432-1									
Sulfide, Reactive	ND	mg/kg	10	--	1	02/20/17 20:25	02/20/17 21:57	1,7.3	TL



# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1705147  
**Report Date:** 02/23/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 02-04,06 Batch: WG978940-1								
pH	100	-	-	-	99-101	-	-	-
General Chemistry - Westborough Lab Associated sample(s): 02-04,06 Batch: WG978941-1								
Specific Conductance	100	-	-	-	99-101	-	-	-
General Chemistry - Westborough Lab Associated sample(s): 02-04,06 Batch: WG979431-2								
Cyanide, Reactive	72	-	-	-	30-125	-	-	40
General Chemistry - Westborough Lab Associated sample(s): 02-04,06 Batch: WG979432-2								
Sulfide, Reactive	105	-	-	-	60-125	-	-	40

**Lab Duplicate Analysis**  
Batch Quality Control

**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1705147  
**Report Date:** 02/23/17

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 02-04,06 QC Batch ID: WG979431-3 QC Sample: L1705147-02 Client ID: VES-124 (3-5)						
Cyanide, Reactive	ND	ND	mg/kg	NC		40
General Chemistry - Westborough Lab Associated sample(s): 02-04,06 QC Batch ID: WG979432-3 QC Sample: L1705147-02 Client ID: VES-124 (3-5)						
Sulfide, Reactive	ND	ND	mg/kg	NC		40

**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1705147  
**Report Date:** 02/23/17

### Sample Receipt and Container Information

Were project specific reporting limits specified? YES

**Reagent H2O Preserved Vials Frozen on:** 02/17/2017 20:37

#### Cooler Information Custody Seal

##### Cooler

A Absent

#### Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L1705147-01A	Glass 120ml/4oz unpreserved	A	N/A	2.4	Y	Absent	MCP-8081-10(14),TS(7)
L1705147-02A	Vial MeOH preserved	A	N/A	2.4	Y	Absent	VPH-10(28),MCP-8260HLW-10(14)
L1705147-02B	Vial water preserved	A	N/A	2.4	Y	Absent	MCP-8260HLW-10(14)
L1705147-02C	Vial water preserved	A	N/A	2.4	Y	Absent	MCP-8260HLW-10(14)
L1705147-02D	Glass 500ml/16oz unpreserved	A	N/A	2.4	Y	Absent	IGNIT-1030(14),REACTS(14),MCP-8270-10(14),TS(7),MCP-8082-10-3540C(365),PH-9045(1),REACTCN(14),COND-9050(28),EPH-DELUX-10(14)
L1705147-02E	Metals Only - Glass 60mL/2oz unp	A	N/A	2.4	Y	Absent	MCP-CR-6010T-10(180),MCP-AS-6010T-10(180),MCP-7471T-10(28),MCP-CD-6010T-10(180),MCP-AG-6010T-10(180),MCP-SE-6010T-10(180),MCP-BA-6010T-10(180),MCP-PB-6010T-10(180)
L1705147-03A	Vial MeOH preserved	A	N/A	2.4	Y	Absent	VPH-10(28),MCP-8260HLW-10(14)
L1705147-03B	Vial water preserved	A	N/A	2.4	Y	Absent	MCP-8260HLW-10(14)
L1705147-03C	Vial water preserved	A	N/A	2.4	Y	Absent	MCP-8260HLW-10(14)
L1705147-03D	Glass 500ml/16oz unpreserved	A	N/A	2.4	Y	Absent	IGNIT-1030(14),REACTS(14),MCP-8270-10(14),TS(7),MCP-8082-10-3540C(365),PH-9045(1),REACTCN(14),COND-9050(28),EPH-DELUX-10(14)
L1705147-03E	Metals Only - Glass 60mL/2oz unp	A	N/A	2.4	Y	Absent	MCP-CR-6010T-10(180),MCP-AS-6010T-10(180),MCP-7471T-10(28),MCP-CD-6010T-10(180),MCP-AG-6010T-10(180),MCP-SE-6010T-10(180),MCP-BA-6010T-10(180),MCP-PB-6010T-10(180)
L1705147-04A	Vial MeOH preserved	A	N/A	2.4	Y	Absent	VPH-10(28),MCP-8260HLW-10(14)

\*Values in parentheses indicate holding time in days

**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1705147  
**Report Date:** 02/23/17

**Container Information**

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L1705147-04B	Vial water preserved	A	N/A	2.4	Y	Absent	MCP-8260HLW-10(14)
L1705147-04C	Vial water preserved	A	N/A	2.4	Y	Absent	MCP-8260HLW-10(14)
L1705147-04D	Glass 500ml/16oz unpreserved	A	N/A	2.4	Y	Absent	IGNIT-1030(14),REACTS(14),MCP-8270-10(14),TS(7),MCP-8082-10-3540C(365),PH-9045(1),REACTCN(14),COND-9050(28),EPH-DELUX-10(14)
L1705147-04E	Metals Only - Glass 60mL/2oz unp	A	N/A	2.4	Y	Absent	MCP-CR-6010T-10(180),MCP-AS-6010T-10(180),MCP-7471T-10(28),MCP-CD-6010T-10(180),MCP-AG-6010T-10(180),MCP-SE-6010T-10(180),MCP-BA-6010T-10(180),MCP-PB-6010T-10(180)
L1705147-05A	Glass 120ml/4oz unpreserved	A	N/A	2.4	Y	Absent	MCP-8081-10(14),TS(7)
L1705147-06A	Vial MeOH preserved	A	N/A	2.4	Y	Absent	VPH-10(28),MCP-8260HLW-10(14)
L1705147-06B	Vial water preserved	A	N/A	2.4	Y	Absent	MCP-8260HLW-10(14)
L1705147-06C	Vial water preserved	A	N/A	2.4	Y	Absent	MCP-8260HLW-10(14)
L1705147-06D	Glass 500ml/16oz unpreserved	A	N/A	2.4	Y	Absent	IGNIT-1030(14),REACTS(14),MCP-8270-10(14),TS(7),MCP-8082-10-3540C(365),PH-9045(1),REACTCN(14),COND-9050(28),EPH-DELUX-10(14)
L1705147-06E	Metals Only - Glass 60mL/2oz unp	A	N/A	2.4	Y	Absent	MCP-CR-6010T-10(180),MCP-AS-6010T-10(180),MCP-7471T-10(28),MCP-CD-6010T-10(180),MCP-AG-6010T-10(180),MCP-SE-6010T-10(180),MCP-BA-6010T-10(180),MCP-PB-6010T-10(180)

\*Values in parentheses indicate holding time in days

**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1705147  
**Report Date:** 02/23/17

## GLOSSARY

### **Acronyms**

EDL	- Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).
EPA	- Environmental Protection Agency.
LCS	- Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCSD	- Laboratory Control Sample Duplicate: Refer to LCS.
LFB	- Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
MDL	- Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
MS	- Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available.
MSD	- Matrix Spike Sample Duplicate: Refer to MS.
NA	- Not Applicable.
NC	- Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
NDPA/DPA	- N-Nitrosodiphenylamine/Diphenylamine.
NI	- Not Ignitable.
NP	- Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.
RL	- Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
RPD	- Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.
SRM	- Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.
STLP	- Semi-dynamic Tank Leaching Procedure per EPA Method 1315.
TIC	- Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

### **Footnotes**

- 1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

### **Terms**

**Total:** With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

**Analytical Method:** Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

### **Data Qualifiers**

- A** - Spectra identified as "Aldol Condensation Product".
- B** - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the

**Report Format:** Data Usability Report



**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1705147  
**Report Date:** 02/23/17

**Data Qualifiers**

reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

- C** - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.
- D** - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.
- E** - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.
- G** - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.
- H** - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.
- I** - The lower value for the two columns has been reported due to obvious interference.
- M** - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.
- NJ** - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.
- P** - The RPD between the results for the two columns exceeds the method-specified criteria.
- Q** - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)
- R** - Analytical results are from sample re-analysis.
- RE** - Analytical results are from sample re-extraction.
- S** - Analytical results are from modified screening analysis.
- J** - Estimated value. This represents an estimated concentration for Tentatively Identified Compounds (TICs).
- ND** - Not detected at the reporting limit (RL) for the sample.

*Report Format:* Data Usability Report



**Project Name:** E. BOSTON  
**Project Number:** 43068

**Lab Number:** L1705147  
**Report Date:** 02/23/17

## REFERENCES

- 1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - IV, 2007.
- 97 EPA Test Methods (SW-846) with QC Requirements & Performance Standards for the Analysis of EPA SW-846 Methods under the Massachusetts Contingency Plan, WSC-CAM-IIA, IIB, IIIA, IIIB, IIIC, IID, VA, VB, VC, VIA, VIB, VIIIA and VIIIB, July 2010.
- 98 Method for the Determination of Extractable Petroleum Hydrocarbons (EPH), MassDEP, May 2004, Revision 1.1 with QC Requirements & Performance Standards for the Analysis of EPH under the Massachusetts Contingency Plan, WSC-CAM-IVB, July 2010.
- 100 Method for the Determination of Volatile Petroleum Hydrocarbons (VPH), MassDEP, May 2004, Revision 1.1 with QC Requirements & Performance Standards for the Analysis of VPH under the Massachusetts Contingency Plan, WSC-CAM-IVA, July 2010.
- 121 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. Standard Methods Online.

## LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at its own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.



## Certification Information

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**The following analytes are not included in our Primary NELAP Scope of Accreditation:**

**Westborough Facility**

EPA 624: m/p-xylene, o-xylene  
EPA 8260C: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), Methyl methacrylate, 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.  
EPA 8270D: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.  
EPA 300: DW: Bromide  
EPA 6860: NPW and SCM: Perchlorate  
EPA 9010: NPW and SCM: Amenable Cyanide Distillation  
EPA 9012B: NPW: Total Cyanide  
EPA 9050A: NPW: Specific Conductance  
SM3500: NPW: Ferrous Iron  
SM4500: NPW: Amenable Cyanide, Dissolved Oxygen; SCM: Total Phosphorus, TKN, NO<sub>2</sub>, NO<sub>3</sub>.  
SM5310C: DW: Dissolved Organic Carbon

**Mansfield Facility**

SM 2540D: TSS  
EPA 3005A NPW  
EPA 8082A: NPW: PCB: 1, 5, 31, 87, 101, 110, 141, 151, 153, 180, 183, 187.  
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.  
Biological Tissue Matrix: EPA 3050B

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**The following analytes are included in our Massachusetts DEP Scope of Accreditation**

**Westborough Facility:**

**Drinking Water**

EPA 300.0: Nitrate-N, Fluoride, Sulfate; EPA 353.2: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C**, **SM4500CN-CE**, **EPA 180.1**, **SM2130B**, **SM4500CI-D**, **SM2320B**, **SM2540C**, **SM4500H-B**  
EPA 332: Perchlorate; EPA 524.2: THMs and VOCs; EPA 504.1: EDB, DBCP.  
Microbiology: **SM9215B**; **SM9223-P/A**, **SM9223B-Colilert-QT**,**SM9222D**.

**Non-Potable Water**

**SM4500H,B**, **EPA 120.1**, **SM2510B**, **SM2540C**, **SM2320B**, **SM4500CL-E**, **SM4500F-BC**, **SM4500NH3-BH**, **EPA 350.1**: Ammonia-N, LACHAT 10-107-06-1-B: Ammonia-N, **SM4500NO3-F**, **EPA 353.2**: Nitrate-N, **EPA 351.1**, **SM4500P-E**, **SM4500P-B**, **E**, **SM4500SO4-E**, **SM5220D**, **EPA 410.4**, **SM5210B**, **SM5310C**, **SM4500CL-D**, **EPA 1664**, **EPA 420.1**, **SM4500-CN-CE**, **SM2540D**.  
**EPA 624**: Volatile Halocarbons & Aromatics,  
**EPA 608**: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs  
**EPA 625**: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045**: PCB-Oil.  
Microbiology: **SM9223B-Colilert-QT**; **Enterolert-QT**, **SM9221E**.

**Mansfield Facility:**

**Drinking Water**

**EPA 200.7**: Ba, Be, Cd, Cr, Cu, Ni, Na, Ca. **EPA 200.8**: Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Ni, Se, TL. **EPA 245.1 Hg**.

**Non-Potable Water**

**EPA 200.7**: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.  
**EPA 200.8**: Al, Sb, As, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn.  
**EPA 245.1 Hg**.  
**SM2340B**

---

For a complete listing of analytes and methods, please contact your Alpha Project Manager.



## CHAIN OF CUSTODY

PAGE \_\_\_\_\_ OF \_\_\_\_\_

Date Rec'd in Lab: 02/17/17

ALPHA Job #: L1705147

 8 Walkup Drive  
 Westboro, MA 01581  
 Tel: 508-898-9220

 320 Forbes Blvd  
 Mansfield, MA 02048  
 Tel: 508-822-9300

## Client Information

Client: VERTEX

Address: one Congress St, 10th Flr  
Boston MA

Phone: 781-974-7595

Email: bsilvonen@vertexeng.com

## Additional Project Information:

## Project Information

Project Name: E. Boston

Project Location: E. Boston

Project #: 43068

Project Manager: B. Gibbons

ALPHA Quote #:

## Turn-Around Time

 Standard

RUSH (only confirmed if pre-approved!)

Date Due:

72-hour

## Report Information - Data Deliverables

 ADEX EMAIL

## Billing Information

 Same as Client info

PO #:

## Regulatory Requirements &amp; Project Information Requirements

- Yes  No MA MCP Analytical Methods       Yes  No CT RCP Analytical Methods  
 Yes  No Matrix Spike Required on this SDG? (Required for MCP Inorganics)  
 Yes  No GW1 Standards (Info Required for Metals & EPH with Targets)  
 Yes  No NPDES RGP  
 Other State /Fed Program

Criteria

ANALYSIS	Criteria										TOTAL #
	VOC: 48260	624	524.2	PAH	8270	MCP 14	RCP 15	PP13	Ranges Only	Ranges Only	
METALS: 48260	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	5				
SVOC: ABN	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	5				
PCB: RCR45	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	5
TPH: Ranges & Targets	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	5
EPH: Ranges & Targets	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	5
PCB: Quant Only	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	5
PCB: Fingerprint	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	5
PCB: TPH	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	5
PCB: Quadrupole	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	5
PCB: Ion	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	5
PCB: GC/MS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	5
PCB: LC/MS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	5

## Filtration

- 
- Field
- 
- 
- Lab to do

## Preservation

- 
- Lab to do

## Sample Comments

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection	Sample Matrix	Sampler Initials
		Date		
05147-01	VES-124 (0-2)	2/17	10:30	S BS
02	VES-124 (3-5)		10:35	S BS
03	VES-124 (18-20)		10:40	S BS
04	VES-116 (2-4)		9:45	S BS
05	VES-112 (0-1)	2/17	9:30	S KS
06	VES-112 (4-2)	2/17	9:35	S KS

 Container Type  
 P= Plastic  
 A= Amber glass  
 V= Vial  
 G= Glass  
 B= Bacteria cup  
 C= Cube  
 O= Other  
 E= Encore  
 D= BOD Bottle

 Preservative  
 A= None  
 B= HCl  
 C= HNO3  
 D= H2SO4  
 E= NaOH  
 F= MeOH  
 G= NaHSO4  
 H= Na2S2O3  
 I= Ascorbic Acid  
 J= NH4Cl  
 K= Zn Acetate  
 O= Other

Container Type	V	A	A	A	V/A	A	A
Preservative	F	A	A	A	F/A	A	A

Relinquished By:

Date/Time

Received By:

Date/Time

 All samples submitted are subject to  
 Alpha's Terms and Conditions.  
 See reverse side.

FORM NO 01-01 (rev. 12-Mar-2012)



## CHAIN OF CUSTODY

PAGE \_\_\_\_ OF \_\_\_\_

Date Rec'd in Lab: 02/17/17

ALPHA Job #: L1705147

8 Walkup Drive  
Westboro, MA 01581  
Tel: 508-898-9220

320 Forbes Blvd  
Mansfield, MA 02048  
Tel: 508-822-9300

## Client Information

Client: VERTEX

Address: one Congress St, 10th Flr  
Boston MA

Phone: 781-974-7595

Email: bsilvonen@vertexeng.com

## Additional Project Information:

## Project Information

Project Name: E. Boston

Project Location: E. Boston

Project #: 43068

Project Manager: B. Gibbons

ALPHA Quote #:

## Turn-Around Time

 Standard

RUSH (only confirmed if pre-approved!)

Date Due:

2-hour

## Report Information - Data Deliverables

 ADEX EMAIL

## Billing Information

 Same as Client info

PO #:

## Regulatory Requirements &amp; Project Information Requirements

- Yes  No MA MCP Analytical Methods       Yes  No CT RCP Analytical Methods  
 Yes  No Matrix Spike Required on this SDG? (Required for MCP Inorganics)  
 Yes  No GW1 Standards (Info Required for Metals & EPH with Targets)  
 Yes  No NPDES RGP  
 Other State /Fed Program \_\_\_\_\_ Criteria

ANALYSIS	Criteria										TOTAL #
	VOC: <input checked="" type="checkbox"/> 68260 <input type="checkbox"/> 624 <input type="checkbox"/> 524.2	METALS: <input type="checkbox"/> MCP 13 <input checked="" type="checkbox"/> PAH <input checked="" type="checkbox"/> 8270	EPH: <input type="checkbox"/> RCR45 <input checked="" type="checkbox"/> RCR48 <input type="checkbox"/> RCP 15	IPH: <input type="checkbox"/> Ranges & Targets <input type="checkbox"/> Ranges Only	TPH: <input type="checkbox"/> PCB <input type="checkbox"/> Quant Only <input type="checkbox"/> Fingerprint	PCB: <input type="checkbox"/> PCB <input checked="" type="checkbox"/> 8083 <input type="checkbox"/> Solvent	SPC: <input type="checkbox"/> PTH <input checked="" type="checkbox"/> TPH <input type="checkbox"/> Quinidine/Quinifide Reage				
VOC: <input checked="" type="checkbox"/> 68260 <input type="checkbox"/> 624 <input type="checkbox"/> 524.2	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	1
METALS: <input type="checkbox"/> MCP 13 <input checked="" type="checkbox"/> PAH <input checked="" type="checkbox"/> 8270	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	5
EPH: <input type="checkbox"/> RCR45 <input checked="" type="checkbox"/> RCR48 <input type="checkbox"/> RCP 15	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	5
IPH: <input type="checkbox"/> Ranges & Targets <input type="checkbox"/> Ranges Only	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	5
TPH: <input type="checkbox"/> PCB <input type="checkbox"/> Quant Only <input type="checkbox"/> Fingerprint	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	5
PCB: <input type="checkbox"/> PCB <input checked="" type="checkbox"/> 8083 <input type="checkbox"/> Solvent	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	5
SPC: <input type="checkbox"/> PTH <input checked="" type="checkbox"/> TPH <input type="checkbox"/> Quinidine/Quinifide Reage	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	5

## SAMPLE INFO

- Filtration  
 Field  
 Lab to do

- Preservation  
 Lab to do

## Sample Comments

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler Initials						
05147-01	VES-124 (0-2)	2/17	10:30	S	BS					X	
02	VES-124 (3-5)		10:35	S	BS	X	X	X	X	X	
03	VES-124 (18-20)		10:40	S	BS	X	X	X	X	X	
04	VES-116 (2-4)		9:45	S	BS	X	X	X	X	X	
05	VES-112 (0-1)	2/17	9:30	S	KS				X		1
06	VES-112 (4-2)	2/17	9:35	S	KS	X	X	X	X	X	5

Container Type  
P= Plastic  
A= Amber glass  
V= Vial  
G= Glass  
B= Bacteria cup  
C= Cube  
O= Other  
E= Encore  
D= BOD Bottle

Preservative  
A= None  
B= HCl  
C= HNO<sub>3</sub>  
D= H<sub>2</sub>SO<sub>4</sub>  
E= NaOH  
F= MeOH  
G= NaHSO<sub>4</sub>  
H= Na<sub>2</sub>S<sub>2</sub>O<sub>3</sub>  
I= Ascorbic Acid  
J= NH<sub>4</sub>Cl  
K= Zn Acetate  
O= Other

Container Type	V	A	A	A	V/A	A	A
Preservative	F	A	A	A	F/A	A	A

Relinquished By:   
Date/Time: 2/17/17 15:45 MSCW  
Received By:   
Date/Time: 2/17/17 15:45 MSCW

All samples submitted are subject to  
Alpha's Terms and Conditions.  
See reverse side.

FORM NO 01-01 (rev. 12-Mar-2012)

**Method Blank Summary  
Form 4**

Client	: Vertex Environmental Services, Inc.	Lab Number	: L1705147
Project Name	: E. BOSTON	Project Number	: 43068
Lab Sample ID	: WG979472-5	Lab File ID	: V17170220A05
Instrument ID	: VOA117		
Matrix	: SOIL	Analysis Date	: 02/20/17 09:19

Client Sample No.	Lab Sample ID	Analysis Date
WG979472-3LCS	WG979472-3	02/20/17 07:34
WG979472-4LCSD	WG979472-4	02/20/17 08:00
VES-124 (18-20)	L1705147-03	02/20/17 11:56
VES-112 (1-2)	L1705147-06	02/20/17 12:48

## Method Blank Summary Form 4

Client : Vertex Environmental Services, Inc.      Lab Number : L1705147  
Project Name : E. BOSTON      Project Number : 43068  
Lab Sample ID : WG979787-5      Lab File ID : V11170221A05  
Instrument ID : VOA111  
Matrix : SOIL      Analysis Date : 02/21/17 10:00

Client Sample No.	Lab Sample ID	Analysis Date
WG979787-3LCS	WG979787-3	02/21/17 08:43
WG979787-4LCSD	WG979787-4	02/21/17 09:09
VES-116 (2-4)	L1705147-04	02/21/17 15:06
VES-124 (3-5)	L1705147-02	02/21/17 15:32

**Continuing Calibration  
Form 7**

Client	: Vertex Environmental Services, Inc.	Lab Number	: L1705147
Project Name	: E. BOSTON	Project Number	: 43068
Instrument ID	: VOA117	Calibration Date	: 02/20/17 07:34
Lab File ID	: V17170220A01	Init. Calib. Date(s)	: 02/13/17
Sample No	: WG979472-2	Init. Calib. Times	: 17:04
Channel	:		02/13/17 20:07

Compound	Ave. RRF	RRF	Min RRF	%D	Max %D	Area%	Dev(min)
Fluorobenzene	1	1	-	0	20	76	0
Dichlorodifluoromethane	0.414	0.361	-	12.8	20	71	0
Chloromethane	0.463	0.428	-	7.6	20	74	0
Vinyl chloride	0.505	0.542	-	-7.3	20	84	0
Bromomethane	20	22.992	-	-15	20	90	0
Chloroethane	0.263	0.275	-	-4.6	20	84	0
Trichlorofluoromethane	0.627	0.688	-	-9.7	20	86	0
Ethyl ether	0.167	0.137	-	18	20	64	0
1,1-Dichloroethene	0.329	0.304	-	7.6	20	74	0
Carbon disulfide	1.159	1.03	-	11.1	20	72	0
Methylene chloride	0.349	0.37	-	-6	20	84	0
Acetone	0.078	0.07	-	10.3	20	64	0
trans-1,2-Dichloroethene	0.349	0.327	-	6.3	20	73	0
Methyl tert-butyl ether	0.878	0.708	-	19.4	20	62	0
Diisopropyl ether	1.233	1.057	-	14.3	20	67	0
1,1-Dichloroethane	0.72	0.655	-	9	20	71	0
Ethyl tert-butyl ether	1.151	0.956	-	16.9	20	65	0
cis-1,2-Dichloroethene	0.378	0.34	-	10.1	20	70	0
2,2-Dichloropropane	0.558	0.497	-	10.9	20	70	0
Bromochloromethane	0.166	0.148	-	10.8	20	67	0
Chloroform	0.659	0.587	-	10.9	20	69	0
Carbon tetrachloride	0.507	0.464	-	8.5	20	73	0
Tetrahydrofuran	0.084	0.058	-	31*	20	52	0
Dibromofluoromethane	0.265	0.256	-	3.4	20	74	0
1,1,1-Trichloroethane	0.601	0.547	-	9	20	71	0
2-Butanone	0.123	0.09	-	26.8*	20	52	-.01
1,1-Dichloropropene	0.501	0.461	-	8	20	72	0
Benzene	1.399	1.279	-	8.6	20	71	0
tert-Amyl methyl ether	0.823	0.667	-	19	20	63	0
1,2-Dichloroethane-d4	0.284	0.251	-	11.6	20	68	0
1,2-Dichloroethane	0.489	0.411	-	16	20	65	0
Trichloroethene	0.413	0.374	-	9.4	20	71	0
Dibromomethane	0.203	0.167	-	17.7	20	63	0
1,2-Dichloropropane	0.419	0.371	-	11.5	20	69	0
Bromodichloromethane	0.468	0.399	-	14.7	20	66	0
1,4-Dioxane	0.00245	0.00177	-	27.8*	20	54	0
cis-1,3-Dichloropropene	0.543	0.459	-	15.5	20	66	0
Chlorobenzene-d5	1	1	-	0	20	80	0
Toluene-d8	1.322	1.291	-	2.3	20	77	0
Toluene	1.122	0.991	-	11.7	20	72	0
4-Methyl-2-pentanone	0.133	0.089	-	33.1*	20	52	0
Tetrachloroethene	0.519	0.474	-	8.7	20	74	0
trans-1,3-Dichloropropene	0.593	0.472	-	20.4*	20	64	0
1,1,2-Trichloroethane	0.311	0.251	-	19.3	20	64	0
Chlorodibromomethane	0.428	0.331	-	22.7*	20	63	0

\* Value outside of QC limits.



**Continuing Calibration  
Form 7**

Client	: Vertex Environmental Services, Inc.	Lab Number	: L1705147
Project Name	: E. BOSTON	Project Number	: 43068
Instrument ID	: VOA117	Calibration Date	: 02/20/17 07:34
Lab File ID	: V17170220A01	Init. Calib. Date(s)	: 02/13/17
Sample No	: WG979472-2	Init. Calib. Times	: 17:04
Channel	:		02/13/17 20:07

Compound	Ave. RRF	RRF	Min RRF	%D	Max %D	Area%	Dev(min)
1,3-Dichloropropane	0.549	0.445	-	18.9	20	65	0
1,2-Dibromoethane	0.342	0.266	-	22.2*	20	62	0
2-Hexanone	0.24	0.169	-	29.6*	20	51	0
Chlorobenzene	1.267	1.129	-	10.9	20	72	0
Ethylbenzene	2.299	2.052	-	10.7	20	73	0
1,1,1,2-Tetrachloroethane	0.45	0.381	-	15.3	20	69	0
p/m Xylene	0.865	0.778	-	10.1	20	73	0
o Xylene	0.814	0.725	-	10.9	20	72	0
Styrene	1.326	1.164	-	12.2	20	70	0
1,4-Dichlorobenzene-d4	1	1	-	0	20	84	0
Bromoform	0.531	0.372	-	29.9*	20	60	0
Isopropylbenzene	4.278	3.763	-	12	20	75	0
4-Bromofluorobenzene	0.968	0.91	-	6	20	78	0
Bromobenzene	1.035	0.887	-	14.3	20	72	0
n-Propylbenzene	5.236	4.605	-	12.1	20	75	0
1,1,2,2-Tetrachloroethane	0.809	0.598	-	26.1*	20	59	0
2-Chlorotoluene	3.055	2.596	-	15	20	73	0
1,3,5-Trimethylbenzene	3.75	3.272	-	12.7	20	74	0
1,2,3-Trichloropropane	0.664	0.496	-	25.3*	20	62	0
4-Chlorotoluene	3.141	2.686	-	14.5	20	73	0
tert-Butylbenzene	3.139	2.752	-	12.3	20	75	0
1,2,4-Trimethylbenzene	3.768	3.263	-	13.4	20	73	0
sec-Butylbenzene	4.748	4.228	-	11	20	75	0
p-Isopropyltoluene	3.955	3.509	-	11.3	20	75	0
1,3-Dichlorobenzene	2.046	1.779	-	13	20	74	0
1,4-Dichlorobenzene	2.018	1.747	-	13.4	20	73	0
n-Butylbenzene	4.011	3.607	-	10.1	20	76	0
1,2-Dichlorobenzene	1.854	1.572	-	15.2	20	71	0
1,2-Dibromo-3-chloropropan	0.117	0.079	-	32.5*	20	55	0
Hexachlorobutadiene	0.893	0.799	-	10.5	20	77	0
1,2,4-Trichlorobenzene	1.433	1.222	-	14.7	20	72	0
Naphthalene	2.715	1.993	-	26.6*	20	60	0
1,2,3-Trichlorobenzene	1.291	1.069	-	17.2	20	69	0

\* Value outside of QC limits.



**Continuing Calibration  
Form 7**

Client	: Vertex Environmental Services, Inc.	Lab Number	: L1705147
Project Name	: E. BOSTON	Project Number	: 43068
Instrument ID	: VOA111	Calibration Date	: 02/21/17 08:43
Lab File ID	: V11170221A02	Init. Calib. Date(s)	: 01/30/17
Sample No	: WG979787-2	Init. Calib. Times	: 01/31/17 00:38
Channel	:		

Compound	Ave. RRF	RRF	Min RRF	%D	Max %D	Area%	Dev(min)
Fluorobenzene	1	1	-	0	20	83	0
Dichlorodifluoromethane	0.292	0.277	-	5.1	20	80	0
Chloromethane	0.451	0.502	-	-11.3	20	93	0
Vinyl chloride	0.346	0.358	-	-3.5	20	87	0
Bromomethane	0.152	0.097	-	36.2*	20	55	0
Chloroethane	0.177	0.194	-	-9.6	20	84	0
Trichlorofluoromethane	0.361	0.414	-	-14.7	20	96	0
Ethyl ether	0.146	0.141	-	3.4	20	81	0
1,1-Dichloroethene	0.199	0.227	-	-14.1	20	96	0
Carbon disulfide	0.765	0.845	-	-10.5	20	96	0
Freon-113	0.18	0.21	-	-16.7	20	97	0
Acrolein	0.034	0.026	-	23.5*	20	54	0
Methylene chloride	0.264	0.308	-	-16.7	20	100	0
Acetone	0.106	0.106	-	0	20	78	0
trans-1,2-Dichloroethene	0.234	0.259	-	-10.7	20	91	0
Methyl acetate	0.222	0.208	-	6.3	20	84	0
Methyl tert-butyl ether	0.756	0.692	-	8.5	20	79	0
tert-Butyl alcohol	0.026	0.02	-	23.1*	20	68	0
Diisopropyl ether	1.413	1.474	-	-4.3	20	88	0
1,1-Dichloroethane	0.565	0.617	-	-9.2	20	92	0
Halothane	0.14	0.155	-	-10.7	20	94	0
Acrylonitrile	0.105	0.095	-	9.5	20	74	0
Ethyl tert-butyl ether	1.043	1.008	-	3.4	20	83	0
Vinyl acetate	0.941	0.771	-	18.1	20	69	0
cis-1,2-Dichloroethene	0.265	0.278	-	-4.9	20	87	0
2,2-Dichloropropane	0.39	0.419	-	-7.4	20	90	0
Bromochloromethane	0.114	0.112	-	1.8	20	82	0
Cyclohexane	0.523	0.642	-	-22.8*	20	104	0
Chloroform	0.478	0.499	-	-4.4	20	87	0
Ethyl acetate	0.342	0.303	-	11.4	20	76	0
Carbon tetrachloride	0.317	0.35	-	-10.4	20	92	0
Tetrahydrofuran	0.128	0.114	-	10.9	20	74	-0.1
Dibromofluoromethane	0.236	0.235	-	0.4	20	83	0
1,1,1-Trichloroethane	0.389	0.435	-	-11.8	20	92	0
2-Butanone	0.158	0.135	-	14.6	20	73	0
1,1-Dichloropropene	0.348	0.401	-	-15.2	20	95	0
Benzene	1.024	1.098	-	-7.2	20	91	0
tert-Amyl methyl ether	0.7	0.634	-	9.4	20	77	0
1,2-Dichloroethane-d4	0.321	0.291	-	9.3	20	77	0
1,2-Dichloroethane	0.45	0.431	-	4.2	20	79	0
Methyl cyclohexane	0.357	0.424	-	-18.8	20	100	0
Trichloroethene	0.257	0.282	-	-9.7	20	92	0
Dibromomethane	0.151	0.143	-	5.3	20	80	0
1,2-Dichloropropane	0.318	0.333	-	-4.7	20	88	0
2-Chloroethyl vinyl ether	0.161	0.071	-	55.9*	20	36	0

\* Value outside of QC limits.



**Continuing Calibration  
Form 7**

Client	: Vertex Environmental Services, Inc.	Lab Number	: L1705147
Project Name	: E. BOSTON	Project Number	: 43068
Instrument ID	: VOA111	Calibration Date	: 02/21/17 08:43
Lab File ID	: V11170221A02	Init. Calib. Date(s)	: 01/30/17
Sample No	: WG979787-2	Init. Calib. Times	: 21:39 01/31/17 00:38
Channel	:		

Compound	Ave. RRF	RRF	Min RRF	%D	Max %D	Area%	Dev(min)
Bromodichloromethane	0.365	0.363	-	0.5	20	84	0
1,4-Dioxane	0.00225	0.00166	-	26.2*	20	61	0
cis-1,3-Dichloropropene	0.432	0.42	-	2.8	20	83	0
Chlorobenzene-d5	1	1	-	0	20	89	0
Toluene-d8	1.352	1.327	-	1.8	20	87	0
Toluene	0.899	0.893	-	0.7	20	89	0
4-Methyl-2-pentanone	0.145	0.109	-	24.8*	20	72	0
Tetrachloroethene	0.327	0.347	-	-6.1	20	94	0
trans-1,3-Dichloropropene	0.548	0.481	-	12.2	20	80	0
Ethyl methacrylate	20	15.133	-	24.3*	20	74	0
1,1,2-Trichloroethane	0.261	0.231	-	11.5	20	78	0
Chlorodibromomethane	0.335	0.296	-	11.6	20	79	0
1,3-Dichloropropane	0.562	0.506	-	10	20	80	0
1,2-Dibromoethane	0.285	0.244	-	14.4	20	76	0
2-Hexanone	0.306	0.238	-	22.2*	20	71	0
Chlorobenzene	0.972	0.947	-	2.6	20	88	0
Ethylbenzene	1.74	1.741	-	-0.1	20	90	0
1,1,1,2-Tetrachloroethane	0.341	0.314	-	7.9	20	82	0
p/m Xylene	0.631	0.639	-	-1.3	20	90	0
o Xylene	0.603	0.59	-	2.2	20	87	0
Styrene	1.018	0.982	-	3.5	20	87	0
1,4-Dichlorobenzene-d4	1	1	-	0	20	90	0
Bromoform	0.412	0.335	-	18.7	20	74	0
Isopropylbenzene	3.309	3.385	-	-2.3	20	91	0
4-Bromofluorobenzene	1.064	1.071	-	-0.7	20	91	0
Bromobenzene	0.78	0.726	-	6.9	20	85	0
n-Propylbenzene	4.144	4.288	-	-3.5	20	92	0
1,4-Dichlorobutane	1.642	1.417	-	13.7	20	79	0
1,1,2,2-Tetrachloroethane	0.783	0.656	-	16.2	20	75	0
4-Ethyltoluene	3.249	3.318	-	-2.1	20	91	0
2-Chlorotoluene	2.943	2.928	-	0.5	20	89	0
1,3,5-Trimethylbenzene	2.832	2.896	-	-2.3	20	92	0
1,2,3-Trichloropropane	0.664	0.558	-	16	20	76	0
trans-1,4-Dichloro-2-butene	0.327	0.26	-	20.5*	20	72	0
4-Chlorotoluene	2.607	2.594	-	0.5	20	90	0
tert-Butylbenzene	2.294	2.352	-	-2.5	20	91	0
1,2,4-Trimethylbenzene	2.895	2.886	-	0.3	20	88	0
sec-Butylbenzene	3.577	3.765	-	-5.3	20	94	0
p-Isopropyltoluene	2.913	3.043	-	-4.5	20	92	0
1,3-Dichlorobenzene	1.545	1.489	-	3.6	20	86	0
1,4-Dichlorobenzene	1.555	1.476	-	5.1	20	87	0
p-Diethylbenzene	1.703	1.783	-	-4.7	20	93	0
n-Butylbenzene	2.973	3.217	-	-8.2	20	98	0
1,2-Dichlorobenzene	1.448	1.332	-	8	20	83	0
1,2,4,5-Tetramethylbenzene	2.748	2.766	-	-0.7	20	91	0

\* Value outside of QC limits.



# Continuing Calibration

## Form 7

Client	: Vertex Environmental Services, Inc.	Lab Number	: L1705147
Project Name	: E. BOSTON	Project Number	: 43068
Instrument ID	: VOA111	Calibration Date	: 02/21/17 08:43
Lab File ID	: V11170221A02	Init. Calib. Date(s)	: 01/30/17
Sample No	: WG979787-2	Init. Calib. Times	: 21:39 01/31/17 00:38
Channel	:		

Compound	Ave. RRF	RRF	Min RRF	%D	Max %D	Area%	Dev(min)
1,2-Dibromo-3-chloropropan	0.104	0.073	-	29.8*	20	68	0
1,3,5-Trichlorobenzene	1.101	1.091	-	0.9	20	88	0
Hexachlorobutadiene	0.485	0.504	-	-3.9	20	92	0
1,2,4-Trichlorobenzene	0.985	0.94	-	4.6	20	86	0
Naphthalene	2.073	1.754	-	15.4	20	77	0
1,2,3-Trichlorobenzene	0.892	0.811	-	9.1	20	81	0

\* Value outside of QC limits.



I:\Pest18\170219\18170219-01.d

Data File Name **18170219-01.d**  
 Data File Path **I:\Pest18\170219\**  
 Operator **PEST18:keg**  
 Date Acquired **2/19/2017 6:39**  
 Acq. Method File **PEST.M**  
 Sample Name **pem1817021901,42ee,,deg si**  
 Instrument Name **Pest 18**

Name	Ret Time	Response	
4,4'-DDT	4.77	596512694	% Breakdown
4,4'-DDE	4.10	1313720.5	
4,4'-DDD	4.56	2805222.74	0.69%
Endrin	4.49	312359165	% Breakdown
Endrin Aldehyde	4.96	3214489.238	
Endrin Ketone	5.46	3458992.346	2.09%
4,4'-DDT #2	5.40	352986076.7	% Breakdown
4,4'-DDE #2	4.75	1439625.154	
4,4'-DDD #2	5.18	3968664.015	1.51%
Endrin #2	5.11	202335181.3	% Breakdown
Endrin Aldehyde #2	5.50	2230195.539	
Endrin Ketone #2	6.05	1946107.989	2.02%

WG978969-1, -2, -3  
L1705147-01, -02



## ANALYTICAL REPORT

Lab Number:	L1705151
Client:	Vertex Environmental Services, Inc. 400 Libbey Pkwy Weymouth, MA 02184
ATTN:	Bill Gibbons
Phone:	(617) 830-1540
Project Name:	EAST BOSTON
Project Number:	43068
Report Date:	02/22/17

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Certifications & Approvals: MA (M-MA086), NH NELAP (2064), NJ NELAP (MA935), CT (PH-0574), IL (200077), ME (MA00086), MD (348), NY (11148), NC (25700/666), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #P330-14-00197).

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Eight Walkup Drive, Westborough, MA 01581-1019  
508-898-9220 (Fax) 508-898-9193 800-624-9220 - [www.alphalab.com](http://www.alphalab.com)



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1705151  
**Report Date:** 02/22/17

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L1705151-01	VES-125 (MW)	WATER	MA	02/17/17 08:50	02/17/17
L1705151-02	VES-109 (MW)	WATER	MA	02/17/17 11:10	02/17/17
L1705151-03	VES-108 (MW)	WATER	MA	02/17/17 13:40	02/17/17
L1705151-04	VES-110 (MW)	WATER	MA	02/17/17 12:00	02/17/17
L1705151-05	VES-106 (MW)	WATER	MA	02/17/17 08:50	02/17/17
L1705151-06	VES-119 (MW)	WATER	MA	02/17/17 11:30	02/17/17
L1705151-07	VES-111 (MW)	WATER	MA	02/17/17 14:25	02/17/17

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1705151  
**Report Date:** 02/22/17

### MADEP MCP Response Action Analytical Report Certification

This form provides certifications for all samples performed by MCP methods. Please refer to the Sample Results and Container Information sections of this report for specification of MCP methods used for each analysis. The following questions pertain only to MCP Analytical Methods.

<b>An affirmative response to questions A through F is required for "Presumptive Certainty" status</b>		
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
B	Were the analytical method(s) and all associated QC requirements specified in the selected CAM protocol(s) followed?	YES
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
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
E a.	VPH, EPH, and APH Methods only: Was each method conducted without significant modification(s)? (Refer to the individual method(s) for a list of significant modifications).	YES
E b.	APH and TO-15 Methods only: Was the complete analyte list reported for each method?	N/A
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

<b>A response to questions G, H and I is required for "Presumptive Certainty" status</b>		
G	Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocol(s)?	YES
H	Were all QC performance standards specified in the CAM protocol(s) achieved?	NO
I	Were results reported for the complete analyte list specified in the selected CAM protocol(s)?	NO

**For any questions answered "No", please refer to the case narrative section on the following page(s).**

Please note that sample matrix information is located in the Sample Results section of this report.



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1705151  
**Report Date:** 02/22/17

### Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively. When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. All specific QC information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated usability implications. Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances the specific failure is not narrated but noted in the associated QC table. The information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated usability implications.

Please see the associated ADEx data file for a comparison of laboratory reporting limits that were achieved with the regulatory Numerical Standards requested on the Chain of Custody.

#### HOLD POLICY

For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Client Service Representative and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Client Services at 800-624-9220 with any questions.

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1705151  
**Report Date:** 02/22/17

### Case Narrative (continued)

#### MCP Related Narratives

##### Volatile Organics

In reference to question H:

The initial calibration, associated with L1705151-01 through -07, did not meet the method required minimum response factor on the lowest calibration standard for 2-butanone (0.0732) and 1,4-dioxane (0.0014), as well as the average response factor for 2-butanone and 1,4-dioxane.

The continuing calibration standard, associated with L1705151-01 through -07, is outside the acceptance criteria for several compounds; however, it is within overall method allowances. A copy of the continuing calibration standard is included as an addendum to this report.

#### Volatile Organics by SIM

A copy of the continuing calibration standard, associated with L1705151-01, -04, and -06, is included as an addendum to this report.

#### VPH

In reference to question I:

All samples were analyzed for a subset of MCP analytes per the Chain of Custody.

#### Total Metals

In reference to question I:

All samples were analyzed for a subset of MCP analytes per the Chain of Custody.

#### Dissolved Metals

L1705151-01: The dissolved result is greater than the total result for arsenic. The sample containers were verified as being labeled correctly by the laboratory.

In reference to question H:

The WG979382-3 MS recovery for iron (0%), performed on L1705151-01, does not apply because the sample concentration is greater than four times the spike amount added.

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1705151  
**Report Date:** 02/22/17

### Case Narrative (continued)

In reference to question I:

All samples were analyzed for a subset of MCP analytes per the Chain of Custody.

Non-MCP Related Narratives

Semivolatile Organics

The WG979019-3 LCSD recovery, associated with L1705151-01, -04, and -06, is below the acceptance criteria for benzidine (0%); however, it has been identified as a "difficult" analyte. The results of the associated samples are reported.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature:

 Cristin Walker

Title: Technical Director/Representative

Date: 02/22/17

# ORGANICS



# VOLATILES



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1705151  
**Report Date:** 02/22/17

**SAMPLE RESULTS**

Lab ID: L1705151-01  
Client ID: VES-125 (MW)  
Sample Location: MA  
Matrix: Water  
Analytical Method: 14,504.1  
Analytical Date: 02/21/17 16:08  
Analyst: SR

Date Collected: 02/17/17 08:50  
Date Received: 02/17/17  
Field Prep: Field Filtered (Dissolved Metals)  
Extraction Method:EPA 8011  
Extraction Date: 02/21/17 14:05

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
<b>Microextractables by GC - Westborough Lab</b>							
1,2-Dibromoethane	ND		ug/l	0.010	--	1	A

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1705151  
**Report Date:** 02/22/17

**SAMPLE RESULTS**

Lab ID: L1705151-01  
Client ID: VES-125 (MW)  
Sample Location: MA

Date Collected: 02/17/17 08:50  
Date Received: 02/17/17  
Field Prep: Field Filtered (Dissolved Metals)

Matrix: Water  
Analytical Method: 97,8260C  
Analytical Date: 02/20/17 13:02  
Analyst: MM

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics - Westborough Lab</b>						
Methylene chloride	ND	ug/l	2.0	--	--	1
1,1-Dichloroethane	ND	ug/l	1.0	--	--	1
Chloroform	ND	ug/l	1.0	--	--	1
Carbon tetrachloride	ND	ug/l	1.0	--	--	1
1,2-Dichloropropane	ND	ug/l	1.0	--	--	1
Dibromochloromethane	ND	ug/l	1.0	--	--	1
1,1,2-Trichloroethane	ND	ug/l	1.0	--	--	1
Tetrachloroethene	ND	ug/l	1.0	--	--	1
Chlorobenzene	ND	ug/l	1.0	--	--	1
Trichlorofluoromethane	ND	ug/l	2.0	--	--	1
1,2-Dichloroethane	ND	ug/l	1.0	--	--	1
1,1,1-Trichloroethane	ND	ug/l	1.0	--	--	1
Bromodichloromethane	ND	ug/l	1.0	--	--	1
trans-1,3-Dichloropropene	ND	ug/l	0.50	--	--	1
cis-1,3-Dichloropropene	ND	ug/l	0.50	--	--	1
1,3-Dichloropropene, Total	ND	ug/l	0.50	--	--	1
1,1-Dichloropropene	ND	ug/l	2.0	--	--	1
Bromoform	ND	ug/l	2.0	--	--	1
1,1,2,2-Tetrachloroethane	ND	ug/l	1.0	--	--	1
Benzene	ND	ug/l	0.50	--	--	1
Toluene	ND	ug/l	1.0	--	--	1
Ethylbenzene	ND	ug/l	1.0	--	--	1
Chloromethane	ND	ug/l	2.0	--	--	1
Bromomethane	ND	ug/l	2.0	--	--	1
Vinyl chloride	ND	ug/l	1.0	--	--	1
Chloroethane	ND	ug/l	2.0	--	--	1
1,1-Dichloroethene	ND	ug/l	1.0	--	--	1
trans-1,2-Dichloroethene	ND	ug/l	1.0	--	--	1
Trichloroethene	ND	ug/l	1.0	--	--	1



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1705151  
**Report Date:** 02/22/17

**SAMPLE RESULTS**

Lab ID:	L1705151-01	Date Collected:	02/17/17 08:50
Client ID:	VES-125 (MW)	Date Received:	02/17/17
Sample Location:	MA	Field Prep:	Field Filtered (Dissolved Metals)

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics - Westborough Lab</b>						
1,2-Dichlorobenzene	ND	ug/l	1.0	--	--	1
1,3-Dichlorobenzene	ND	ug/l	1.0	--	--	1
1,4-Dichlorobenzene	ND	ug/l	1.0	--	--	1
Methyl tert butyl ether	ND	ug/l	2.0	--	--	1
p/m-Xylene	ND	ug/l	2.0	--	--	1
o-Xylene	ND	ug/l	1.0	--	--	1
Xylenes, Total	ND	ug/l	1.0	--	--	1
cis-1,2-Dichloroethene	ND	ug/l	1.0	--	--	1
1,2-Dichloroethene, Total	ND	ug/l	1.0	--	--	1
Dibromomethane	ND	ug/l	2.0	--	--	1
1,2,3-Trichloropropane	ND	ug/l	2.0	--	--	1
Styrene	ND	ug/l	1.0	--	--	1
Dichlorodifluoromethane	ND	ug/l	2.0	--	--	1
Acetone	ND	ug/l	5.0	--	--	1
Carbon disulfide	ND	ug/l	2.0	--	--	1
Methyl ethyl ketone	ND	ug/l	5.0	--	--	1
Methyl isobutyl ketone	ND	ug/l	5.0	--	--	1
2-Hexanone	ND	ug/l	5.0	--	--	1
Bromochloromethane	ND	ug/l	2.0	--	--	1
Tetrahydrofuran	ND	ug/l	2.0	--	--	1
2,2-Dichloropropane	ND	ug/l	2.0	--	--	1
1,2-Dibromoethane	ND	ug/l	2.0	--	--	1
1,3-Dichloropropane	ND	ug/l	2.0	--	--	1
1,1,1,2-Tetrachloroethane	ND	ug/l	1.0	--	--	1
Bromobenzene	ND	ug/l	2.0	--	--	1
n-Butylbenzene	ND	ug/l	2.0	--	--	1
sec-Butylbenzene	ND	ug/l	2.0	--	--	1
tert-Butylbenzene	ND	ug/l	2.0	--	--	1
o-Chlorotoluene	ND	ug/l	2.0	--	--	1
p-Chlorotoluene	ND	ug/l	2.0	--	--	1
1,2-Dibromo-3-chloropropane	ND	ug/l	2.0	--	--	1
Hexachlorobutadiene	ND	ug/l	0.60	--	--	1
Isopropylbenzene	ND	ug/l	2.0	--	--	1
p-Isopropyltoluene	ND	ug/l	2.0	--	--	1
Naphthalene	ND	ug/l	2.0	--	--	1
n-Propylbenzene	ND	ug/l	2.0	--	--	1
1,2,3-Trichlorobenzene	ND	ug/l	2.0	--	--	1
1,2,4-Trichlorobenzene	ND	ug/l	2.0	--	--	1



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1705151  
**Report Date:** 02/22/17

**SAMPLE RESULTS**

Lab ID: L1705151-01  
Client ID: VES-125 (MW)  
Sample Location: MA

Date Collected: 02/17/17 08:50  
Date Received: 02/17/17  
Field Prep: Field Filtered (Dissolved Metals)

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics - Westborough Lab</b>						
1,3,5-Trimethylbenzene	ND		ug/l	2.0	--	1
1,2,4-Trimethylbenzene	ND		ug/l	2.0	--	1
Diethyl ether	ND		ug/l	2.0	--	1
Diisopropyl Ether	ND		ug/l	2.0	--	1
Ethyl-Tert-Butyl-Ether	ND		ug/l	2.0	--	1
Tertiary-Amyl Methyl Ether	ND		ug/l	2.0	--	1
Tert-Butyl Alcohol	ND		ug/l	10	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	121		70-130
Toluene-d8	92		70-130
4-Bromofluorobenzene	95		70-130
Dibromofluoromethane	130		70-130

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1705151  
**Report Date:** 02/22/17

**SAMPLE RESULTS**

Lab ID: L1705151-01  
Client ID: VES-125 (MW)  
Sample Location: MA  
Matrix: Water  
Analytical Method: 97,8260C-SIM  
Analytical Date: 02/20/17 13:02  
Analyst: MM

Date Collected: 02/17/17 08:50  
Date Received: 02/17/17  
Field Prep: Field Filtered (Dissolved Metals)

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics by SIM - Westborough Lab</b>						
1,4-Dioxane	ND		ug/l	3.0	--	1

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1705151  
**Report Date:** 02/22/17

**SAMPLE RESULTS**

Lab ID: L1705151-02  
Client ID: VES-109 (MW)  
Sample Location: MA

Date Collected: 02/17/17 11:10  
Date Received: 02/17/17  
Field Prep: Field Filtered (Dissolved Metals)

Matrix: Water  
Analytical Method: 97,8260C  
Analytical Date: 02/20/17 12:12  
Analyst: MM

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics - Westborough Lab</b>						
Methylene chloride	ND	ug/l	2.0	--	--	1
1,1-Dichloroethane	ND	ug/l	1.0	--	--	1
Chloroform	ND	ug/l	1.0	--	--	1
Carbon tetrachloride	ND	ug/l	1.0	--	--	1
1,2-Dichloropropane	ND	ug/l	1.0	--	--	1
Dibromochloromethane	ND	ug/l	1.0	--	--	1
1,1,2-Trichloroethane	ND	ug/l	1.0	--	--	1
Tetrachloroethene	ND	ug/l	1.0	--	--	1
Chlorobenzene	ND	ug/l	1.0	--	--	1
Trichlorofluoromethane	ND	ug/l	2.0	--	--	1
1,2-Dichloroethane	ND	ug/l	1.0	--	--	1
1,1,1-Trichloroethane	ND	ug/l	1.0	--	--	1
Bromodichloromethane	ND	ug/l	1.0	--	--	1
trans-1,3-Dichloropropene	ND	ug/l	0.50	--	--	1
cis-1,3-Dichloropropene	ND	ug/l	0.50	--	--	1
1,3-Dichloropropene, Total	ND	ug/l	0.50	--	--	1
1,1-Dichloropropene	ND	ug/l	2.0	--	--	1
Bromoform	ND	ug/l	2.0	--	--	1
1,1,2,2-Tetrachloroethane	ND	ug/l	1.0	--	--	1
Benzene	ND	ug/l	0.50	--	--	1
Toluene	ND	ug/l	1.0	--	--	1
Ethylbenzene	ND	ug/l	1.0	--	--	1
Chloromethane	ND	ug/l	2.0	--	--	1
Bromomethane	ND	ug/l	2.0	--	--	1
Vinyl chloride	ND	ug/l	1.0	--	--	1
Chloroethane	ND	ug/l	2.0	--	--	1
1,1-Dichloroethene	ND	ug/l	1.0	--	--	1
trans-1,2-Dichloroethene	ND	ug/l	1.0	--	--	1
Trichloroethene	ND	ug/l	1.0	--	--	1



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1705151  
**Report Date:** 02/22/17

**SAMPLE RESULTS**

Lab ID:	L1705151-02	Date Collected:	02/17/17 11:10
Client ID:	VES-109 (MW)	Date Received:	02/17/17
Sample Location:	MA	Field Prep:	Field Filtered (Dissolved Metals)

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics - Westborough Lab</b>						
1,2-Dichlorobenzene	ND	ug/l	1.0	--	--	1
1,3-Dichlorobenzene	ND	ug/l	1.0	--	--	1
1,4-Dichlorobenzene	ND	ug/l	1.0	--	--	1
Methyl tert butyl ether	ND	ug/l	2.0	--	--	1
p/m-Xylene	ND	ug/l	2.0	--	--	1
o-Xylene	ND	ug/l	1.0	--	--	1
Xylene (Total)	ND	ug/l	1.0	--	--	1
cis-1,2-Dichloroethene	ND	ug/l	1.0	--	--	1
1,2-Dichloroethene (total)	ND	ug/l	1.0	--	--	1
Dibromomethane	ND	ug/l	2.0	--	--	1
1,2,3-Trichloropropane	ND	ug/l	2.0	--	--	1
Styrene	ND	ug/l	1.0	--	--	1
Dichlorodifluoromethane	ND	ug/l	2.0	--	--	1
Acetone	ND	ug/l	5.0	--	--	1
Carbon disulfide	ND	ug/l	2.0	--	--	1
2-Butanone	ND	ug/l	5.0	--	--	1
4-Methyl-2-pentanone	ND	ug/l	5.0	--	--	1
2-Hexanone	ND	ug/l	5.0	--	--	1
Bromochloromethane	ND	ug/l	2.0	--	--	1
Tetrahydrofuran	ND	ug/l	2.0	--	--	1
2,2-Dichloropropane	ND	ug/l	2.0	--	--	1
1,2-Dibromoethane	ND	ug/l	2.0	--	--	1
1,3-Dichloropropane	ND	ug/l	2.0	--	--	1
1,1,1,2-Tetrachloroethane	ND	ug/l	1.0	--	--	1
Bromobenzene	ND	ug/l	2.0	--	--	1
n-Butylbenzene	ND	ug/l	2.0	--	--	1
sec-Butylbenzene	ND	ug/l	2.0	--	--	1
tert-Butylbenzene	ND	ug/l	2.0	--	--	1
o-Chlorotoluene	ND	ug/l	2.0	--	--	1
p-Chlorotoluene	ND	ug/l	2.0	--	--	1
1,2-Dibromo-3-chloropropane	ND	ug/l	2.0	--	--	1
Hexachlorobutadiene	ND	ug/l	0.60	--	--	1
Isopropylbenzene	ND	ug/l	2.0	--	--	1
p-Isopropyltoluene	ND	ug/l	2.0	--	--	1
Naphthalene	2.8	ug/l	2.0	--	--	1
n-Propylbenzene	ND	ug/l	2.0	--	--	1
1,2,3-Trichlorobenzene	ND	ug/l	2.0	--	--	1
1,2,4-Trichlorobenzene	ND	ug/l	2.0	--	--	1



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1705151  
**Report Date:** 02/22/17

**SAMPLE RESULTS**

Lab ID: L1705151-02  
Client ID: VES-109 (MW)  
Sample Location: MA

Date Collected: 02/17/17 11:10  
Date Received: 02/17/17  
Field Prep: Field Filtered (Dissolved Metals)

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics - Westborough Lab</b>						
1,3,5-Trimethylbenzene	ND		ug/l	2.0	--	1
1,2,4-Trimethylbenzene	ND		ug/l	2.0	--	1
Ethyl ether	ND		ug/l	2.0	--	1
Isopropyl Ether	ND		ug/l	2.0	--	1
Ethyl-Tert-Butyl-Ether	ND		ug/l	2.0	--	1
Tertiary-Amyl Methyl Ether	ND		ug/l	2.0	--	1
1,4-Dioxane	ND		ug/l	250	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	122		70-130
Toluene-d8	92		70-130
4-Bromofluorobenzene	97		70-130
Dibromofluoromethane	124		70-130

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1705151  
**Report Date:** 02/22/17

**SAMPLE RESULTS**

Lab ID: L1705151-03  
Client ID: VES-108 (MW)  
Sample Location: MA

Date Collected: 02/17/17 13:40  
Date Received: 02/17/17  
Field Prep: Field Filtered (Dissolved Metals)

Matrix: Water  
Analytical Method: 97,8260C  
Analytical Date: 02/20/17 12:37  
Analyst: MM

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics - Westborough Lab</b>						
Methylene chloride	ND	ug/l	2.0	--	--	1
1,1-Dichloroethane	ND	ug/l	1.0	--	--	1
Chloroform	ND	ug/l	1.0	--	--	1
Carbon tetrachloride	ND	ug/l	1.0	--	--	1
1,2-Dichloropropane	ND	ug/l	1.0	--	--	1
Dibromochloromethane	ND	ug/l	1.0	--	--	1
1,1,2-Trichloroethane	ND	ug/l	1.0	--	--	1
Tetrachloroethene	ND	ug/l	1.0	--	--	1
Chlorobenzene	ND	ug/l	1.0	--	--	1
Trichlorofluoromethane	ND	ug/l	2.0	--	--	1
1,2-Dichloroethane	ND	ug/l	1.0	--	--	1
1,1,1-Trichloroethane	ND	ug/l	1.0	--	--	1
Bromodichloromethane	ND	ug/l	1.0	--	--	1
trans-1,3-Dichloropropene	ND	ug/l	0.50	--	--	1
cis-1,3-Dichloropropene	ND	ug/l	0.50	--	--	1
1,3-Dichloropropene, Total	ND	ug/l	0.50	--	--	1
1,1-Dichloropropene	ND	ug/l	2.0	--	--	1
Bromoform	ND	ug/l	2.0	--	--	1
1,1,2,2-Tetrachloroethane	ND	ug/l	1.0	--	--	1
Benzene	ND	ug/l	0.50	--	--	1
Toluene	ND	ug/l	1.0	--	--	1
Ethylbenzene	ND	ug/l	1.0	--	--	1
Chloromethane	ND	ug/l	2.0	--	--	1
Bromomethane	ND	ug/l	2.0	--	--	1
Vinyl chloride	ND	ug/l	1.0	--	--	1
Chloroethane	ND	ug/l	2.0	--	--	1
1,1-Dichloroethene	ND	ug/l	1.0	--	--	1
trans-1,2-Dichloroethene	ND	ug/l	1.0	--	--	1
Trichloroethene	ND	ug/l	1.0	--	--	1



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1705151  
**Report Date:** 02/22/17

**SAMPLE RESULTS**

Lab ID:	L1705151-03	Date Collected:	02/17/17 13:40
Client ID:	VES-108 (MW)	Date Received:	02/17/17
Sample Location:	MA	Field Prep:	Field Filtered (Dissolved Metals)

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics - Westborough Lab</b>						
1,2-Dichlorobenzene	ND	ug/l	1.0	--	--	1
1,3-Dichlorobenzene	ND	ug/l	1.0	--	--	1
1,4-Dichlorobenzene	ND	ug/l	1.0	--	--	1
Methyl tert butyl ether	ND	ug/l	2.0	--	--	1
p/m-Xylene	ND	ug/l	2.0	--	--	1
o-Xylene	ND	ug/l	1.0	--	--	1
Xylene (Total)	ND	ug/l	1.0	--	--	1
cis-1,2-Dichloroethene	ND	ug/l	1.0	--	--	1
1,2-Dichloroethene (total)	ND	ug/l	1.0	--	--	1
Dibromomethane	ND	ug/l	2.0	--	--	1
1,2,3-Trichloropropane	ND	ug/l	2.0	--	--	1
Styrene	ND	ug/l	1.0	--	--	1
Dichlorodifluoromethane	ND	ug/l	2.0	--	--	1
Acetone	7.1	ug/l	5.0	--	--	1
Carbon disulfide	ND	ug/l	2.0	--	--	1
2-Butanone	ND	ug/l	5.0	--	--	1
4-Methyl-2-pentanone	ND	ug/l	5.0	--	--	1
2-Hexanone	ND	ug/l	5.0	--	--	1
Bromochloromethane	ND	ug/l	2.0	--	--	1
Tetrahydrofuran	ND	ug/l	2.0	--	--	1
2,2-Dichloropropane	ND	ug/l	2.0	--	--	1
1,2-Dibromoethane	ND	ug/l	2.0	--	--	1
1,3-Dichloropropane	ND	ug/l	2.0	--	--	1
1,1,1,2-Tetrachloroethane	ND	ug/l	1.0	--	--	1
Bromobenzene	ND	ug/l	2.0	--	--	1
n-Butylbenzene	ND	ug/l	2.0	--	--	1
sec-Butylbenzene	ND	ug/l	2.0	--	--	1
tert-Butylbenzene	ND	ug/l	2.0	--	--	1
o-Chlorotoluene	ND	ug/l	2.0	--	--	1
p-Chlorotoluene	ND	ug/l	2.0	--	--	1
1,2-Dibromo-3-chloropropane	ND	ug/l	2.0	--	--	1
Hexachlorobutadiene	ND	ug/l	0.60	--	--	1
Isopropylbenzene	ND	ug/l	2.0	--	--	1
p-Isopropyltoluene	ND	ug/l	2.0	--	--	1
Naphthalene	ND	ug/l	2.0	--	--	1
n-Propylbenzene	ND	ug/l	2.0	--	--	1
1,2,3-Trichlorobenzene	ND	ug/l	2.0	--	--	1
1,2,4-Trichlorobenzene	ND	ug/l	2.0	--	--	1



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1705151  
**Report Date:** 02/22/17

**SAMPLE RESULTS**

Lab ID: L1705151-03  
Client ID: VES-108 (MW)  
Sample Location: MA

Date Collected: 02/17/17 13:40  
Date Received: 02/17/17  
Field Prep: Field Filtered (Dissolved Metals)

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics - Westborough Lab</b>						
1,3,5-Trimethylbenzene	ND		ug/l	2.0	--	1
1,2,4-Trimethylbenzene	ND		ug/l	2.0	--	1
Ethyl ether	ND		ug/l	2.0	--	1
Isopropyl Ether	ND		ug/l	2.0	--	1
Ethyl-Tert-Butyl-Ether	ND		ug/l	2.0	--	1
Tertiary-Amyl Methyl Ether	ND		ug/l	2.0	--	1
1,4-Dioxane	ND		ug/l	250	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	117		70-130
Toluene-d8	92		70-130
4-Bromofluorobenzene	98		70-130
Dibromofluoromethane	123		70-130

**Project Name:** EAST BOSTON  
**Project Number:** 43068

Serial\_No:02221715:41

**Lab Number:** L1705151  
**Report Date:** 02/22/17

### SAMPLE RESULTS

Lab ID: L1705151-04  
Client ID: VES-110 (MW)  
Sample Location: MA  
  
Matrix: Water  
Analytical Method: 14,504.1  
Analytical Date: 02/21/17 16:25  
Analyst: SR

Date Collected: 02/17/17 12:00  
Date Received: 02/17/17  
Field Prep: Field Filtered (Dissolved Metals)  
Extraction Method:EPA 8011  
Extraction Date: 02/21/17 14:05

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Microextractables by GC - Westborough Lab							
1,2-Dibromoethane	ND		ug/l	0.010	--	1	A

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1705151  
**Report Date:** 02/22/17

**SAMPLE RESULTS**

Lab ID: L1705151-04  
Client ID: VES-110 (MW)  
Sample Location: MA

Date Collected: 02/17/17 12:00  
Date Received: 02/17/17  
Field Prep: Field Filtered (Dissolved Metals)

Matrix: Water  
Analytical Method: 97,8260C  
Analytical Date: 02/20/17 13:27  
Analyst: MM

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics - Westborough Lab</b>						
Methylene chloride	ND	ug/l	2.0	--	--	1
1,1-Dichloroethane	ND	ug/l	1.0	--	--	1
Chloroform	ND	ug/l	1.0	--	--	1
Carbon tetrachloride	ND	ug/l	1.0	--	--	1
1,2-Dichloropropane	ND	ug/l	1.0	--	--	1
Dibromochloromethane	ND	ug/l	1.0	--	--	1
1,1,2-Trichloroethane	ND	ug/l	1.0	--	--	1
Tetrachloroethene	ND	ug/l	1.0	--	--	1
Chlorobenzene	ND	ug/l	1.0	--	--	1
Trichlorofluoromethane	ND	ug/l	2.0	--	--	1
1,2-Dichloroethane	ND	ug/l	1.0	--	--	1
1,1,1-Trichloroethane	ND	ug/l	1.0	--	--	1
Bromodichloromethane	ND	ug/l	1.0	--	--	1
trans-1,3-Dichloropropene	ND	ug/l	0.50	--	--	1
cis-1,3-Dichloropropene	ND	ug/l	0.50	--	--	1
1,3-Dichloropropene, Total	ND	ug/l	0.50	--	--	1
1,1-Dichloropropene	ND	ug/l	2.0	--	--	1
Bromoform	ND	ug/l	2.0	--	--	1
1,1,2,2-Tetrachloroethane	ND	ug/l	1.0	--	--	1
Benzene	ND	ug/l	0.50	--	--	1
Toluene	ND	ug/l	1.0	--	--	1
Ethylbenzene	ND	ug/l	1.0	--	--	1
Chloromethane	ND	ug/l	2.0	--	--	1
Bromomethane	ND	ug/l	2.0	--	--	1
Vinyl chloride	ND	ug/l	1.0	--	--	1
Chloroethane	ND	ug/l	2.0	--	--	1
1,1-Dichloroethene	ND	ug/l	1.0	--	--	1
trans-1,2-Dichloroethene	ND	ug/l	1.0	--	--	1
Trichloroethene	ND	ug/l	1.0	--	--	1



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1705151  
**Report Date:** 02/22/17

**SAMPLE RESULTS**

Lab ID:	L1705151-04	Date Collected:	02/17/17 12:00
Client ID:	VES-110 (MW)	Date Received:	02/17/17
Sample Location:	MA	Field Prep:	Field Filtered (Dissolved Metals)

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics - Westborough Lab</b>						
1,2-Dichlorobenzene	ND	ug/l	1.0	--	--	1
1,3-Dichlorobenzene	ND	ug/l	1.0	--	--	1
1,4-Dichlorobenzene	ND	ug/l	1.0	--	--	1
Methyl tert butyl ether	ND	ug/l	2.0	--	--	1
p/m-Xylene	ND	ug/l	2.0	--	--	1
o-Xylene	ND	ug/l	1.0	--	--	1
Xylenes, Total	ND	ug/l	1.0	--	--	1
cis-1,2-Dichloroethene	ND	ug/l	1.0	--	--	1
1,2-Dichloroethene, Total	ND	ug/l	1.0	--	--	1
Dibromomethane	ND	ug/l	2.0	--	--	1
1,2,3-Trichloropropane	ND	ug/l	2.0	--	--	1
Styrene	ND	ug/l	1.0	--	--	1
Dichlorodifluoromethane	ND	ug/l	2.0	--	--	1
Acetone	ND	ug/l	5.0	--	--	1
Carbon disulfide	ND	ug/l	2.0	--	--	1
Methyl ethyl ketone	ND	ug/l	5.0	--	--	1
Methyl isobutyl ketone	ND	ug/l	5.0	--	--	1
2-Hexanone	ND	ug/l	5.0	--	--	1
Bromochloromethane	ND	ug/l	2.0	--	--	1
Tetrahydrofuran	ND	ug/l	2.0	--	--	1
2,2-Dichloropropane	ND	ug/l	2.0	--	--	1
1,2-Dibromoethane	ND	ug/l	2.0	--	--	1
1,3-Dichloropropane	ND	ug/l	2.0	--	--	1
1,1,1,2-Tetrachloroethane	ND	ug/l	1.0	--	--	1
Bromobenzene	ND	ug/l	2.0	--	--	1
n-Butylbenzene	ND	ug/l	2.0	--	--	1
sec-Butylbenzene	ND	ug/l	2.0	--	--	1
tert-Butylbenzene	ND	ug/l	2.0	--	--	1
o-Chlorotoluene	ND	ug/l	2.0	--	--	1
p-Chlorotoluene	ND	ug/l	2.0	--	--	1
1,2-Dibromo-3-chloropropane	ND	ug/l	2.0	--	--	1
Hexachlorobutadiene	ND	ug/l	0.60	--	--	1
Isopropylbenzene	ND	ug/l	2.0	--	--	1
p-Isopropyltoluene	ND	ug/l	2.0	--	--	1
Naphthalene	ND	ug/l	2.0	--	--	1
n-Propylbenzene	ND	ug/l	2.0	--	--	1
1,2,3-Trichlorobenzene	ND	ug/l	2.0	--	--	1
1,2,4-Trichlorobenzene	ND	ug/l	2.0	--	--	1



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1705151  
**Report Date:** 02/22/17

**SAMPLE RESULTS**

Lab ID: L1705151-04  
Client ID: VES-110 (MW)  
Sample Location: MA

Date Collected: 02/17/17 12:00  
Date Received: 02/17/17  
Field Prep: Field Filtered (Dissolved Metals)

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics - Westborough Lab</b>						
1,3,5-Trimethylbenzene	ND		ug/l	2.0	--	1
1,2,4-Trimethylbenzene	ND		ug/l	2.0	--	1
Diethyl ether	ND		ug/l	2.0	--	1
Diisopropyl Ether	ND		ug/l	2.0	--	1
Ethyl-Tert-Butyl-Ether	ND		ug/l	2.0	--	1
Tertiary-Amyl Methyl Ether	ND		ug/l	2.0	--	1
Tert-Butyl Alcohol	ND		ug/l	10	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	120		70-130
Toluene-d8	94		70-130
4-Bromofluorobenzene	97		70-130
Dibromofluoromethane	128		70-130

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1705151  
**Report Date:** 02/22/17

**SAMPLE RESULTS**

Lab ID: L1705151-04  
Client ID: VES-110 (MW)  
Sample Location: MA  
Matrix: Water  
Analytical Method: 97,8260C-SIM  
Analytical Date: 02/20/17 13:27  
Analyst: MM

Date Collected: 02/17/17 12:00  
Date Received: 02/17/17  
Field Prep: Field Filtered (Dissolved Metals)

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics by SIM - Westborough Lab</b>						
1,4-Dioxane	ND		ug/l	3.0	--	1

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1705151  
**Report Date:** 02/22/17

**SAMPLE RESULTS**

Lab ID: L1705151-05  
Client ID: VES-106 (MW)  
Sample Location: MA

Date Collected: 02/17/17 08:50  
Date Received: 02/17/17  
Field Prep: Field Filtered (Dissolved Metals)

Matrix: Water  
Analytical Method: 97,8260C  
Analytical Date: 02/20/17 13:52  
Analyst: MM

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics - Westborough Lab</b>						
Methylene chloride	ND	ug/l	2.0	--	--	1
1,1-Dichloroethane	ND	ug/l	1.0	--	--	1
Chloroform	ND	ug/l	1.0	--	--	1
Carbon tetrachloride	ND	ug/l	1.0	--	--	1
1,2-Dichloropropane	ND	ug/l	1.0	--	--	1
Dibromochloromethane	ND	ug/l	1.0	--	--	1
1,1,2-Trichloroethane	ND	ug/l	1.0	--	--	1
Tetrachloroethene	ND	ug/l	1.0	--	--	1
Chlorobenzene	ND	ug/l	1.0	--	--	1
Trichlorofluoromethane	ND	ug/l	2.0	--	--	1
1,2-Dichloroethane	ND	ug/l	1.0	--	--	1
1,1,1-Trichloroethane	ND	ug/l	1.0	--	--	1
Bromodichloromethane	ND	ug/l	1.0	--	--	1
trans-1,3-Dichloropropene	ND	ug/l	0.50	--	--	1
cis-1,3-Dichloropropene	ND	ug/l	0.50	--	--	1
1,3-Dichloropropene, Total	ND	ug/l	0.50	--	--	1
1,1-Dichloropropene	ND	ug/l	2.0	--	--	1
Bromoform	ND	ug/l	2.0	--	--	1
1,1,2,2-Tetrachloroethane	ND	ug/l	1.0	--	--	1
Benzene	ND	ug/l	0.50	--	--	1
Toluene	ND	ug/l	1.0	--	--	1
Ethylbenzene	ND	ug/l	1.0	--	--	1
Chloromethane	ND	ug/l	2.0	--	--	1
Bromomethane	ND	ug/l	2.0	--	--	1
Vinyl chloride	ND	ug/l	1.0	--	--	1
Chloroethane	ND	ug/l	2.0	--	--	1
1,1-Dichloroethene	ND	ug/l	1.0	--	--	1
trans-1,2-Dichloroethene	ND	ug/l	1.0	--	--	1
Trichloroethene	ND	ug/l	1.0	--	--	1



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1705151  
**Report Date:** 02/22/17

**SAMPLE RESULTS**

Lab ID:	L1705151-05	Date Collected:	02/17/17 08:50
Client ID:	VES-106 (MW)	Date Received:	02/17/17
Sample Location:	MA	Field Prep:	Field Filtered (Dissolved Metals)

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics - Westborough Lab</b>						
1,2-Dichlorobenzene	ND	ug/l	1.0	--	--	1
1,3-Dichlorobenzene	ND	ug/l	1.0	--	--	1
1,4-Dichlorobenzene	ND	ug/l	1.0	--	--	1
Methyl tert butyl ether	ND	ug/l	2.0	--	--	1
p/m-Xylene	ND	ug/l	2.0	--	--	1
o-Xylene	ND	ug/l	1.0	--	--	1
Xylene (Total)	ND	ug/l	1.0	--	--	1
cis-1,2-Dichloroethene	ND	ug/l	1.0	--	--	1
1,2-Dichloroethene (total)	ND	ug/l	1.0	--	--	1
Dibromomethane	ND	ug/l	2.0	--	--	1
1,2,3-Trichloropropane	ND	ug/l	2.0	--	--	1
Styrene	ND	ug/l	1.0	--	--	1
Dichlorodifluoromethane	ND	ug/l	2.0	--	--	1
Acetone	8.8	ug/l	5.0	--	--	1
Carbon disulfide	ND	ug/l	2.0	--	--	1
2-Butanone	ND	ug/l	5.0	--	--	1
4-Methyl-2-pentanone	ND	ug/l	5.0	--	--	1
2-Hexanone	ND	ug/l	5.0	--	--	1
Bromochloromethane	ND	ug/l	2.0	--	--	1
Tetrahydrofuran	ND	ug/l	2.0	--	--	1
2,2-Dichloropropane	ND	ug/l	2.0	--	--	1
1,2-Dibromoethane	ND	ug/l	2.0	--	--	1
1,3-Dichloropropane	ND	ug/l	2.0	--	--	1
1,1,1,2-Tetrachloroethane	ND	ug/l	1.0	--	--	1
Bromobenzene	ND	ug/l	2.0	--	--	1
n-Butylbenzene	ND	ug/l	2.0	--	--	1
sec-Butylbenzene	ND	ug/l	2.0	--	--	1
tert-Butylbenzene	ND	ug/l	2.0	--	--	1
o-Chlorotoluene	ND	ug/l	2.0	--	--	1
p-Chlorotoluene	ND	ug/l	2.0	--	--	1
1,2-Dibromo-3-chloropropane	ND	ug/l	2.0	--	--	1
Hexachlorobutadiene	ND	ug/l	0.60	--	--	1
Isopropylbenzene	ND	ug/l	2.0	--	--	1
p-Isopropyltoluene	ND	ug/l	2.0	--	--	1
Naphthalene	ND	ug/l	2.0	--	--	1
n-Propylbenzene	ND	ug/l	2.0	--	--	1
1,2,3-Trichlorobenzene	ND	ug/l	2.0	--	--	1
1,2,4-Trichlorobenzene	ND	ug/l	2.0	--	--	1



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1705151  
**Report Date:** 02/22/17

**SAMPLE RESULTS**

Lab ID: L1705151-05  
Client ID: VES-106 (MW)  
Sample Location: MA

Date Collected: 02/17/17 08:50  
Date Received: 02/17/17  
Field Prep: Field Filtered (Dissolved Metals)

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics - Westborough Lab</b>						
1,3,5-Trimethylbenzene	ND		ug/l	2.0	--	1
1,2,4-Trimethylbenzene	ND		ug/l	2.0	--	1
Ethyl ether	ND		ug/l	2.0	--	1
Isopropyl Ether	ND		ug/l	2.0	--	1
Ethyl-Tert-Butyl-Ether	ND		ug/l	2.0	--	1
Tertiary-Amyl Methyl Ether	ND		ug/l	2.0	--	1
1,4-Dioxane	ND		ug/l	250	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	117		70-130
Toluene-d8	93		70-130
4-Bromofluorobenzene	98		70-130
Dibromofluoromethane	127		70-130

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1705151  
**Report Date:** 02/22/17

**SAMPLE RESULTS**

Lab ID: L1705151-06  
Client ID: VES-119 (MW)  
Sample Location: MA  
Matrix: Water  
Analytical Method: 14,504.1  
Analytical Date: 02/21/17 15:51  
Analyst: SR

Date Collected: 02/17/17 11:30  
Date Received: 02/17/17  
Field Prep: Field Filtered (Dissolved Metals)  
Extraction Method:EPA 8011  
Extraction Date: 02/21/17 14:05

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Microextractables by GC - Westborough Lab							
1,2-Dibromoethane	ND		ug/l	0.011	--	1	A

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1705151  
**Report Date:** 02/22/17

**SAMPLE RESULTS**

Lab ID: L1705151-06  
Client ID: VES-119 (MW)  
Sample Location: MA

Date Collected: 02/17/17 11:30  
Date Received: 02/17/17  
Field Prep: Field Filtered (Dissolved Metals)

Matrix: Water  
Analytical Method: 97,8260C  
Analytical Date: 02/20/17 14:17  
Analyst: MM

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics - Westborough Lab</b>						
Methylene chloride	ND	ug/l	2.0	--	--	1
1,1-Dichloroethane	ND	ug/l	1.0	--	--	1
Chloroform	ND	ug/l	1.0	--	--	1
Carbon tetrachloride	ND	ug/l	1.0	--	--	1
1,2-Dichloropropane	ND	ug/l	1.0	--	--	1
Dibromochloromethane	ND	ug/l	1.0	--	--	1
1,1,2-Trichloroethane	ND	ug/l	1.0	--	--	1
Tetrachloroethene	ND	ug/l	1.0	--	--	1
Chlorobenzene	ND	ug/l	1.0	--	--	1
Trichlorofluoromethane	ND	ug/l	2.0	--	--	1
1,2-Dichloroethane	ND	ug/l	1.0	--	--	1
1,1,1-Trichloroethane	ND	ug/l	1.0	--	--	1
Bromodichloromethane	ND	ug/l	1.0	--	--	1
trans-1,3-Dichloropropene	ND	ug/l	0.50	--	--	1
cis-1,3-Dichloropropene	ND	ug/l	0.50	--	--	1
1,3-Dichloropropene, Total	ND	ug/l	0.50	--	--	1
1,1-Dichloropropene	ND	ug/l	2.0	--	--	1
Bromoform	ND	ug/l	2.0	--	--	1
1,1,2,2-Tetrachloroethane	ND	ug/l	1.0	--	--	1
Benzene	ND	ug/l	0.50	--	--	1
Toluene	ND	ug/l	1.0	--	--	1
Ethylbenzene	ND	ug/l	1.0	--	--	1
Chloromethane	ND	ug/l	2.0	--	--	1
Bromomethane	ND	ug/l	2.0	--	--	1
Vinyl chloride	ND	ug/l	1.0	--	--	1
Chloroethane	ND	ug/l	2.0	--	--	1
1,1-Dichloroethene	ND	ug/l	1.0	--	--	1
trans-1,2-Dichloroethene	ND	ug/l	1.0	--	--	1
Trichloroethene	ND	ug/l	1.0	--	--	1



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1705151  
**Report Date:** 02/22/17

**SAMPLE RESULTS**

Lab ID:	L1705151-06	Date Collected:	02/17/17 11:30
Client ID:	VES-119 (MW)	Date Received:	02/17/17
Sample Location:	MA	Field Prep:	Field Filtered (Dissolved Metals)

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics - Westborough Lab</b>						
1,2-Dichlorobenzene	ND	ug/l	1.0	--	--	1
1,3-Dichlorobenzene	ND	ug/l	1.0	--	--	1
1,4-Dichlorobenzene	ND	ug/l	1.0	--	--	1
Methyl tert butyl ether	ND	ug/l	2.0	--	--	1
p/m-Xylene	ND	ug/l	2.0	--	--	1
o-Xylene	ND	ug/l	1.0	--	--	1
Xylenes, Total	ND	ug/l	1.0	--	--	1
cis-1,2-Dichloroethene	ND	ug/l	1.0	--	--	1
1,2-Dichloroethene, Total	ND	ug/l	1.0	--	--	1
Dibromomethane	ND	ug/l	2.0	--	--	1
1,2,3-Trichloropropane	ND	ug/l	2.0	--	--	1
Styrene	ND	ug/l	1.0	--	--	1
Dichlorodifluoromethane	ND	ug/l	2.0	--	--	1
Acetone	ND	ug/l	5.0	--	--	1
Carbon disulfide	ND	ug/l	2.0	--	--	1
Methyl ethyl ketone	ND	ug/l	5.0	--	--	1
Methyl isobutyl ketone	ND	ug/l	5.0	--	--	1
2-Hexanone	ND	ug/l	5.0	--	--	1
Bromochloromethane	ND	ug/l	2.0	--	--	1
Tetrahydrofuran	ND	ug/l	2.0	--	--	1
2,2-Dichloropropane	ND	ug/l	2.0	--	--	1
1,2-Dibromoethane	ND	ug/l	2.0	--	--	1
1,3-Dichloropropane	ND	ug/l	2.0	--	--	1
1,1,1,2-Tetrachloroethane	ND	ug/l	1.0	--	--	1
Bromobenzene	ND	ug/l	2.0	--	--	1
n-Butylbenzene	ND	ug/l	2.0	--	--	1
sec-Butylbenzene	ND	ug/l	2.0	--	--	1
tert-Butylbenzene	ND	ug/l	2.0	--	--	1
o-Chlorotoluene	ND	ug/l	2.0	--	--	1
p-Chlorotoluene	ND	ug/l	2.0	--	--	1
1,2-Dibromo-3-chloropropane	ND	ug/l	2.0	--	--	1
Hexachlorobutadiene	ND	ug/l	0.60	--	--	1
Isopropylbenzene	ND	ug/l	2.0	--	--	1
p-Isopropyltoluene	ND	ug/l	2.0	--	--	1
Naphthalene	ND	ug/l	2.0	--	--	1
n-Propylbenzene	ND	ug/l	2.0	--	--	1
1,2,3-Trichlorobenzene	ND	ug/l	2.0	--	--	1
1,2,4-Trichlorobenzene	ND	ug/l	2.0	--	--	1



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1705151  
**Report Date:** 02/22/17

**SAMPLE RESULTS**

Lab ID: L1705151-06  
Client ID: VES-119 (MW)  
Sample Location: MA

Date Collected: 02/17/17 11:30  
Date Received: 02/17/17  
Field Prep: Field Filtered (Dissolved Metals)

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics - Westborough Lab</b>						
1,3,5-Trimethylbenzene	ND		ug/l	2.0	--	1
1,2,4-Trimethylbenzene	ND		ug/l	2.0	--	1
Diethyl ether	ND		ug/l	2.0	--	1
Diisopropyl Ether	ND		ug/l	2.0	--	1
Ethyl-Tert-Butyl-Ether	ND		ug/l	2.0	--	1
Tertiary-Amyl Methyl Ether	ND		ug/l	2.0	--	1
Tert-Butyl Alcohol	ND		ug/l	10	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	121		70-130
Toluene-d8	93		70-130
4-Bromofluorobenzene	101		70-130
Dibromofluoromethane	128		70-130

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1705151  
**Report Date:** 02/22/17

**SAMPLE RESULTS**

Lab ID: L1705151-06  
Client ID: VES-119 (MW)  
Sample Location: MA  
Matrix: Water  
Analytical Method: 97,8260C-SIM  
Analytical Date: 02/20/17 14:17  
Analyst: MM

Date Collected: 02/17/17 11:30  
Date Received: 02/17/17  
Field Prep: Field Filtered (Dissolved Metals)

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics by SIM - Westborough Lab</b>						
1,4-Dioxane	ND		ug/l	3.0	--	1

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1705151  
**Report Date:** 02/22/17

**SAMPLE RESULTS**

Lab ID: L1705151-07  
Client ID: VES-111 (MW)  
Sample Location: MA

Date Collected: 02/17/17 14:25  
Date Received: 02/17/17  
Field Prep: Field Filtered (Dissolved Metals)

Matrix: Water  
Analytical Method: 97,8260C  
Analytical Date: 02/20/17 14:43  
Analyst: MM

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics - Westborough Lab</b>						
Methylene chloride	ND	ug/l	2.0	--	--	1
1,1-Dichloroethane	ND	ug/l	1.0	--	--	1
Chloroform	ND	ug/l	1.0	--	--	1
Carbon tetrachloride	ND	ug/l	1.0	--	--	1
1,2-Dichloropropane	ND	ug/l	1.0	--	--	1
Dibromochloromethane	ND	ug/l	1.0	--	--	1
1,1,2-Trichloroethane	ND	ug/l	1.0	--	--	1
Tetrachloroethene	ND	ug/l	1.0	--	--	1
Chlorobenzene	ND	ug/l	1.0	--	--	1
Trichlorofluoromethane	ND	ug/l	2.0	--	--	1
1,2-Dichloroethane	ND	ug/l	1.0	--	--	1
1,1,1-Trichloroethane	ND	ug/l	1.0	--	--	1
Bromodichloromethane	ND	ug/l	1.0	--	--	1
trans-1,3-Dichloropropene	ND	ug/l	0.50	--	--	1
cis-1,3-Dichloropropene	ND	ug/l	0.50	--	--	1
1,3-Dichloropropene, Total	ND	ug/l	0.50	--	--	1
1,1-Dichloropropene	ND	ug/l	2.0	--	--	1
Bromoform	ND	ug/l	2.0	--	--	1
1,1,2,2-Tetrachloroethane	ND	ug/l	1.0	--	--	1
Benzene	ND	ug/l	0.50	--	--	1
Toluene	ND	ug/l	1.0	--	--	1
Ethylbenzene	ND	ug/l	1.0	--	--	1
Chloromethane	ND	ug/l	2.0	--	--	1
Bromomethane	ND	ug/l	2.0	--	--	1
Vinyl chloride	ND	ug/l	1.0	--	--	1
Chloroethane	ND	ug/l	2.0	--	--	1
1,1-Dichloroethene	ND	ug/l	1.0	--	--	1
trans-1,2-Dichloroethene	ND	ug/l	1.0	--	--	1
Trichloroethene	ND	ug/l	1.0	--	--	1



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1705151  
**Report Date:** 02/22/17

**SAMPLE RESULTS**

Lab ID:	L1705151-07	Date Collected:	02/17/17 14:25
Client ID:	VES-111 (MW)	Date Received:	02/17/17
Sample Location:	MA	Field Prep:	Field Filtered (Dissolved Metals)

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics - Westborough Lab</b>						
1,2-Dichlorobenzene	ND	ug/l	1.0	--	--	1
1,3-Dichlorobenzene	ND	ug/l	1.0	--	--	1
1,4-Dichlorobenzene	ND	ug/l	1.0	--	--	1
Methyl tert butyl ether	ND	ug/l	2.0	--	--	1
p/m-Xylene	ND	ug/l	2.0	--	--	1
o-Xylene	ND	ug/l	1.0	--	--	1
Xylene (Total)	ND	ug/l	1.0	--	--	1
cis-1,2-Dichloroethene	ND	ug/l	1.0	--	--	1
1,2-Dichloroethene (total)	ND	ug/l	1.0	--	--	1
Dibromomethane	ND	ug/l	2.0	--	--	1
1,2,3-Trichloropropane	ND	ug/l	2.0	--	--	1
Styrene	ND	ug/l	1.0	--	--	1
Dichlorodifluoromethane	ND	ug/l	2.0	--	--	1
Acetone	ND	ug/l	5.0	--	--	1
Carbon disulfide	ND	ug/l	2.0	--	--	1
2-Butanone	ND	ug/l	5.0	--	--	1
4-Methyl-2-pentanone	ND	ug/l	5.0	--	--	1
2-Hexanone	ND	ug/l	5.0	--	--	1
Bromochloromethane	ND	ug/l	2.0	--	--	1
Tetrahydrofuran	ND	ug/l	2.0	--	--	1
2,2-Dichloropropane	ND	ug/l	2.0	--	--	1
1,2-Dibromoethane	ND	ug/l	2.0	--	--	1
1,3-Dichloropropane	ND	ug/l	2.0	--	--	1
1,1,1,2-Tetrachloroethane	ND	ug/l	1.0	--	--	1
Bromobenzene	ND	ug/l	2.0	--	--	1
n-Butylbenzene	ND	ug/l	2.0	--	--	1
sec-Butylbenzene	ND	ug/l	2.0	--	--	1
tert-Butylbenzene	ND	ug/l	2.0	--	--	1
o-Chlorotoluene	ND	ug/l	2.0	--	--	1
p-Chlorotoluene	ND	ug/l	2.0	--	--	1
1,2-Dibromo-3-chloropropane	ND	ug/l	2.0	--	--	1
Hexachlorobutadiene	ND	ug/l	0.60	--	--	1
Isopropylbenzene	ND	ug/l	2.0	--	--	1
p-Isopropyltoluene	ND	ug/l	2.0	--	--	1
Naphthalene	ND	ug/l	2.0	--	--	1
n-Propylbenzene	ND	ug/l	2.0	--	--	1
1,2,3-Trichlorobenzene	ND	ug/l	2.0	--	--	1
1,2,4-Trichlorobenzene	ND	ug/l	2.0	--	--	1



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1705151  
**Report Date:** 02/22/17

**SAMPLE RESULTS**

Lab ID: L1705151-07  
Client ID: VES-111 (MW)  
Sample Location: MA

Date Collected: 02/17/17 14:25  
Date Received: 02/17/17  
Field Prep: Field Filtered (Dissolved Metals)

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>MCP Volatile Organics - Westborough Lab</b>						
1,3,5-Trimethylbenzene	ND		ug/l	2.0	--	1
1,2,4-Trimethylbenzene	ND		ug/l	2.0	--	1
Ethyl ether	ND		ug/l	2.0	--	1
Isopropyl Ether	ND		ug/l	2.0	--	1
Ethyl-Tert-Butyl-Ether	ND		ug/l	2.0	--	1
Tertiary-Amyl Methyl Ether	ND		ug/l	2.0	--	1
1,4-Dioxane	ND		ug/l	250	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	121		70-130
Toluene-d8	92		70-130
4-Bromofluorobenzene	96		70-130
Dibromofluoromethane	125		70-130

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1705151  
**Report Date:** 02/22/17

**Method Blank Analysis**  
**Batch Quality Control**

Analytical Method: 97,8260C  
Analytical Date: 02/20/17 06:45  
Analyst: MM

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics - Westborough Lab for sample(s):	01-07		Batch:	WG979299-5	
Methylene chloride	ND		ug/l	2.0	--
1,1-Dichloroethane	ND		ug/l	1.0	--
Chloroform	ND		ug/l	1.0	--
Carbon tetrachloride	ND		ug/l	1.0	--
1,2-Dichloropropane	ND		ug/l	1.0	--
Dibromochloromethane	ND		ug/l	1.0	--
1,1,2-Trichloroethane	ND		ug/l	1.0	--
Tetrachloroethene	ND		ug/l	1.0	--
Chlorobenzene	ND		ug/l	1.0	--
Trichlorofluoromethane	ND		ug/l	2.0	--
1,2-Dichloroethane	ND		ug/l	1.0	--
1,1,1-Trichloroethane	ND		ug/l	1.0	--
Bromodichloromethane	ND		ug/l	1.0	--
trans-1,3-Dichloropropene	ND		ug/l	0.50	--
cis-1,3-Dichloropropene	ND		ug/l	0.50	--
1,3-Dichloropropene, Total	ND		ug/l	0.50	--
1,1-Dichloropropene	ND		ug/l	2.0	--
Bromoform	ND		ug/l	2.0	--
1,1,2,2-Tetrachloroethane	ND		ug/l	1.0	--
Benzene	ND		ug/l	0.50	--
Toluene	ND		ug/l	1.0	--
Ethylbenzene	ND		ug/l	1.0	--
Chloromethane	ND		ug/l	2.0	--
Bromomethane	ND		ug/l	2.0	--
Vinyl chloride	ND		ug/l	1.0	--
Chloroethane	ND		ug/l	2.0	--
1,1-Dichloroethene	ND		ug/l	1.0	--
trans-1,2-Dichloroethene	ND		ug/l	1.0	--
Trichloroethene	ND		ug/l	1.0	--



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1705151  
**Report Date:** 02/22/17

**Method Blank Analysis**  
**Batch Quality Control**

Analytical Method: 97,8260C  
Analytical Date: 02/20/17 06:45  
Analyst: MM

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics - Westborough Lab for sample(s):	01-07		Batch:	WG979299-5	
1,2-Dichlorobenzene	ND		ug/l	1.0	--
1,3-Dichlorobenzene	ND		ug/l	1.0	--
1,4-Dichlorobenzene	ND		ug/l	1.0	--
Methyl tert butyl ether	ND		ug/l	2.0	--
p/m-Xylene	ND		ug/l	2.0	--
o-Xylene	ND		ug/l	1.0	--
Xylene (Total)	ND		ug/l	1.0	--
cis-1,2-Dichloroethene	ND		ug/l	1.0	--
1,2-Dichloroethene (total)	ND		ug/l	1.0	--
Dibromomethane	ND		ug/l	2.0	--
1,2,3-Trichloropropane	ND		ug/l	2.0	--
Styrene	ND		ug/l	1.0	--
Dichlorodifluoromethane	ND		ug/l	2.0	--
Acetone	ND		ug/l	5.0	--
Carbon disulfide	ND		ug/l	2.0	--
2-Butanone	ND		ug/l	5.0	--
4-Methyl-2-pentanone	ND		ug/l	5.0	--
2-Hexanone	ND		ug/l	5.0	--
Bromochloromethane	ND		ug/l	2.0	--
Tetrahydrofuran	ND		ug/l	2.0	--
2,2-Dichloropropane	ND		ug/l	2.0	--
1,2-Dibromoethane	ND		ug/l	2.0	--
1,3-Dichloropropane	ND		ug/l	2.0	--
1,1,1,2-Tetrachloroethane	ND		ug/l	1.0	--
Bromobenzene	ND		ug/l	2.0	--
n-Butylbenzene	ND		ug/l	2.0	--
sec-Butylbenzene	ND		ug/l	2.0	--
tert-Butylbenzene	ND		ug/l	2.0	--
o-Chlorotoluene	ND		ug/l	2.0	--



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1705151  
**Report Date:** 02/22/17

### Method Blank Analysis Batch Quality Control

Analytical Method: 97,8260C  
Analytical Date: 02/20/17 06:45  
Analyst: MM

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics - Westborough Lab for sample(s):	01-07		Batch:	WG979299-5	
p-Chlorotoluene	ND		ug/l	2.0	--
1,2-Dibromo-3-chloropropane	ND		ug/l	2.0	--
Hexachlorobutadiene	ND		ug/l	0.60	--
Isopropylbenzene	ND		ug/l	2.0	--
p-Isopropyltoluene	ND		ug/l	2.0	--
Naphthalene	ND		ug/l	2.0	--
n-Propylbenzene	ND		ug/l	2.0	--
1,2,3-Trichlorobenzene	ND		ug/l	2.0	--
1,2,4-Trichlorobenzene	ND		ug/l	2.0	--
1,3,5-Trimethylbenzene	ND		ug/l	2.0	--
1,2,4-Trimethylbenzene	ND		ug/l	2.0	--
Ethyl ether	ND		ug/l	2.0	--
Isopropyl Ether	ND		ug/l	2.0	--
Ethyl-Tert-Butyl-Ether	ND		ug/l	2.0	--
Tertiary-Amyl Methyl Ether	ND		ug/l	2.0	--
1,4-Dioxane	ND		ug/l	250	--
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND		ug/l	2.0	--
tert-Butyl Alcohol	ND		ug/l	10	--
2-Chloroethylvinyl ether	ND		ug/l	10	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	113		70-130
Toluene-d8	94		70-130
4-Bromofluorobenzene	99		70-130
Dibromofluoromethane	118		70-130



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1705151  
**Report Date:** 02/22/17

**Method Blank Analysis**  
**Batch Quality Control**

Analytical Method: 97,8260C-SIM  
Analytical Date: 02/20/17 06:45  
Analyst: MM

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics by SIM - Westborough Lab for sample(s): 01,04,06 Batch: WG979334-5					
1,4-Dioxane	ND		ug/l	3.0	--

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1705151  
**Report Date:** 02/22/17

**Method Blank Analysis**  
**Batch Quality Control**

Analytical Method: 14,504.1  
Analytical Date: 02/21/17 15:00  
Analyst: SR

Extraction Method: EPA 8011  
Extraction Date: 02/21/17 14:05

Parameter	Result	Qualifier	Units	RL	MDL
Microextractables by GC - Westborough Lab for sample(s): 01,04,06 Batch: WG979722-1					
1,2-Dibromoethane	ND		ug/l	0.010	-- A

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1705151  
**Report Date:** 02/22/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics - Westborough Lab Associated sample(s): 01-07 Batch: WG979299-3 WG979299-4								
Methylene chloride	100		110		70-130	10		20
1,1-Dichloroethane	110		110		70-130	0		20
Chloroform	110		110		70-130	0		20
Carbon tetrachloride	120		120		70-130	0		20
1,2-Dichloropropane	100		100		70-130	0		20
Dibromochloromethane	110		110		70-130	0		20
1,1,2-Trichloroethane	100		100		70-130	0		20
Tetrachloroethene	110		110		70-130	0		20
Chlorobenzene	100		99		70-130	1		20
Trichlorofluoromethane	130		120		70-130	8		20
1,2-Dichloroethane	110		110		70-130	0		20
1,1,1-Trichloroethane	120		120		70-130	0		20
Bromodichloromethane	110		100		70-130	10		20
trans-1,3-Dichloropropene	98		98		70-130	0		20
cis-1,3-Dichloropropene	100		100		70-130	0		20
1,1-Dichloropropene	100		100		70-130	0		20
Bromoform	93		94		70-130	1		20
1,1,2,2-Tetrachloroethane	91		92		70-130	1		20
Benzene	100		100		70-130	0		20
Toluene	100		99		70-130	1		20
Ethylbenzene	100		100		70-130	0		20

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1705151  
**Report Date:** 02/22/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics - Westborough Lab Associated sample(s): 01-07 Batch: WG979299-3 WG979299-4								
Chloromethane	110		100		70-130	10		20
Bromomethane	93		110		70-130	17		20
Vinyl chloride	100		100		70-130	0		20
Chloroethane	100		89		70-130	12		20
1,1-Dichloroethene	110		88		70-130	22	Q	20
trans-1,2-Dichloroethene	100		100		70-130	0		20
Trichloroethene	110		110		70-130	0		20
1,2-Dichlorobenzene	95		95		70-130	0		20
1,3-Dichlorobenzene	99		97		70-130	2		20
1,4-Dichlorobenzene	97		95		70-130	2		20
Methyl tert butyl ether	98		100		70-130	2		20
p/m-Xylene	105		100		70-130	5		20
o-Xylene	100		95		70-130	5		20
cis-1,2-Dichloroethene	100		100		70-130	0		20
Dibromomethane	110		110		70-130	0		20
1,2,3-Trichloropropane	92		89		70-130	3		20
Styrene	95		90		70-130	5		20
Dichlorodifluoromethane	100		100		70-130	0		20
Acetone	110		110		70-130	0		20
Carbon disulfide	110		85		70-130	26	Q	20
2-Butanone	100		100		70-130	0		20

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1705151  
**Report Date:** 02/22/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics - Westborough Lab Associated sample(s): 01-07 Batch: WG979299-3 WG979299-4								
4-Methyl-2-pentanone	82		88		70-130	7		20
2-Hexanone	75		74		70-130	1		20
Bromochloromethane	120		120		70-130	0		20
Tetrahydrofuran	98		100		70-130	2		20
2,2-Dichloropropane	120		110		70-130	9		20
1,2-Dibromoethane	100		100		70-130	0		20
1,3-Dichloropropane	99		100		70-130	1		20
1,1,1,2-Tetrachloroethane	110		110		70-130	0		20
Bromobenzene	94		94		70-130	0		20
n-Butylbenzene	91		90		70-130	1		20
sec-Butylbenzene	120		100		70-130	18		20
tert-Butylbenzene	86		84		70-130	2		20
o-Chlorotoluene	97		96		70-130	1		20
p-Chlorotoluene	94		94		70-130	0		20
1,2-Dibromo-3-chloropropane	91		94		70-130	3		20
Hexachlorobutadiene	99		98		70-130	1		20
Isopropylbenzene	85		84		70-130	1		20
p-Isopropyltoluene	88		86		70-130	2		20
Naphthalene	71		74		70-130	4		20
n-Propylbenzene	93		93		70-130	0		20
1,2,3-Trichlorobenzene	90		93		70-130	3		20

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1705151  
**Report Date:** 02/22/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics - Westborough Lab Associated sample(s): 01-07 Batch: WG979299-3 WG979299-4								
1,2,4-Trichlorobenzene	82		81		70-130	1		20
1,3,5-Trimethylbenzene	93		91		70-130	2		20
1,2,4-Trimethylbenzene	91		89		70-130	2		20
Ethyl ether	99		81		70-130	20		20
Isopropyl Ether	90		92		70-130	2		20
Ethyl-Tert-Butyl-Ether	97		100		70-130	3		20
Tertiary-Amyl Methyl Ether	94		98		70-130	4		20
1,4-Dioxane	92		102		70-130	10		20
1,1,2-Trichloro-1,2,2-Trifluoroethane	120		100		70-130	18		20
tert-Butyl Alcohol	100		110		70-130	10		20
2-Chloroethylvinyl ether	<b>68</b>	Q	70		70-130	3		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	104		105		70-130
Toluene-d8	96		96		70-130
4-Bromofluorobenzene	92		95		70-130
Dibromofluoromethane	104		105		70-130

**Lab Control Sample Analysis**  
**Batch Quality Control**

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1705151  
**Report Date:** 02/22/17

<b>Parameter</b>	<i>LCS</i> <i>%Recovery</i>	<i>Qual</i>	<i>LCSD</i> <i>%Recovery</i>	<i>Qual</i>	<i>%Recovery</i> <i>Limits</i>	<i>RPD</i>	<i>Qual</i>	<i>RPD</i> <i>Limits</i>
MCP Volatile Organics by SIM - Westborough Lab Associated sample(s): 01,04,06 Batch: WG979334-3 WG979334-4								
1,4-Dioxane	100		110		70-130	10		20

**Lab Control Sample Analysis**  
**Batch Quality Control**

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1705151  
**Report Date:** 02/22/17

<b>Parameter</b>	<i>LCS</i> %Recovery	<i>LCSD</i> %Recovery	<i>%Recovery Limits</i>	<i>RPD</i>	<i>Qual</i>	<i>RPD Limits</i>	<i>Column</i>
	<i>Qual</i>	<i>Qual</i>				<i>Qual</i>	
Microextractables by GC - Westborough Lab Associated sample(s): 01,04,06 Batch: WG979722-2							
1,2-Dibromoethane	120	-	70-130	-	20	A	

**Matrix Spike Analysis**  
**Batch Quality Control**

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1705151  
**Report Date:** 02/22/17

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	RPD Qual	RPD Limits	Column
Microextractables by GC - Westborough Lab Associated sample(s): 01,04,06 QC Batch ID: WG979722-3 QC Sample: L1705151-06 Client ID: VES-119 (MW)													
1,2-Dibromoethane	ND	0.297	0.357	120	-	-	-	-	70-130	-	20	A	

# **SEMIVOLATILES**



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1705151  
**Report Date:** 02/22/17

**SAMPLE RESULTS**

Lab ID: L1705151-01  
Client ID: VES-125 (MW)  
Sample Location: MA  
Matrix: Water  
Analytical Method: 1,8270D  
Analytical Date: 02/19/17 21:55  
Analyst: MW

Date Collected: 02/17/17 08:50  
Date Received: 02/17/17  
Field Prep: Field Filtered (Dissolved Metals)  
Extraction Method:EPA 3510C  
Extraction Date: 02/18/17 08:23

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>Semivolatile Organics by GC/MS - Westborough Lab</b>						
Benzidine	ND	ug/l	20	--	--	1
1,2,4-Trichlorobenzene	ND	ug/l	5.0	--	--	1
Bis(2-chloroethyl)ether	ND	ug/l	2.0	--	--	1
1,2-Dichlorobenzene	ND	ug/l	2.0	--	--	1
1,3-Dichlorobenzene	ND	ug/l	2.0	--	--	1
1,4-Dichlorobenzene	ND	ug/l	2.0	--	--	1
3,3'-Dichlorobenzidine	ND	ug/l	5.0	--	--	1
2,4-Dinitrotoluene	ND	ug/l	5.0	--	--	1
2,6-Dinitrotoluene	ND	ug/l	5.0	--	--	1
Azobenzene	ND	ug/l	2.0	--	--	1
4-Chlorophenyl phenyl ether	ND	ug/l	2.0	--	--	1
4-Bromophenyl phenyl ether	ND	ug/l	2.0	--	--	1
Bis(2-chloroisopropyl)ether	ND	ug/l	2.0	--	--	1
Bis(2-chloroethoxy)methane	ND	ug/l	5.0	--	--	1
Hexachlorocyclopentadiene	ND	ug/l	20	--	--	1
Isophorone	ND	ug/l	5.0	--	--	1
Nitrobenzene	ND	ug/l	2.0	--	--	1
NDPA/DPA	ND	ug/l	2.0	--	--	1
n-Nitrosodi-n-propylamine	ND	ug/l	5.0	--	--	1
Bis(2-ethylhexyl)phthalate	ND	ug/l	3.0	--	--	1
Butyl benzyl phthalate	ND	ug/l	5.0	--	--	1
Di-n-butylphthalate	ND	ug/l	5.0	--	--	1
Di-n-octylphthalate	ND	ug/l	5.0	--	--	1
Diethyl phthalate	ND	ug/l	5.0	--	--	1
Dimethyl phthalate	ND	ug/l	5.0	--	--	1
Biphenyl	ND	ug/l	2.0	--	--	1
Aniline	ND	ug/l	2.0	--	--	1
4-Chloroaniline	ND	ug/l	5.0	--	--	1
2-Nitroaniline	ND	ug/l	5.0	--	--	1



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1705151  
**Report Date:** 02/22/17

**SAMPLE RESULTS**

Lab ID:	L1705151-01	Date Collected:	02/17/17 08:50
Client ID:	VES-125 (MW)	Date Received:	02/17/17
Sample Location:	MA	Field Prep:	Field Filtered (Dissolved Metals)

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>Semivolatile Organics by GC/MS - Westborough Lab</b>						
3-Nitroaniline	ND		ug/l	5.0	--	1
4-Nitroaniline	ND		ug/l	5.0	--	1
Dibenzofuran	ND		ug/l	2.0	--	1
n-Nitrosodimethylamine	ND		ug/l	2.0	--	1
2,4,6-Trichlorophenol	ND		ug/l	5.0	--	1
p-Chloro-m-cresol	ND		ug/l	2.0	--	1
2-Chlorophenol	ND		ug/l	2.0	--	1
2,4-Dichlorophenol	ND		ug/l	5.0	--	1
2,4-Dimethylphenol	ND		ug/l	5.0	--	1
2-Nitrophenol	ND		ug/l	10	--	1
4-Nitrophenol	ND		ug/l	10	--	1
2,4-Dinitrophenol	ND		ug/l	20	--	1
4,6-Dinitro-o-cresol	ND		ug/l	10	--	1
Phenol	ND		ug/l	5.0	--	1
2-Methylphenol	ND		ug/l	5.0	--	1
3-Methylphenol/4-Methylphenol	ND		ug/l	5.0	--	1
2,4,5-Trichlorophenol	ND		ug/l	5.0	--	1
Benzoic Acid	ND		ug/l	50	--	1
Benzyl Alcohol	ND		ug/l	2.0	--	1
Carbazole	ND		ug/l	2.0	--	1
Pyridine	ND		ug/l	3.5	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	44		21-120
Phenol-d6	33		10-120
Nitrobenzene-d5	75		23-120
2-Fluorobiphenyl	68		15-120
2,4,6-Tribromophenol	88		10-120
4-Terphenyl-d14	76		41-149

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1705151  
**Report Date:** 02/22/17

**SAMPLE RESULTS**

Lab ID:	L1705151-01	Date Collected:	02/17/17 08:50
Client ID:	VES-125 (MW)	Date Received:	02/17/17
Sample Location:	MA	Field Prep:	Field Filtered (Dissolved Metals)
Matrix:	Water	Extraction Method:	EPA 3510C
Analytical Method:	1,8270D-SIM	Extraction Date:	02/18/17 08:25
Analytical Date:	02/19/17 19:22		
Analyst:	KL		

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>Semivolatile Organics by GC/MS-SIM - Westborough Lab</b>						
Acenaphthene	ND	ug/l	0.10	--	--	1
2-Chloronaphthalene	ND	ug/l	0.20	--	--	1
Fluoranthene	ND	ug/l	0.20	--	--	1
Hexachlorobutadiene	ND	ug/l	0.50	--	--	1
Naphthalene	ND	ug/l	0.20	--	--	1
Benzo(a)anthracene	ND	ug/l	0.20	--	--	1
Benzo(a)pyrene	ND	ug/l	0.20	--	--	1
Benzo(b)fluoranthene	ND	ug/l	0.20	--	--	1
Benzo(k)fluoranthene	ND	ug/l	0.20	--	--	1
Chrysene	ND	ug/l	0.20	--	--	1
Acenaphthylene	ND	ug/l	0.20	--	--	1
Anthracene	ND	ug/l	0.20	--	--	1
Benzo(ghi)perylene	ND	ug/l	0.20	--	--	1
Fluorene	ND	ug/l	0.20	--	--	1
Phenanthrene	ND	ug/l	0.20	--	--	1
Dibenzo(a,h)anthracene	ND	ug/l	0.20	--	--	1
Indeno(1,2,3-cd)pyrene	ND	ug/l	0.20	--	--	1
Pyrene	ND	ug/l	0.20	--	--	1
1-Methylnaphthalene	ND	ug/l	0.20	--	--	1
2-Methylnaphthalene	ND	ug/l	0.20	--	--	1
Pentachlorophenol	ND	ug/l	0.80	--	--	1
Hexachlorobenzene	ND	ug/l	0.80	--	--	1
Hexachloroethane	ND	ug/l	0.80	--	--	1

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1705151  
**Report Date:** 02/22/17

**SAMPLE RESULTS**

Lab ID: L1705151-01  
Client ID: VES-125 (MW)  
Sample Location: MA

Date Collected: 02/17/17 08:50  
Date Received: 02/17/17  
Field Prep: Field Filtered (Dissolved Metals)

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Surrogate	% Recovery	Qualifier		Acceptance Criteria		
2-Fluorophenol	38			21-120		
Phenol-d6	29			10-120		
Nitrobenzene-d5	65			23-120		
2-Fluorobiphenyl	53			15-120		
2,4,6-Tribromophenol	71			10-120		
4-Terphenyl-d14	62			41-149		

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1705151  
**Report Date:** 02/22/17

**SAMPLE RESULTS**

Lab ID: L1705151-04  
Client ID: VES-110 (MW)  
Sample Location: MA  
Matrix: Water  
Analytical Method: 1,8270D  
Analytical Date: 02/19/17 22:21  
Analyst: MW

Date Collected: 02/17/17 12:00  
Date Received: 02/17/17  
Field Prep: Field Filtered (Dissolved Metals)  
Extraction Method:EPA 3510C  
Extraction Date: 02/18/17 08:23

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>Semivolatile Organics by GC/MS - Westborough Lab</b>						
Benzidine	ND	ug/l	20	--	--	1
1,2,4-Trichlorobenzene	ND	ug/l	5.0	--	--	1
Bis(2-chloroethyl)ether	ND	ug/l	2.0	--	--	1
1,2-Dichlorobenzene	ND	ug/l	2.0	--	--	1
1,3-Dichlorobenzene	ND	ug/l	2.0	--	--	1
1,4-Dichlorobenzene	ND	ug/l	2.0	--	--	1
3,3'-Dichlorobenzidine	ND	ug/l	5.0	--	--	1
2,4-Dinitrotoluene	ND	ug/l	5.0	--	--	1
2,6-Dinitrotoluene	ND	ug/l	5.0	--	--	1
Azobenzene	ND	ug/l	2.0	--	--	1
4-Chlorophenyl phenyl ether	ND	ug/l	2.0	--	--	1
4-Bromophenyl phenyl ether	ND	ug/l	2.0	--	--	1
Bis(2-chloroisopropyl)ether	ND	ug/l	2.0	--	--	1
Bis(2-chloroethoxy)methane	ND	ug/l	5.0	--	--	1
Hexachlorocyclopentadiene	ND	ug/l	20	--	--	1
Isophorone	ND	ug/l	5.0	--	--	1
Nitrobenzene	ND	ug/l	2.0	--	--	1
NDPA/DPA	ND	ug/l	2.0	--	--	1
n-Nitrosodi-n-propylamine	ND	ug/l	5.0	--	--	1
Bis(2-ethylhexyl)phthalate	ND	ug/l	3.0	--	--	1
Butyl benzyl phthalate	ND	ug/l	5.0	--	--	1
Di-n-butylphthalate	ND	ug/l	5.0	--	--	1
Di-n-octylphthalate	ND	ug/l	5.0	--	--	1
Diethyl phthalate	ND	ug/l	5.0	--	--	1
Dimethyl phthalate	ND	ug/l	5.0	--	--	1
Biphenyl	ND	ug/l	2.0	--	--	1
Aniline	ND	ug/l	2.0	--	--	1
4-Chloroaniline	ND	ug/l	5.0	--	--	1
2-Nitroaniline	ND	ug/l	5.0	--	--	1



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1705151  
**Report Date:** 02/22/17

**SAMPLE RESULTS**

Lab ID:	L1705151-04	Date Collected:	02/17/17 12:00
Client ID:	VES-110 (MW)	Date Received:	02/17/17
Sample Location:	MA	Field Prep:	Field Filtered (Dissolved Metals)

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>Semivolatile Organics by GC/MS - Westborough Lab</b>						
3-Nitroaniline	ND		ug/l	5.0	--	1
4-Nitroaniline	ND		ug/l	5.0	--	1
Dibenzofuran	ND		ug/l	2.0	--	1
n-Nitrosodimethylamine	ND		ug/l	2.0	--	1
2,4,6-Trichlorophenol	ND		ug/l	5.0	--	1
p-Chloro-m-cresol	ND		ug/l	2.0	--	1
2-Chlorophenol	ND		ug/l	2.0	--	1
2,4-Dichlorophenol	ND		ug/l	5.0	--	1
2,4-Dimethylphenol	ND		ug/l	5.0	--	1
2-Nitrophenol	ND		ug/l	10	--	1
4-Nitrophenol	ND		ug/l	10	--	1
2,4-Dinitrophenol	ND		ug/l	20	--	1
4,6-Dinitro-o-cresol	ND		ug/l	10	--	1
Phenol	ND		ug/l	5.0	--	1
2-Methylphenol	ND		ug/l	5.0	--	1
3-Methylphenol/4-Methylphenol	ND		ug/l	5.0	--	1
2,4,5-Trichlorophenol	ND		ug/l	5.0	--	1
Benzoic Acid	ND		ug/l	50	--	1
Benzyl Alcohol	ND		ug/l	2.0	--	1
Carbazole	ND		ug/l	2.0	--	1
Pyridine	ND		ug/l	3.5	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	43		21-120
Phenol-d6	33		10-120
Nitrobenzene-d5	66		23-120
2-Fluorobiphenyl	65		15-120
2,4,6-Tribromophenol	86		10-120
4-Terphenyl-d14	74		41-149

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1705151  
**Report Date:** 02/22/17

**SAMPLE RESULTS**

Lab ID:	L1705151-04	Date Collected:	02/17/17 12:00
Client ID:	VES-110 (MW)	Date Received:	02/17/17
Sample Location:	MA	Field Prep:	Field Filtered (Dissolved Metals)
Matrix:	Water	Extraction Method:	EPA 3510C
Analytical Method:	1,8270D-SIM	Extraction Date:	02/18/17 08:25
Analytical Date:	02/20/17 08:50		
Analyst:	KL		

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>Semivolatile Organics by GC/MS-SIM - Westborough Lab</b>						
Acenaphthene	ND	ug/l	0.10	--	--	1
2-Chloronaphthalene	ND	ug/l	0.20	--	--	1
Fluoranthene	ND	ug/l	0.20	--	--	1
Hexachlorobutadiene	ND	ug/l	0.50	--	--	1
Naphthalene	ND	ug/l	0.20	--	--	1
Benzo(a)anthracene	ND	ug/l	0.20	--	--	1
Benzo(a)pyrene	ND	ug/l	0.20	--	--	1
Benzo(b)fluoranthene	ND	ug/l	0.20	--	--	1
Benzo(k)fluoranthene	ND	ug/l	0.20	--	--	1
Chrysene	ND	ug/l	0.20	--	--	1
Acenaphthylene	ND	ug/l	0.20	--	--	1
Anthracene	ND	ug/l	0.20	--	--	1
Benzo(ghi)perylene	ND	ug/l	0.20	--	--	1
Fluorene	ND	ug/l	0.20	--	--	1
Phenanthrene	ND	ug/l	0.20	--	--	1
Dibenzo(a,h)anthracene	ND	ug/l	0.20	--	--	1
Indeno(1,2,3-cd)pyrene	ND	ug/l	0.20	--	--	1
Pyrene	ND	ug/l	0.20	--	--	1
1-Methylnaphthalene	ND	ug/l	0.20	--	--	1
2-Methylnaphthalene	ND	ug/l	0.20	--	--	1
Pentachlorophenol	ND	ug/l	0.80	--	--	1
Hexachlorobenzene	ND	ug/l	0.80	--	--	1
Hexachloroethane	ND	ug/l	0.80	--	--	1

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1705151  
**Report Date:** 02/22/17

**SAMPLE RESULTS**

Lab ID: L1705151-04  
Client ID: VES-110 (MW)  
Sample Location: MA

Date Collected: 02/17/17 12:00  
Date Received: 02/17/17  
Field Prep: Field Filtered (Dissolved Metals)

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Surrogate	% Recovery	Qualifier	Acceptance Criteria			
2-Fluorophenol	39		21-120			
Phenol-d6	32		10-120			
Nitrobenzene-d5	65		23-120			
2-Fluorobiphenyl	58		15-120			
2,4,6-Tribromophenol	78		10-120			
4-Terphenyl-d14	69		41-149			

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1705151  
**Report Date:** 02/22/17

**SAMPLE RESULTS**

Lab ID: L1705151-06  
Client ID: VES-119 (MW)  
Sample Location: MA  
Matrix: Water  
Analytical Method: 1,8270D  
Analytical Date: 02/19/17 22:46  
Analyst: MW

Date Collected: 02/17/17 11:30  
Date Received: 02/17/17  
Field Prep: Field Filtered (Dissolved Metals)  
Extraction Method:EPA 3510C  
Extraction Date: 02/18/17 08:23

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>Semivolatile Organics by GC/MS - Westborough Lab</b>						
Benzidine	ND	ug/l	20	--	--	1
1,2,4-Trichlorobenzene	ND	ug/l	5.0	--	--	1
Bis(2-chloroethyl)ether	ND	ug/l	2.0	--	--	1
1,2-Dichlorobenzene	ND	ug/l	2.0	--	--	1
1,3-Dichlorobenzene	ND	ug/l	2.0	--	--	1
1,4-Dichlorobenzene	ND	ug/l	2.0	--	--	1
3,3'-Dichlorobenzidine	ND	ug/l	5.0	--	--	1
2,4-Dinitrotoluene	ND	ug/l	5.0	--	--	1
2,6-Dinitrotoluene	ND	ug/l	5.0	--	--	1
Azobenzene	ND	ug/l	2.0	--	--	1
4-Chlorophenyl phenyl ether	ND	ug/l	2.0	--	--	1
4-Bromophenyl phenyl ether	ND	ug/l	2.0	--	--	1
Bis(2-chloroisopropyl)ether	ND	ug/l	2.0	--	--	1
Bis(2-chloroethoxy)methane	ND	ug/l	5.0	--	--	1
Hexachlorocyclopentadiene	ND	ug/l	20	--	--	1
Isophorone	ND	ug/l	5.0	--	--	1
Nitrobenzene	ND	ug/l	2.0	--	--	1
NDPA/DPA	ND	ug/l	2.0	--	--	1
n-Nitrosodi-n-propylamine	ND	ug/l	5.0	--	--	1
Bis(2-ethylhexyl)phthalate	ND	ug/l	3.0	--	--	1
Butyl benzyl phthalate	ND	ug/l	5.0	--	--	1
Di-n-butylphthalate	ND	ug/l	5.0	--	--	1
Di-n-octylphthalate	ND	ug/l	5.0	--	--	1
Diethyl phthalate	ND	ug/l	5.0	--	--	1
Dimethyl phthalate	ND	ug/l	5.0	--	--	1
Biphenyl	ND	ug/l	2.0	--	--	1
Aniline	ND	ug/l	2.0	--	--	1
4-Chloroaniline	ND	ug/l	5.0	--	--	1
2-Nitroaniline	ND	ug/l	5.0	--	--	1



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1705151  
**Report Date:** 02/22/17

**SAMPLE RESULTS**

Lab ID:	L1705151-06	Date Collected:	02/17/17 11:30
Client ID:	VES-119 (MW)	Date Received:	02/17/17
Sample Location:	MA	Field Prep:	Field Filtered (Dissolved Metals)

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>Semivolatile Organics by GC/MS - Westborough Lab</b>						
3-Nitroaniline	ND		ug/l	5.0	--	1
4-Nitroaniline	ND		ug/l	5.0	--	1
Dibenzofuran	ND		ug/l	2.0	--	1
n-Nitrosodimethylamine	ND		ug/l	2.0	--	1
2,4,6-Trichlorophenol	ND		ug/l	5.0	--	1
p-Chloro-m-cresol	ND		ug/l	2.0	--	1
2-Chlorophenol	ND		ug/l	2.0	--	1
2,4-Dichlorophenol	ND		ug/l	5.0	--	1
2,4-Dimethylphenol	ND		ug/l	5.0	--	1
2-Nitrophenol	ND		ug/l	10	--	1
4-Nitrophenol	ND		ug/l	10	--	1
2,4-Dinitrophenol	ND		ug/l	20	--	1
4,6-Dinitro-o-cresol	ND		ug/l	10	--	1
Phenol	ND		ug/l	5.0	--	1
2-Methylphenol	ND		ug/l	5.0	--	1
3-Methylphenol/4-Methylphenol	ND		ug/l	5.0	--	1
2,4,5-Trichlorophenol	ND		ug/l	5.0	--	1
Benzoic Acid	ND		ug/l	50	--	1
Benzyl Alcohol	ND		ug/l	2.0	--	1
Carbazole	ND		ug/l	2.0	--	1
Pyridine	ND		ug/l	3.5	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	51		21-120
Phenol-d6	35		10-120
Nitrobenzene-d5	82		23-120
2-Fluorobiphenyl	70		15-120
2,4,6-Tribromophenol	95		10-120
4-Terphenyl-d14	83		41-149

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1705151  
**Report Date:** 02/22/17

**SAMPLE RESULTS**

Lab ID:	L1705151-06	Date Collected:	02/17/17 11:30
Client ID:	VES-119 (MW)	Date Received:	02/17/17
Sample Location:	MA	Field Prep:	Field Filtered (Dissolved Metals)
Matrix:	Water	Extraction Method:	EPA 3510C
Analytical Method:	1,8270D-SIM	Extraction Date:	02/18/17 08:25
Analytical Date:	02/20/17 09:16		
Analyst:	KL		

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>Semivolatile Organics by GC/MS-SIM - Westborough Lab</b>						
Acenaphthene	0.12	ug/l	0.10	--	--	1
2-Chloronaphthalene	ND	ug/l	0.20	--	--	1
Fluoranthene	ND	ug/l	0.20	--	--	1
Hexachlorobutadiene	ND	ug/l	0.50	--	--	1
Naphthalene	ND	ug/l	0.20	--	--	1
Benzo(a)anthracene	ND	ug/l	0.20	--	--	1
Benzo(a)pyrene	ND	ug/l	0.20	--	--	1
Benzo(b)fluoranthene	ND	ug/l	0.20	--	--	1
Benzo(k)fluoranthene	ND	ug/l	0.20	--	--	1
Chrysene	ND	ug/l	0.20	--	--	1
Acenaphthylene	ND	ug/l	0.20	--	--	1
Anthracene	ND	ug/l	0.20	--	--	1
Benzo(ghi)perylene	ND	ug/l	0.20	--	--	1
Fluorene	ND	ug/l	0.20	--	--	1
Phenanthrene	ND	ug/l	0.20	--	--	1
Dibenzo(a,h)anthracene	ND	ug/l	0.20	--	--	1
Indeno(1,2,3-cd)pyrene	ND	ug/l	0.20	--	--	1
Pyrene	ND	ug/l	0.20	--	--	1
1-Methylnaphthalene	ND	ug/l	0.20	--	--	1
2-Methylnaphthalene	ND	ug/l	0.20	--	--	1
Pentachlorophenol	ND	ug/l	0.80	--	--	1
Hexachlorobenzene	ND	ug/l	0.80	--	--	1
Hexachloroethane	ND	ug/l	0.80	--	--	1

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1705151  
**Report Date:** 02/22/17

**SAMPLE RESULTS**

Lab ID: L1705151-06  
Client ID: VES-119 (MW)  
Sample Location: MA

Date Collected: 02/17/17 11:30  
Date Received: 02/17/17  
Field Prep: Field Filtered (Dissolved Metals)

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Surrogate	% Recovery	Qualifier	Acceptance Criteria			
2-Fluorophenol	47		21-120			
Phenol-d6	36		10-120			
Nitrobenzene-d5	84		23-120			
2-Fluorobiphenyl	72		15-120			
2,4,6-Tribromophenol	87		10-120			
4-Terphenyl-d14	77		41-149			

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1705151  
**Report Date:** 02/22/17

### Method Blank Analysis Batch Quality Control

Analytical Method: 1,8270D  
Analytical Date: 02/19/17 18:32  
Analyst: MW

Extraction Method: EPA 3510C  
Extraction Date: 02/18/17 08:23

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 01,04,06 Batch: WG979019-1					
Acenaphthene	ND	ug/l	2.0	--	
Benzidine	ND	ug/l	20	--	
1,2,4-Trichlorobenzene	ND	ug/l	5.0	--	
Hexachlorobenzene	ND	ug/l	2.0	--	
Bis(2-chloroethyl)ether	ND	ug/l	2.0	--	
2-Chloronaphthalene	ND	ug/l	2.0	--	
1,2-Dichlorobenzene	ND	ug/l	2.0	--	
1,3-Dichlorobenzene	ND	ug/l	2.0	--	
1,4-Dichlorobenzene	ND	ug/l	2.0	--	
3,3'-Dichlorobenzidine	ND	ug/l	5.0	--	
2,4-Dinitrotoluene	ND	ug/l	5.0	--	
2,6-Dinitrotoluene	ND	ug/l	5.0	--	
Azobenzene	ND	ug/l	2.0	--	
Fluoranthene	ND	ug/l	2.0	--	
4-Chlorophenyl phenyl ether	ND	ug/l	2.0	--	
4-Bromophenyl phenyl ether	ND	ug/l	2.0	--	
Bis(2-chloroisopropyl)ether	ND	ug/l	2.0	--	
Bis(2-chloroethoxy)methane	ND	ug/l	5.0	--	
Hexachlorobutadiene	ND	ug/l	2.0	--	
Hexachlorocyclopentadiene	ND	ug/l	20	--	
Hexachloroethane	ND	ug/l	2.0	--	
Isophorone	ND	ug/l	5.0	--	
Naphthalene	ND	ug/l	2.0	--	
Nitrobenzene	ND	ug/l	2.0	--	
NDPA/DPA	ND	ug/l	2.0	--	
n-Nitrosodi-n-propylamine	ND	ug/l	5.0	--	
Bis(2-ethylhexyl)phthalate	ND	ug/l	3.0	--	
Butyl benzyl phthalate	ND	ug/l	5.0	--	
Di-n-butylphthalate	ND	ug/l	5.0	--	



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1705151  
**Report Date:** 02/22/17

### Method Blank Analysis Batch Quality Control

Analytical Method: 1,8270D  
Analytical Date: 02/19/17 18:32  
Analyst: MW

Extraction Method: EPA 3510C  
Extraction Date: 02/18/17 08:23

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 01,04,06 Batch: WG979019-1					
Di-n-octylphthalate	ND	ug/l	5.0	--	
Diethyl phthalate	ND	ug/l	5.0	--	
Dimethyl phthalate	ND	ug/l	5.0	--	
Benzo(a)anthracene	ND	ug/l	2.0	--	
Benzo(a)pyrene	ND	ug/l	2.0	--	
Benzo(b)fluoranthene	ND	ug/l	2.0	--	
Benzo(k)fluoranthene	ND	ug/l	2.0	--	
Chrysene	ND	ug/l	2.0	--	
Acenaphthylene	ND	ug/l	2.0	--	
Anthracene	ND	ug/l	2.0	--	
Benzo(ghi)perylene	ND	ug/l	2.0	--	
Fluorene	ND	ug/l	2.0	--	
Phenanthrene	ND	ug/l	2.0	--	
Dibenzo(a,h)anthracene	ND	ug/l	2.0	--	
Indeno(1,2,3-cd)pyrene	ND	ug/l	2.0	--	
Pyrene	ND	ug/l	2.0	--	
Biphenyl	ND	ug/l	2.0	--	
Aniline	ND	ug/l	2.0	--	
4-Chloroaniline	ND	ug/l	5.0	--	
1-Methylnaphthalene	ND	ug/l	2.0	--	
2-Nitroaniline	ND	ug/l	5.0	--	
3-Nitroaniline	ND	ug/l	5.0	--	
4-Nitroaniline	ND	ug/l	5.0	--	
Dibenzofuran	ND	ug/l	2.0	--	
2-Methylnaphthalene	ND	ug/l	2.0	--	
n-Nitrosodimethylamine	ND	ug/l	2.0	--	
2,4,6-Trichlorophenol	ND	ug/l	5.0	--	
p-Chloro-m-cresol	ND	ug/l	2.0	--	
2-Chlorophenol	ND	ug/l	2.0	--	



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1705151  
**Report Date:** 02/22/17

### Method Blank Analysis Batch Quality Control

Analytical Method: 1,8270D  
Analytical Date: 02/19/17 18:32  
Analyst: MW

Extraction Method: EPA 3510C  
Extraction Date: 02/18/17 08:23

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 01,04,06 Batch: WG979019-1					
2,4-Dichlorophenol	ND	ug/l	5.0	--	
2,4-Dimethylphenol	ND	ug/l	5.0	--	
2-Nitrophenol	ND	ug/l	10	--	
4-Nitrophenol	ND	ug/l	10	--	
2,4-Dinitrophenol	ND	ug/l	20	--	
4,6-Dinitro-o-cresol	ND	ug/l	10	--	
Pentachlorophenol	ND	ug/l	10	--	
Phenol	ND	ug/l	5.0	--	
2-Methylphenol	ND	ug/l	5.0	--	
3-Methylphenol/4-Methylphenol	ND	ug/l	5.0	--	
2,4,5-Trichlorophenol	ND	ug/l	5.0	--	
Benzoic Acid	ND	ug/l	50	--	
Benzyl Alcohol	ND	ug/l	2.0	--	
Carbazole	ND	ug/l	2.0	--	
Pyridine	ND	ug/l	3.5	--	

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	49		21-120
Phenol-d6	34		10-120
Nitrobenzene-d5	81		23-120
2-Fluorobiphenyl	74		15-120
2,4,6-Tribromophenol	87		10-120
4-Terphenyl-d14	75		41-149

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1705151  
**Report Date:** 02/22/17

### Method Blank Analysis Batch Quality Control

Analytical Method: 1,8270D-SIM  
Analytical Date: 02/19/17 16:33  
Analyst: KL

Extraction Method: EPA 3510C  
Extraction Date: 02/18/17 08:25

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS-SIM - Westborough Lab for sample(s): 01,04,06				Batch: WG979020-1	
Acenaphthene	ND		ug/l	0.10	--
2-Chloronaphthalene	ND		ug/l	0.20	--
Fluoranthene	ND		ug/l	0.20	--
Hexachlorobutadiene	ND		ug/l	0.50	--
Naphthalene	ND		ug/l	0.20	--
Benzo(a)anthracene	ND		ug/l	0.20	--
Benzo(a)pyrene	ND		ug/l	0.20	--
Benzo(b)fluoranthene	ND		ug/l	0.20	--
Benzo(k)fluoranthene	ND		ug/l	0.20	--
Chrysene	ND		ug/l	0.20	--
Acenaphthylene	ND		ug/l	0.20	--
Anthracene	ND		ug/l	0.20	--
Benzo(ghi)perylene	ND		ug/l	0.20	--
Fluorene	ND		ug/l	0.20	--
Phenanthrene	ND		ug/l	0.20	--
Dibenzo(a,h)anthracene	ND		ug/l	0.20	--
Indeno(1,2,3-cd)pyrene	ND		ug/l	0.20	--
Pyrene	ND		ug/l	0.20	--
1-Methylnaphthalene	ND		ug/l	0.20	--
2-Methylnaphthalene	ND		ug/l	0.20	--
Pentachlorophenol	ND		ug/l	0.80	--
Hexachlorobenzene	ND		ug/l	0.80	--
Hexachloroethane	ND		ug/l	0.80	--

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1705151  
**Report Date:** 02/22/17

### Method Blank Analysis Batch Quality Control

Analytical Method: 1,8270D-SIM  
Analytical Date: 02/19/17 16:33  
Analyst: KL

Extraction Method: EPA 3510C  
Extraction Date: 02/18/17 08:25

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS-SIM - Westborough Lab for sample(s): 01,04,06				Batch: WG979020-1	

Surrogate	%Recovery	Qualifier	Acceptance
			Criteria
2-Fluorophenol	41		21-120
Phenol-d6	29		10-120
Nitrobenzene-d5	69		23-120
2-Fluorobiphenyl	56		15-120
2,4,6-Tribromophenol	71		10-120
4-Terphenyl-d14	66		41-149

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1705151  
**Report Date:** 02/22/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01,04,06 Batch: WG979019-2 WG979019-3							
Acenaphthene	60		66		37-111	10	30
Benzidine	12		0	Q	10-75	NC	30
1,2,4-Trichlorobenzene	48		47		39-98	2	30
Hexachlorobenzene	68		77		40-140	12	30
Bis(2-chloroethyl)ether	60		65		40-140	8	30
2-Chloronaphthalene	55		63		40-140	14	30
1,2-Dichlorobenzene	51		47		40-140	8	30
1,3-Dichlorobenzene	50		44		40-140	13	30
1,4-Dichlorobenzene	51		46		36-97	10	30
3,3'-Dichlorobenzidine	55		63		40-140	14	30
2,4-Dinitrotoluene	77		86		48-143	11	30
2,6-Dinitrotoluene	82		96		40-140	16	30
Azobenzene	68		75		40-140	10	30
Fluoranthene	68		78		40-140	14	30
4-Chlorophenyl phenyl ether	64		71		40-140	10	30
4-Bromophenyl phenyl ether	65		73		40-140	12	30
Bis(2-chloroisopropyl)ether	51		66		40-140	26	30
Bis(2-chloroethoxy)methane	63		74		40-140	16	30
Hexachlorobutadiene	46		40		40-140	14	30
Hexachlorocyclopentadiene	44		42		40-140	5	30
Hexachloroethane	48		46		40-140	4	30

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1705151  
**Report Date:** 02/22/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01,04,06 Batch: WG979019-2 WG979019-3								
Isophorone	62		78		40-140	23		30
Naphthalene	51		51		40-140	0		30
Nitrobenzene	64		77		40-140	18		30
NDPA/DPA	67		76		40-140	13		30
n-Nitrosodi-n-propylamine	61		76		29-132	22		30
Bis(2-ethylhexyl)phthalate	74		86		40-140	15		30
Butyl benzyl phthalate	72		78		40-140	8		30
Di-n-butylphthalate	72		82		40-140	13		30
Di-n-octylphthalate	70		82		40-140	16		30
Diethyl phthalate	69		77		40-140	11		30
Dimethyl phthalate	68		80		40-140	16		30
Benzo(a)anthracene	66		78		40-140	17		30
Benzo(a)pyrene	64		74		40-140	14		30
Benzo(b)fluoranthene	66		77		40-140	15		30
Benzo(k)fluoranthene	65		74		40-140	13		30
Chrysene	66		75		40-140	13		30
Acenaphthylene	61		72		45-123	17		30
Anthracene	69		78		40-140	12		30
Benzo(ghi)perylene	65		72		40-140	10		30
Fluorene	65		73		40-140	12		30
Phenanthrene	67		75		40-140	11		30

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1705151  
**Report Date:** 02/22/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01,04,06 Batch: WG979019-2 WG979019-3								
Dibenzo(a,h)anthracene	64		72		40-140	12		30
Indeno(1,2,3-cd)pyrene	64		72		40-140	12		30
Pyrene	67		76		26-127	13		30
Biphenyl	57		65		40-140	13		30
Aniline	34	Q	30	Q	40-140	13		30
4-Chloroaniline	52		58		40-140	11		30
1-Methylnaphthalene	52		62		41-103	18		30
2-Nitroaniline	79		93		52-143	16		30
3-Nitroaniline	67		74		25-145	10		30
4-Nitroaniline	67		74		51-143	10		30
Dibenzofuran	62		69		40-140	11		30
2-Methylnaphthalene	53		57		40-140	7		30
n-Nitrosodimethylamine	41		39		22-74	5		30
2,4,6-Trichlorophenol	71		83		30-130	16		30
p-Chloro-m-cresol	66		79		23-97	18		30
2-Chlorophenol	58		60		27-123	3		30
2,4-Dichlorophenol	66		73		30-130	10		30
2,4-Dimethylphenol	69		72		30-130	4		30
2-Nitrophenol	71		76		30-130	7		30
4-Nitrophenol	45		50		10-80	11		30
2,4-Dinitrophenol	78		89		20-130	13		30

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1705151  
**Report Date:** 02/22/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01,04,06 Batch: WG979019-2 WG979019-3								
4,6-Dinitro-o-cresol	83		93		20-164	11		30
Pentachlorophenol	62		68		9-103	9		30
Phenol	27		31		12-110	14		30
2-Methylphenol	56		64		30-130	13		30
3-Methylphenol/4-Methylphenol	54		62		30-130	14		30
2,4,5-Trichlorophenol	71		82		30-130	14		30
Benzoic Acid	27		35		10-164	26		30
Benzyl Alcohol	52		63		26-116	19		30
Carbazole	68		76		55-144	11		30
Pyridine	30		10		10-66	100	Q	30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2-Fluorophenol	41		46		21-120
Phenol-d6	29		33		10-120
Nitrobenzene-d5	66		76		23-120
2-Fluorobiphenyl	62		71		15-120
2,4,6-Tribromophenol	75		84		10-120
4-Terphenyl-d14	61		75		41-149

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1705151  
**Report Date:** 02/22/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS-SIM - Westborough Lab Associated sample(s): 01,04,06 Batch: WG979020-2 WG979020-3								
Acenaphthene	53		57		37-111	7		40
2-Chloronaphthalene	54		58		40-140	7		40
Fluoranthene	60		62		40-140	3		40
Hexachlorobutadiene	41		49		40-140	18		40
Naphthalene	49		56		40-140	13		40
Benzo(a)anthracene	59		62		40-140	5		40
Benzo(a)pyrene	55		56		40-140	2		40
Benzo(b)fluoranthene	52		54		40-140	4		40
Benzo(k)fluoranthene	59		63		40-140	7		40
Chrysene	60		63		40-140	5		40
Acenaphthylene	59		64		40-140	8		40
Anthracene	63		66		40-140	5		40
Benzo(ghi)perylene	54		58		40-140	7		40
Fluorene	60		63		40-140	5		40
Phenanthrene	53		54		40-140	2		40
Dibenzo(a,h)anthracene	54		59		40-140	9		40
Indeno(1,2,3-cd)pyrene	54		57		40-140	5		40
Pyrene	60		62		26-127	3		40
1-Methylnaphthalene	49		55		40-140	12		40
2-Methylnaphthalene	48		54		40-140	12		40
Pentachlorophenol	70		72		9-103	3		40

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1705151  
**Report Date:** 02/22/17

<b>Parameter</b>	<i>LCS</i> %Recovery	<i>Qual</i>	<i>LCSD</i> %Recovery	<i>Qual</i>	<i>%Recovery</i> <i>Limits</i>	<i>RPD</i>	<i>Qual</i>	<i>RPD</i> <i>Limits</i>
Semivolatile Organics by GC/MS-SIM - Westborough Lab Associated sample(s): 01,04,06 Batch: WG979020-2 WG979020-3								
Hexachlorobenzene	56		57		40-140	2		40
Hexachloroethane	49		56		40-140	13		40

<b>Surrogate</b>	<i>LCS</i> %Recovery	<i>Qual</i>	<i>LCSD</i> %Recovery	<i>Qual</i>	<b>Acceptance Criteria</b>
2-Fluorophenol	38		41		21-120
Phenol-d6	27		30		10-120
Nitrobenzene-d5	61		68		23-120
2-Fluorobiphenyl	51		55		15-120
2,4,6-Tribromophenol	67		69		10-120
4-Terphenyl-d14	64		63		41-149

# **PETROLEUM HYDROCARBONS**



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1705151  
**Report Date:** 02/22/17

**SAMPLE RESULTS**

Lab ID:	L1705151-01	Date Collected:	02/17/17 08:50
Client ID:	VES-125 (MW)	Date Received:	02/17/17
Sample Location:	MA	Field Prep:	Field Filtered (Dissolved Metals)
Matrix:	Water		
Analytical Method:	100,VPH-04-1.1		
Analytical Date:	02/18/17 18:54		
Analyst:	JM		

**Quality Control Information**

Condition of sample received:	Satisfactory
Aqueous Preservative:	Laboratory Provided Preserved Container
Sample Temperature upon receipt:	Received on Ice

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>Volatile Petroleum Hydrocarbons - Westborough Lab</b>						
C5-C8 Aliphatics	ND		ug/l	50.0	--	1
C9-C12 Aliphatics	ND		ug/l	50.0	--	1
C9-C10 Aromatics	ND		ug/l	50.0	--	1
C5-C8 Aliphatics, Adjusted	ND		ug/l	50.0	--	1
C9-C12 Aliphatics, Adjusted	ND		ug/l	50.0	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2,5-Dibromotoluene-PID	116		70-130
2,5-Dibromotoluene-FID	105		70-130

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1705151  
**Report Date:** 02/22/17

**SAMPLE RESULTS**

Lab ID:	L1705151-01	Date Collected:	02/17/17 08:50
Client ID:	VES-125 (MW)	Date Received:	02/17/17
Sample Location:	MA	Field Prep:	Field Filtered (Dissolved Metals)
Matrix:	Water	Extraction Method:	EPA 3510C
Analytical Method:	98,EPH-04-1.1	Extraction Date:	02/18/17 00:46
Analytical Date:	02/19/17 00:56	M.S. Analytical Date:	02/20/17 09:49
Analyst:	SR	M.S. Analyst:	KL
		Cleanup Method1:	EPH-04-1
		Cleanup Date1:	02/18/17

**Quality Control Information**

Condition of sample received:	Satisfactory
Aqueous Preservative:	Laboratory Provided Preserved Container
Sample Temperature upon receipt:	Received on Ice
Sample Extraction method:	Extracted Per the Method

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>EPH w/MS Targets - Westborough Lab</b>						
C9-C18 Aliphatics	ND		ug/l	100	--	1
C19-C36 Aliphatics	ND		ug/l	100	--	1
C11-C22 Aromatics	ND		ug/l	100	--	1
C11-C22 Aromatics, Adjusted	ND		ug/l	100	--	1
Naphthalene	ND		ug/l	0.400	--	1
2-Methylnaphthalene	ND		ug/l	0.400	--	1
Acenaphthylene	ND		ug/l	0.400	--	1
Acenaphthene	ND		ug/l	0.400	--	1
Fluorene	ND		ug/l	0.400	--	1
Phenanthrene	ND		ug/l	0.400	--	1
Anthracene	ND		ug/l	0.400	--	1
Fluoranthene	ND		ug/l	0.400	--	1
Pyrene	ND		ug/l	0.400	--	1
Benzo(a)anthracene	ND		ug/l	0.400	--	1
Chrysene	ND		ug/l	0.400	--	1
Benzo(b)fluoranthene	ND		ug/l	0.400	--	1
Benzo(k)fluoranthene	ND		ug/l	0.400	--	1
Benzo(a)pyrene	ND		ug/l	0.200	--	1
Indeno(1,2,3-cd)Pyrene	ND		ug/l	0.400	--	1
Dibenzo(a,h)anthracene	ND		ug/l	0.400	--	1
Benzo(ghi)perylene	ND		ug/l	0.400	--	1



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1705151  
**Report Date:** 02/22/17

**SAMPLE RESULTS**

Lab ID:	L1705151-01	Date Collected:	02/17/17 08:50
Client ID:	VES-125 (MW)	Date Received:	02/17/17
Sample Location:	MA	Field Prep:	Field Filtered (Dissolved Metals)

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
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**EPH w/MS Targets - Westborough Lab**

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Chloro-Octadecane	71		40-140
o-Terphenyl	83		40-140
2-Fluorobiphenyl	79		40-140
2-Bromonaphthalene	79		40-140
O-Terphenyl-MS	70		40-140



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1705151  
**Report Date:** 02/22/17

### SAMPLE RESULTS

Lab ID:	L1705151-02	Date Collected:	02/17/17 11:10
Client ID:	VES-109 (MW)	Date Received:	02/17/17
Sample Location:	MA	Field Prep:	Field Filtered (Dissolved Metals)
Matrix:	Water		
Analytical Method:	100,VPH-04-1.1		
Analytical Date:	02/18/17 19:32		
Analyst:	JM		

### Quality Control Information

Condition of sample received:	Satisfactory
Aqueous Preservative:	Laboratory Provided Preserved Container
Sample Temperature upon receipt:	Received on Ice

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>Volatile Petroleum Hydrocarbons - Westborough Lab</b>						
C5-C8 Aliphatics	ND		ug/l	50.0	--	1
C9-C12 Aliphatics	ND		ug/l	50.0	--	1
C9-C10 Aromatics	ND		ug/l	50.0	--	1
C5-C8 Aliphatics, Adjusted	ND		ug/l	50.0	--	1
C9-C12 Aliphatics, Adjusted	ND		ug/l	50.0	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2,5-Dibromotoluene-PID	113		70-130
2,5-Dibromotoluene-FID	103		70-130

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1705151  
**Report Date:** 02/22/17

**SAMPLE RESULTS**

Lab ID:	L1705151-02	Date Collected:	02/17/17 11:10
Client ID:	VES-109 (MW)	Date Received:	02/17/17
Sample Location:	MA	Field Prep:	Field Filtered (Dissolved Metals)
Matrix:	Water	Extraction Method:	EPA 3510C
Analytical Method:	98,EPH-04-1.1	Extraction Date:	02/18/17 00:46
Analytical Date:	02/19/17 01:34	M.S. Analytical Date:	02/20/17 10:13
Analyst:	SR	M.S. Analyst:	KL
		Cleanup Method1:	EPH-04-1
		Cleanup Date1:	02/18/17

**Quality Control Information**

Condition of sample received:	Satisfactory
Aqueous Preservative:	Laboratory Provided Preserved Container
Sample Temperature upon receipt:	Received on Ice
Sample Extraction method:	Extracted Per the Method

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>EPH w/MS Targets - Westborough Lab</b>						
C9-C18 Aliphatics	ND		ug/l	100	--	1
C19-C36 Aliphatics	ND		ug/l	100	--	1
C11-C22 Aromatics	ND		ug/l	100	--	1
C11-C22 Aromatics, Adjusted	ND		ug/l	100	--	1
Naphthalene	1.43		ug/l	0.400	--	1
2-Methylnaphthalene	ND		ug/l	0.400	--	1
Acenaphthylene	ND		ug/l	0.400	--	1
Acenaphthene	1.47		ug/l	0.400	--	1
Fluorene	0.956		ug/l	0.400	--	1
Phenanthrene	1.16		ug/l	0.400	--	1
Anthracene	ND		ug/l	0.400	--	1
Fluoranthene	0.628		ug/l	0.400	--	1
Pyrene	0.462		ug/l	0.400	--	1
Benzo(a)anthracene	ND		ug/l	0.400	--	1
Chrysene	ND		ug/l	0.400	--	1
Benzo(b)fluoranthene	ND		ug/l	0.400	--	1
Benzo(k)fluoranthene	ND		ug/l	0.400	--	1
Benzo(a)pyrene	ND		ug/l	0.200	--	1
Indeno(1,2,3-cd)Pyrene	ND		ug/l	0.400	--	1
Dibenzo(a,h)anthracene	ND		ug/l	0.400	--	1
Benzo(ghi)perylene	ND		ug/l	0.400	--	1



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1705151  
**Report Date:** 02/22/17

**SAMPLE RESULTS**

Lab ID:	L1705151-02	Date Collected:	02/17/17 11:10
Client ID:	VES-109 (MW)	Date Received:	02/17/17
Sample Location:	MA	Field Prep:	Field Filtered (Dissolved Metals)

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
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**EPH w/MS Targets - Westborough Lab**

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Chloro-Octadecane	68		40-140
o-Terphenyl	77		40-140
2-Fluorobiphenyl	81		40-140
2-Bromonaphthalene	82		40-140
O-Terphenyl-MS	60		40-140



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1705151  
**Report Date:** 02/22/17

**SAMPLE RESULTS**

Lab ID:	L1705151-03	Date Collected:	02/17/17 13:40
Client ID:	VES-108 (MW)	Date Received:	02/17/17
Sample Location:	MA	Field Prep:	Field Filtered (Dissolved Metals)
Matrix:	Water		
Analytical Method:	100,VPH-04-1.1		
Analytical Date:	02/18/17 20:11		
Analyst:	JM		

**Quality Control Information**

Condition of sample received:	Satisfactory
Aqueous Preservative:	Laboratory Provided Preserved Container
Sample Temperature upon receipt:	Received on Ice

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>Volatile Petroleum Hydrocarbons - Westborough Lab</b>						
C5-C8 Aliphatics	ND		ug/l	50.0	--	1
C9-C12 Aliphatics	ND		ug/l	50.0	--	1
C9-C10 Aromatics	ND		ug/l	50.0	--	1
C5-C8 Aliphatics, Adjusted	ND		ug/l	50.0	--	1
C9-C12 Aliphatics, Adjusted	ND		ug/l	50.0	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2,5-Dibromotoluene-PID	120		70-130
2,5-Dibromotoluene-FID	109		70-130

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1705151  
**Report Date:** 02/22/17

**SAMPLE RESULTS**

Lab ID:	L1705151-03	Date Collected:	02/17/17 13:40
Client ID:	VES-108 (MW)	Date Received:	02/17/17
Sample Location:	MA	Field Prep:	Field Filtered (Dissolved Metals)
Matrix:	Water	Extraction Method:	EPA 3510C
Analytical Method:	98,EPH-04-1.1	Extraction Date:	02/18/17 00:46
Analytical Date:	02/19/17 02:12	M.S. Analytical Date:	02/20/17 10:38
Analyst:	SR	M.S. Analyst:	KL
		Cleanup Method1:	EPH-04-1
		Cleanup Date1:	02/18/17

**Quality Control Information**

Condition of sample received:	Satisfactory
Aqueous Preservative:	Laboratory Provided Preserved Container
Sample Temperature upon receipt:	Received on Ice
Sample Extraction method:	Extracted Per the Method

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>EPH w/MS Targets - Westborough Lab</b>						
C9-C18 Aliphatics	ND		ug/l	100	--	1
C19-C36 Aliphatics	ND		ug/l	100	--	1
C11-C22 Aromatics	ND		ug/l	100	--	1
C11-C22 Aromatics, Adjusted	ND		ug/l	100	--	1
Naphthalene	ND		ug/l	0.400	--	1
2-Methylnaphthalene	ND		ug/l	0.400	--	1
Acenaphthylene	ND		ug/l	0.400	--	1
Acenaphthene	ND		ug/l	0.400	--	1
Fluorene	ND		ug/l	0.400	--	1
Phenanthrene	ND		ug/l	0.400	--	1
Anthracene	ND		ug/l	0.400	--	1
Fluoranthene	ND		ug/l	0.400	--	1
Pyrene	ND		ug/l	0.400	--	1
Benzo(a)anthracene	ND		ug/l	0.400	--	1
Chrysene	ND		ug/l	0.400	--	1
Benzo(b)fluoranthene	ND		ug/l	0.400	--	1
Benzo(k)fluoranthene	ND		ug/l	0.400	--	1
Benzo(a)pyrene	ND		ug/l	0.200	--	1
Indeno(1,2,3-cd)Pyrene	ND		ug/l	0.400	--	1
Dibenzo(a,h)anthracene	ND		ug/l	0.400	--	1
Benzo(ghi)perylene	ND		ug/l	0.400	--	1



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1705151  
**Report Date:** 02/22/17

**SAMPLE RESULTS**

Lab ID:	L1705151-03	Date Collected:	02/17/17 13:40
Client ID:	VES-108 (MW)	Date Received:	02/17/17
Sample Location:	MA	Field Prep:	Field Filtered (Dissolved Metals)

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
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**EPH w/MS Targets - Westborough Lab**

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Chloro-Octadecane	70		40-140
o-Terphenyl	90		40-140
2-Fluorobiphenyl	92		40-140
2-Bromonaphthalene	96		40-140
O-Terphenyl-MS	70		40-140

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1705151  
**Report Date:** 02/22/17

### SAMPLE RESULTS

Lab ID:	L1705151-04	Date Collected:	02/17/17 12:00
Client ID:	VES-110 (MW)	Date Received:	02/17/17
Sample Location:	MA	Field Prep:	Field Filtered (Dissolved Metals)
Matrix:	Water		
Analytical Method:	100,VPH-04-1.1		
Analytical Date:	02/18/17 20:50		
Analyst:	JM		

### Quality Control Information

Condition of sample received:	Satisfactory
Aqueous Preservative:	Laboratory Provided Preserved Container
Sample Temperature upon receipt:	Received on Ice

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>Volatile Petroleum Hydrocarbons - Westborough Lab</b>						
C5-C8 Aliphatics	ND		ug/l	50.0	--	1
C9-C12 Aliphatics	ND		ug/l	50.0	--	1
C9-C10 Aromatics	ND		ug/l	50.0	--	1
C5-C8 Aliphatics, Adjusted	ND		ug/l	50.0	--	1
C9-C12 Aliphatics, Adjusted	ND		ug/l	50.0	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2,5-Dibromotoluene-PID	115		70-130
2,5-Dibromotoluene-FID	104		70-130

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1705151  
**Report Date:** 02/22/17

**SAMPLE RESULTS**

Lab ID:	L1705151-04	Date Collected:	02/17/17 12:00
Client ID:	VES-110 (MW)	Date Received:	02/17/17
Sample Location:	MA	Field Prep:	Field Filtered (Dissolved Metals)
Matrix:	Water	Extraction Method:	EPA 3510C
Analytical Method:	98,EPH-04-1.1	Extraction Date:	02/18/17 00:46
Analytical Date:	02/19/17 02:50	M.S. Analytical Date:	02/20/17 11:02
Analyst:	SR	M.S. Analyst:	KL
		Cleanup Method1:	EPH-04-1
		Cleanup Date1:	02/18/17

**Quality Control Information**

Condition of sample received:	Satisfactory
Aqueous Preservative:	Laboratory Provided Preserved Container
Sample Temperature upon receipt:	Received on Ice
Sample Extraction method:	Extracted Per the Method

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>EPH w/MS Targets - Westborough Lab</b>						
C9-C18 Aliphatics	ND		ug/l	100	--	1
C19-C36 Aliphatics	ND		ug/l	100	--	1
C11-C22 Aromatics	ND		ug/l	100	--	1
C11-C22 Aromatics, Adjusted	ND		ug/l	100	--	1
Naphthalene	ND		ug/l	0.400	--	1
2-Methylnaphthalene	ND		ug/l	0.400	--	1
Acenaphthylene	ND		ug/l	0.400	--	1
Acenaphthene	ND		ug/l	0.400	--	1
Fluorene	ND		ug/l	0.400	--	1
Phenanthrene	ND		ug/l	0.400	--	1
Anthracene	ND		ug/l	0.400	--	1
Fluoranthene	ND		ug/l	0.400	--	1
Pyrene	ND		ug/l	0.400	--	1
Benzo(a)anthracene	ND		ug/l	0.400	--	1
Chrysene	ND		ug/l	0.400	--	1
Benzo(b)fluoranthene	ND		ug/l	0.400	--	1
Benzo(k)fluoranthene	ND		ug/l	0.400	--	1
Benzo(a)pyrene	ND		ug/l	0.200	--	1
Indeno(1,2,3-cd)Pyrene	ND		ug/l	0.400	--	1
Dibenzo(a,h)anthracene	ND		ug/l	0.400	--	1
Benzo(ghi)perylene	ND		ug/l	0.400	--	1



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1705151  
**Report Date:** 02/22/17

**SAMPLE RESULTS**

Lab ID:	L1705151-04	Date Collected:	02/17/17 12:00
Client ID:	VES-110 (MW)	Date Received:	02/17/17
Sample Location:	MA	Field Prep:	Field Filtered (Dissolved Metals)

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>EPH w/MS Targets - Westborough Lab</b>						
Surrogate	% Recovery	Qualifier		Acceptance Criteria		
Chloro-Octadecane	73			40-140		
o-Terphenyl	80			40-140		
2-Fluorobiphenyl	81			40-140		
2-Bromonaphthalene	81			40-140		
O-Terphenyl-MS	62			40-140		



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1705151  
**Report Date:** 02/22/17

### SAMPLE RESULTS

Lab ID:	L1705151-05	Date Collected:	02/17/17 08:50
Client ID:	VES-106 (MW)	Date Received:	02/17/17
Sample Location:	MA	Field Prep:	Field Filtered (Dissolved Metals)
Matrix:	Water		
Analytical Method:	100,VPH-04-1.1		
Analytical Date:	02/18/17 21:29		
Analyst:	JM		

### Quality Control Information

Condition of sample received:	Satisfactory
Aqueous Preservative:	Laboratory Provided Preserved Container
Sample Temperature upon receipt:	Received on Ice

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>Volatile Petroleum Hydrocarbons - Westborough Lab</b>						
C5-C8 Aliphatics	ND		ug/l	50.0	--	1
C9-C12 Aliphatics	ND		ug/l	50.0	--	1
C9-C10 Aromatics	ND		ug/l	50.0	--	1
C5-C8 Aliphatics, Adjusted	ND		ug/l	50.0	--	1
C9-C12 Aliphatics, Adjusted	ND		ug/l	50.0	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2,5-Dibromotoluene-PID	117		70-130
2,5-Dibromotoluene-FID	107		70-130

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1705151  
**Report Date:** 02/22/17

**SAMPLE RESULTS**

Lab ID:	L1705151-05	Date Collected:	02/17/17 08:50
Client ID:	VES-106 (MW)	Date Received:	02/17/17
Sample Location:	MA	Field Prep:	Field Filtered (Dissolved Metals)
Matrix:	Water	Extraction Method:	EPA 3510C
Analytical Method:	98,EPH-04-1.1	Extraction Date:	02/18/17 00:46
Analytical Date:	02/19/17 03:28	M.S. Analytical Date:	02/20/17 11:27
Analyst:	SR	M.S. Analyst:	KL
		Cleanup Method1:	EPH-04-1
		Cleanup Date1:	02/18/17

**Quality Control Information**

Condition of sample received:	Satisfactory
Aqueous Preservative:	Laboratory Provided Preserved Container
Sample Temperature upon receipt:	Received on Ice
Sample Extraction method:	Extracted Per the Method

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>EPH w/MS Targets - Westborough Lab</b>						
C9-C18 Aliphatics	ND		ug/l	100	--	1
C19-C36 Aliphatics	ND		ug/l	100	--	1
C11-C22 Aromatics	ND		ug/l	100	--	1
C11-C22 Aromatics, Adjusted	ND		ug/l	100	--	1
Naphthalene	ND		ug/l	0.400	--	1
2-Methylnaphthalene	ND		ug/l	0.400	--	1
Acenaphthylene	ND		ug/l	0.400	--	1
Acenaphthene	ND		ug/l	0.400	--	1
Fluorene	ND		ug/l	0.400	--	1
Phenanthrene	ND		ug/l	0.400	--	1
Anthracene	ND		ug/l	0.400	--	1
Fluoranthene	ND		ug/l	0.400	--	1
Pyrene	ND		ug/l	0.400	--	1
Benzo(a)anthracene	ND		ug/l	0.400	--	1
Chrysene	ND		ug/l	0.400	--	1
Benzo(b)fluoranthene	ND		ug/l	0.400	--	1
Benzo(k)fluoranthene	ND		ug/l	0.400	--	1
Benzo(a)pyrene	ND		ug/l	0.200	--	1
Indeno(1,2,3-cd)Pyrene	ND		ug/l	0.400	--	1
Dibenzo(a,h)anthracene	ND		ug/l	0.400	--	1
Benzo(ghi)perylene	ND		ug/l	0.400	--	1



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1705151  
**Report Date:** 02/22/17

**SAMPLE RESULTS**

Lab ID:	L1705151-05	Date Collected:	02/17/17 08:50
Client ID:	VES-106 (MW)	Date Received:	02/17/17
Sample Location:	MA	Field Prep:	Field Filtered (Dissolved Metals)

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
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**EPH w/MS Targets - Westborough Lab**

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Chloro-Octadecane	69		40-140
o-Terphenyl	88		40-140
2-Fluorobiphenyl	88		40-140
2-Bromonaphthalene	89		40-140
O-Terphenyl-MS	68		40-140



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1705151  
**Report Date:** 02/22/17

### SAMPLE RESULTS

Lab ID:	L1705151-06	Date Collected:	02/17/17 11:30
Client ID:	VES-119 (MW)	Date Received:	02/17/17
Sample Location:	MA	Field Prep:	Field Filtered (Dissolved Metals)
Matrix:	Water		
Analytical Method:	100,VPH-04-1.1		
Analytical Date:	02/18/17 22:08		
Analyst:	JM		

### Quality Control Information

Condition of sample received:	Satisfactory
Aqueous Preservative:	Laboratory Provided Preserved Container
Sample Temperature upon receipt:	Received on Ice

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>Volatile Petroleum Hydrocarbons - Westborough Lab</b>						
C5-C8 Aliphatics	ND		ug/l	50.0	--	1
C9-C12 Aliphatics	ND		ug/l	50.0	--	1
C9-C10 Aromatics	ND		ug/l	50.0	--	1
C5-C8 Aliphatics, Adjusted	ND		ug/l	50.0	--	1
C9-C12 Aliphatics, Adjusted	ND		ug/l	50.0	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2,5-Dibromotoluene-PID	112		70-130
2,5-Dibromotoluene-FID	100		70-130

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1705151  
**Report Date:** 02/22/17

**SAMPLE RESULTS**

Lab ID:	L1705151-06	Date Collected:	02/17/17 11:30
Client ID:	VES-119 (MW)	Date Received:	02/17/17
Sample Location:	MA	Field Prep:	Field Filtered (Dissolved Metals)
Matrix:	Water	Extraction Method:	EPA 3510C
Analytical Method:	98,EPH-04-1.1	Extraction Date:	02/18/17 00:46
Analytical Date:	02/19/17 04:06	M.S. Analytical Date:	02/20/17 11:51
Analyst:	SR	M.S. Analyst:	KL
		Cleanup Method1:	EPH-04-1
		Cleanup Date1:	02/18/17

**Quality Control Information**

Condition of sample received:	Satisfactory
Aqueous Preservative:	Laboratory Provided Preserved Container
Sample Temperature upon receipt:	Received on Ice
Sample Extraction method:	Extracted Per the Method

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>EPH w/MS Targets - Westborough Lab</b>						
C9-C18 Aliphatics	ND		ug/l	100	--	1
C19-C36 Aliphatics	ND		ug/l	100	--	1
C11-C22 Aromatics	ND		ug/l	100	--	1
C11-C22 Aromatics, Adjusted	ND		ug/l	100	--	1
Naphthalene	ND		ug/l	0.400	--	1
2-Methylnaphthalene	ND		ug/l	0.400	--	1
Acenaphthylene	ND		ug/l	0.400	--	1
Acenaphthene	ND		ug/l	0.400	--	1
Fluorene	ND		ug/l	0.400	--	1
Phenanthrene	ND		ug/l	0.400	--	1
Anthracene	ND		ug/l	0.400	--	1
Fluoranthene	ND		ug/l	0.400	--	1
Pyrene	ND		ug/l	0.400	--	1
Benzo(a)anthracene	ND		ug/l	0.400	--	1
Chrysene	ND		ug/l	0.400	--	1
Benzo(b)fluoranthene	ND		ug/l	0.400	--	1
Benzo(k)fluoranthene	ND		ug/l	0.400	--	1
Benzo(a)pyrene	ND		ug/l	0.200	--	1
Indeno(1,2,3-cd)Pyrene	ND		ug/l	0.400	--	1
Dibenzo(a,h)anthracene	ND		ug/l	0.400	--	1
Benzo(ghi)perylene	ND		ug/l	0.400	--	1



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1705151  
**Report Date:** 02/22/17

**SAMPLE RESULTS**

Lab ID:	L1705151-06	Date Collected:	02/17/17 11:30
Client ID:	VES-119 (MW)	Date Received:	02/17/17
Sample Location:	MA	Field Prep:	Field Filtered (Dissolved Metals)

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
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**EPH w/MS Targets - Westborough Lab**

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Chloro-Octadecane	79		40-140
o-Terphenyl	98		40-140
2-Fluorobiphenyl	93		40-140
2-Bromonaphthalene	93		40-140
O-Terphenyl-MS	75		40-140



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1705151  
**Report Date:** 02/22/17

**SAMPLE RESULTS**

Lab ID:	L1705151-07	Date Collected:	02/17/17 14:25
Client ID:	VES-111 (MW)	Date Received:	02/17/17
Sample Location:	MA	Field Prep:	Field Filtered (Dissolved Metals)
Matrix:	Water		
Analytical Method:	100,VPH-04-1.1		
Analytical Date:	02/18/17 22:47		
Analyst:	JM		

**Quality Control Information**

Condition of sample received:	Satisfactory
Aqueous Preservative:	Laboratory Provided Preserved Container
Sample Temperature upon receipt:	Received on Ice

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>Volatile Petroleum Hydrocarbons - Westborough Lab</b>						
C5-C8 Aliphatics	ND		ug/l	50.0	--	1
C9-C12 Aliphatics	ND		ug/l	50.0	--	1
C9-C10 Aromatics	ND		ug/l	50.0	--	1
C5-C8 Aliphatics, Adjusted	ND		ug/l	50.0	--	1
C9-C12 Aliphatics, Adjusted	ND		ug/l	50.0	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2,5-Dibromotoluene-PID	116		70-130
2,5-Dibromotoluene-FID	105		70-130

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1705151  
**Report Date:** 02/22/17

**SAMPLE RESULTS**

Lab ID:	L1705151-07	Date Collected:	02/17/17 14:25
Client ID:	VES-111 (MW)	Date Received:	02/17/17
Sample Location:	MA	Field Prep:	Field Filtered (Dissolved Metals)
Matrix:	Water	Extraction Method:	EPA 3510C
Analytical Method:	98,EPH-04-1.1	Extraction Date:	02/18/17 00:46
Analytical Date:	02/19/17 04:44	M.S. Analytical Date:	02/20/17 12:15
Analyst:	SR	M.S. Analyst:	KL
		Cleanup Method1:	EPH-04-1
		Cleanup Date1:	02/18/17

**Quality Control Information**

Condition of sample received:	Satisfactory
Aqueous Preservative:	Laboratory Provided Preserved Container
Sample Temperature upon receipt:	Received on Ice
Sample Extraction method:	Extracted Per the Method

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>EPH w/MS Targets - Westborough Lab</b>						
C9-C18 Aliphatics	ND		ug/l	100	--	1
C19-C36 Aliphatics	ND		ug/l	100	--	1
C11-C22 Aromatics	ND		ug/l	100	--	1
C11-C22 Aromatics, Adjusted	ND		ug/l	100	--	1
Naphthalene	ND		ug/l	0.400	--	1
2-Methylnaphthalene	ND		ug/l	0.400	--	1
Acenaphthylene	ND		ug/l	0.400	--	1
Acenaphthene	ND		ug/l	0.400	--	1
Fluorene	ND		ug/l	0.400	--	1
Phenanthrene	ND		ug/l	0.400	--	1
Anthracene	ND		ug/l	0.400	--	1
Fluoranthene	ND		ug/l	0.400	--	1
Pyrene	ND		ug/l	0.400	--	1
Benzo(a)anthracene	ND		ug/l	0.400	--	1
Chrysene	ND		ug/l	0.400	--	1
Benzo(b)fluoranthene	ND		ug/l	0.400	--	1
Benzo(k)fluoranthene	ND		ug/l	0.400	--	1
Benzo(a)pyrene	ND		ug/l	0.200	--	1
Indeno(1,2,3-cd)Pyrene	ND		ug/l	0.400	--	1
Dibenzo(a,h)anthracene	ND		ug/l	0.400	--	1
Benzo(ghi)perylene	ND		ug/l	0.400	--	1



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1705151  
**Report Date:** 02/22/17

**SAMPLE RESULTS**

Lab ID:	L1705151-07	Date Collected:	02/17/17 14:25
Client ID:	VES-111 (MW)	Date Received:	02/17/17
Sample Location:	MA	Field Prep:	Field Filtered (Dissolved Metals)

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
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**EPH w/MS Targets - Westborough Lab**

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Chloro-Octadecane	61		40-140
o-Terphenyl	78		40-140
2-Fluorobiphenyl	83		40-140
2-Bromonaphthalene	84		40-140
O-Terphenyl-MS	64		40-140



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1705151  
**Report Date:** 02/22/17

### Method Blank Analysis Batch Quality Control

Analytical Method:	98,EPH-04-1.1	Extraction Method:	EPA 3510C
Analytical Date:	02/18/17 23:02	Extraction Date:	02/18/17 00:46
Analyst:	SR	M.S. Analyst:	KL
		Cleanup Method:	EPH-04-1
		Cleanup Date:	02/18/17

Parameter	Result	Qualifier	Units	RL	MDL
EPH w/MS Targets - Westborough Lab for sample(s):	01-07	Batch:	WG978963-1		
C9-C18 Aliphatics	ND		ug/l	100	--
C19-C36 Aliphatics	ND		ug/l	100	--
C11-C22 Aromatics	ND		ug/l	100	--
C11-C22 Aromatics, Adjusted	ND		ug/l	100	--
Naphthalene	ND		ug/l	0.400	--
2-Methylnaphthalene	ND		ug/l	0.400	--
Acenaphthylene	ND		ug/l	0.400	--
Acenaphthene	ND		ug/l	0.400	--
Fluorene	ND		ug/l	0.400	--
Phenanthrene	ND		ug/l	0.400	--
Anthracene	ND		ug/l	0.400	--
Fluoranthene	ND		ug/l	0.400	--
Pyrene	ND		ug/l	0.400	--
Benzo(a)anthracene	ND		ug/l	0.400	--
Chrysene	ND		ug/l	0.400	--
Benzo(b)fluoranthene	ND		ug/l	0.400	--
Benzo(k)fluoranthene	ND		ug/l	0.400	--
Benzo(a)pyrene	ND		ug/l	0.200	--
Indeno(1,2,3-cd)Pyrene	ND		ug/l	0.400	--
Dibenzo(a,h)anthracene	ND		ug/l	0.400	--
Benzo(ghi)perylene	ND		ug/l	0.400	--

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1705151  
**Report Date:** 02/22/17

### Method Blank Analysis Batch Quality Control

Analytical Method: 98,EPH-04-1.1  
Analytical Date: 02/18/17 23:02  
Analyst: SR

02/20/17 07:46  
KL

Extraction Method: EPA 3510C  
Extraction Date: 02/18/17 00:46  
Cleanup Method: EPH-04-1  
Cleanup Date: 02/18/17

Parameter	Result	Qualifier	Units	RL	MDL
EPH w/MS Targets - Westborough Lab for sample(s): 01-07		Batch:	WG978963-1		

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Chloro-Octadecane	80		40-140
o-Terphenyl	79		40-140
2-Fluorobiphenyl	81		40-140
2-Bromonaphthalene	81		40-140
O-Terphenyl-MS	66		40-140

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1705151  
**Report Date:** 02/22/17

**Method Blank Analysis**  
**Batch Quality Control**

Analytical Method: 100,VPH-04-1.1  
Analytical Date: 02/18/17 13:59  
Analyst: JM

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Petroleum Hydrocarbons - Westborough Lab for sample(s):	01-07			Batch:	WG979655-3
C5-C8 Aliphatics	ND		ug/l	50.0	--
C9-C12 Aliphatics	ND		ug/l	50.0	--
C9-C10 Aromatics	ND		ug/l	50.0	--
C5-C8 Aliphatics, Adjusted	ND		ug/l	50.0	--
C9-C12 Aliphatics, Adjusted	ND		ug/l	50.0	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2,5-Dibromotoluene-PID	115		70-130
2,5-Dibromotoluene-FID	103		70-130

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1705151  
**Report Date:** 02/22/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
EPH w/MS Targets - Westborough Lab Associated sample(s): 01-07 Batch: WG978963-2 WG978963-3								
C9-C18 Aliphatics	70		58		40-140	19		25
C19-C36 Aliphatics	92		81		40-140	13		25
C11-C22 Aromatics	79		89		40-140	12		25
Naphthalene	68		60		40-140	13		25
2-Methylnaphthalene	67		60		40-140	11		25
Acenaphthylene	72		65		40-140	10		25
Acenaphthene	78		71		40-140	9		25
Fluorene	74		68		40-140	8		25
Phenanthrene	62		59		40-140	5		25
Anthracene	77		73		40-140	5		25
Fluoranthene	76		72		40-140	5		25
Pyrene	76		73		40-140	4		25
Benzo(a)anthracene	67		64		40-140	5		25
Chrysene	68		67		40-140	1		25
Benzo(b)fluoranthene	73		69		40-140	6		25
Benzo(k)fluoranthene	69		68		40-140	1		25
Benzo(a)pyrene	75		72		40-140	4		25
Indeno(1,2,3-cd)Pyrene	66		63		40-140	5		25
Dibenzo(a,h)anthracene	49		47		40-140	4		25
Benzo(ghi)perylene	69		66		40-140	4		25
Nonane (C9)	62		50		30-140	21		25

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1705151  
**Report Date:** 02/22/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
EPH w/MS Targets - Westborough Lab Associated sample(s): 01-07 Batch: WG978963-2 WG978963-3								
Decane (C10)	74		60		40-140	21		25
Dodecane (C12)	80		67		40-140	18		25
Tetradecane (C14)	84		71		40-140	17		25
Hexadecane (C16)	88		76		40-140	15		25
Octadecane (C18)	89		79		40-140	12		25
Nonadecane (C19)	89		79		40-140	12		25
Eicosane (C20)	89		79		40-140	12		25
Docosane (C22)	89		80		40-140	11		25
Tetracosane (C24)	87		78		40-140	11		25
Hexacosane (C26)	88		79		40-140	11		25
Octacosane (C28)	89		79		40-140	12		25
Triacontane (C30)	88		79		40-140	11		25
Hexatriacontane (C36)	86		76		40-140	12		25

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1705151  
**Report Date:** 02/22/17

<b>Parameter</b>	<i>LCS</i> <i>%Recovery</i>	<i>Qual</i>	<i>LCSD</i> <i>%Recovery</i>	<i>Qual</i>	<i>%Recovery</i> <i>Limits</i>	<i>RPD</i>	<i>Qual</i>	<i>RPD</i> <i>Limits</i>
EPH w/MS Targets - Westborough Lab Associated sample(s): 01-07 Batch: WG978963-2 WG978963-3								
<b>Surrogate</b>	<i>LCS</i> <i>%Recovery</i>	<i>Qual</i>	<i>LCSD</i> <i>%Recovery</i>	<i>Qual</i>	<b>Acceptance Criteria</b>			
Chloro-Octadecane	81		78		40-140			
o-Terphenyl	84		93		40-140			
2-Fluorobiphenyl	80		90		40-140			
2-Bromonaphthalene	82		92		40-140			
O-Terphenyl-MS	67		62		40-140			
% Naphthalene Breakthrough	0		0					
% 2-Methylnaphthalene Breakthrough	0		0					

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1705151  
**Report Date:** 02/22/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Petroleum Hydrocarbons - Westborough Lab Associated sample(s): 01-07 Batch: WG979655-1 WG979655-2								
C5-C8 Aliphatics	101		99		70-130	2		25
C9-C12 Aliphatics	108		106		70-130	2		25
C9-C10 Aromatics	119		116		70-130	3		25
Benzene	112		112		70-130	0		25
Toluene	114		113		70-130	1		25
Ethylbenzene	116		115		70-130	1		25
p/m-Xylene	118		116		70-130	2		25
o-Xylene	114		112		70-130	2		25
Methyl tert butyl ether	110		110		70-130	0		25
Naphthalene	117		114		70-130	3		25
1,2,4-Trimethylbenzene	119		116		70-130	3		25
Pentane	96		95		70-130	1		25
2-Methylpentane	101		100		70-130	1		25
2,2,4-Trimethylpentane	104		103		70-130	1		25
n-Nonane	107		106		30-130	1		25
n-Decane	110		107		70-130	3		25
n-Butylcyclohexane	106		105		70-130	1		25

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1705151  
**Report Date:** 02/22/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
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Volatile Petroleum Hydrocarbons - Westborough Lab Associated sample(s): 01-07 Batch: WG979655-1 WG979655-2

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2,5-Dibromotoluene-PID	120		116		70-130
2,5-Dibromotoluene-FID	108		106		70-130

**PCBS**



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1705151  
**Report Date:** 02/22/17

**SAMPLE RESULTS**

Lab ID: L1705151-01  
Client ID: VES-125 (MW)  
Sample Location: MA  
Matrix: Water  
Analytical Method: 5,608  
Analytical Date: 02/20/17 16:53  
Analyst: JW

Date Collected: 02/17/17 08:50  
Date Received: 02/17/17  
Field Prep: Field Filtered (Dissolved Metals)  
Extraction Method: EPA 608  
Extraction Date: 02/18/17 01:58  
Cleanup Method: EPA 3665A  
Cleanup Date: 02/18/17  
Cleanup Method: EPA 3660B  
Cleanup Date: 02/18/17

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
<b>Polychlorinated Biphenyls by GC - Westborough Lab</b>							
Aroclor 1016	ND		ug/l	0.250	--	1	A
Aroclor 1221	ND		ug/l	0.250	--	1	A
Aroclor 1232	ND		ug/l	0.250	--	1	A
Aroclor 1242	ND		ug/l	0.250	--	1	A
Aroclor 1248	ND		ug/l	0.250	--	1	A
Aroclor 1254	ND		ug/l	0.250	--	1	A
Aroclor 1260	ND		ug/l	0.200	--	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	79		30-150	A
Decachlorobiphenyl	63		30-150	A

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1705151  
**Report Date:** 02/22/17

**SAMPLE RESULTS**

Lab ID: L1705151-04  
Client ID: VES-110 (MW)  
Sample Location: MA  
Matrix: Water  
Analytical Method: 5,608  
Analytical Date: 02/20/17 17:05  
Analyst: JW

Date Collected: 02/17/17 12:00  
Date Received: 02/17/17  
Field Prep: Field Filtered (Dissolved Metals)  
Extraction Method: EPA 608  
Extraction Date: 02/18/17 01:58  
Cleanup Method: EPA 3665A  
Cleanup Date: 02/18/17  
Cleanup Method: EPA 3660B  
Cleanup Date: 02/18/17

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
<b>Polychlorinated Biphenyls by GC - Westborough Lab</b>							
Aroclor 1016	ND		ug/l	0.250	--	1	A
Aroclor 1221	ND		ug/l	0.250	--	1	A
Aroclor 1232	ND		ug/l	0.250	--	1	A
Aroclor 1242	ND		ug/l	0.250	--	1	A
Aroclor 1248	ND		ug/l	0.250	--	1	A
Aroclor 1254	ND		ug/l	0.250	--	1	A
Aroclor 1260	ND		ug/l	0.200	--	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	83		30-150	A
Decachlorobiphenyl	58		30-150	A

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1705151  
**Report Date:** 02/22/17

**SAMPLE RESULTS**

Lab ID: L1705151-06  
Client ID: VES-119 (MW)  
Sample Location: MA  
Matrix: Water  
Analytical Method: 5,608  
Analytical Date: 02/20/17 17:18  
Analyst: JW

Date Collected: 02/17/17 11:30  
Date Received: 02/17/17  
Field Prep: Field Filtered (Dissolved Metals)  
Extraction Method: EPA 608  
Extraction Date: 02/18/17 01:58  
Cleanup Method: EPA 3665A  
Cleanup Date: 02/18/17  
Cleanup Method: EPA 3660B  
Cleanup Date: 02/18/17

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
<b>Polychlorinated Biphenyls by GC - Westborough Lab</b>							
Aroclor 1016	ND		ug/l	0.250	--	1	A
Aroclor 1221	ND		ug/l	0.250	--	1	A
Aroclor 1232	ND		ug/l	0.250	--	1	A
Aroclor 1242	ND		ug/l	0.250	--	1	A
Aroclor 1248	ND		ug/l	0.250	--	1	A
Aroclor 1254	ND		ug/l	0.250	--	1	A
Aroclor 1260	ND		ug/l	0.200	--	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	84		30-150	A
Decachlorobiphenyl	47		30-150	A

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1705151  
**Report Date:** 02/22/17

### Method Blank Analysis Batch Quality Control

Analytical Method: 5,608  
Analytical Date: 02/20/17 18:07  
Analyst: JW

Extraction Method: EPA 608  
Extraction Date: 02/18/17 01:58  
Cleanup Method: EPA 3665A  
Cleanup Date: 02/18/17  
Cleanup Method: EPA 3660B  
Cleanup Date: 02/18/17

Parameter	Result	Qualifier	Units	RL	MDL	Column
Polychlorinated Biphenyls by GC - Westborough Lab for sample(s): 01,04,06 Batch: WG978968-1						
Aroclor 1016	ND		ug/l	0.250	--	A
Aroclor 1221	ND		ug/l	0.250	--	A
Aroclor 1232	ND		ug/l	0.250	--	A
Aroclor 1242	ND		ug/l	0.250	--	A
Aroclor 1248	ND		ug/l	0.250	--	A
Aroclor 1254	ND		ug/l	0.250	--	A
Aroclor 1260	ND		ug/l	0.200	--	A

Surrogate	%Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	68		30-150	A
Decachlorobiphenyl	82		30-150	A

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1705151  
**Report Date:** 02/22/17

<b>Parameter</b>	<i>LCS</i> %Recovery	<i>Qual</i>	<i>LCSD</i> %Recovery	<i>Qual</i>	<i>%Recovery</i> <i>Limits</i>	<i>RPD</i>	<i>Qual</i>	<i>RPD</i> <i>Limits</i>	<i>Column</i>
Polychlorinated Biphenyls by GC - Westborough Lab Associated sample(s): 01,04,06 Batch: WG978968-2									
Aroclor 1016	86	-	-	-	40-140	-	-	50	A
Aroclor 1260	92	-	-	-	40-140	-	-	50	A

<b>Surrogate</b>	<i>LCS</i> %Recovery	<i>Qual</i>	<i>LCSD</i> %Recovery	<i>Qual</i>	<i>Acceptance</i> <i>Criteria</i>	<i>Column</i>
2,4,5,6-Tetrachloro-m-xylene						30-150 A
Decachlorobiphenyl	66	-	-	-	30-150	A
	71	-	-	-	30-150	A

# Matrix Spike Analysis

## Batch Quality Control

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1705151  
**Report Date:** 02/22/17

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	RPD Qual	RPD Limits	Column
Polychlorinated Biphenyls by GC - Westborough Lab Associated sample(s): 01,04,06 QC Batch ID: WG978968-3 QC Sample: L1705151-01 Client ID: VES-125 (MW)													
Aroclor 1016	ND	1.04	0.788	76	-	-	-	-	40-140	-	50	A	
Aroclor 1260	ND	1.04	0.797	76	-	-	-	-	40-140	-	50	A	

Surrogate	MS % Recovery	MS Qualifier	MSD % Recovery	MSD Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	73				30-150	A
Decachlorobiphenyl	56				30-150	A

**Lab Duplicate Analysis**  
Batch Quality Control

Project Name: EAST BOSTON  
Project Number: 43068

Lab Number: L1705151  
Report Date: 02/22/17

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Polychlorinated Biphenyls by GC - Westborough Lab Associated sample(s): 01,04,06 QC Batch ID: WG978968-4 QC Sample: L1705151-06 Client ID: VES-119 (MW)						
Aroclor 1016	ND	ND	ug/l	NC	50	A
Aroclor 1221	ND	ND	ug/l	NC	50	A
Aroclor 1232	ND	ND	ug/l	NC	50	A
Aroclor 1242	ND	ND	ug/l	NC	50	A
Aroclor 1248	ND	ND	ug/l	NC	50	A
Aroclor 1254	ND	ND	ug/l	NC	50	A
Aroclor 1260	ND	ND	ug/l	NC	50	A

Surrogate	%Recovery	Qualifier	%Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	84		92		30-150	A
Decachlorobiphenyl	47		58		30-150	A

## METALS



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1705151  
**Report Date:** 02/22/17

**SAMPLE RESULTS**

Lab ID: L1705151-01  
Client ID: VES-125 (MW)  
Sample Location: MA  
Matrix: Water

Date Collected: 02/17/17 08:50  
Date Received: 02/17/17  
Field Prep: Field Filtered  
(Dissolved Metals)

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
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**Total Metals - Mansfield Lab**

Iron, Total	30.7	mg/l	0.050	--	1	02/20/17 10:30	02/21/17 15:14	EPA 3005A	19,200.7	PS
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**MCP Total Metals - Mansfield Lab**

Antimony, Total	0.0082	mg/l	0.0040	--	1	02/20/17 10:30	02/20/17 18:38	EPA 3005A	97,6020A	TT
Arsenic, Total	0.0022	mg/l	0.0005	--	1	02/20/17 10:30	02/20/17 18:38	EPA 3005A	97,6020A	TT
Cadmium, Total	ND	mg/l	0.0005	--	1	02/20/17 10:30	02/20/17 18:38	EPA 3005A	97,6020A	TT
Chromium, Total	0.0010	mg/l	0.0010	--	1	02/20/17 10:30	02/20/17 18:38	EPA 3005A	97,6020A	TT
Copper, Total	0.0018	mg/l	0.0010	--	1	02/20/17 10:30	02/20/17 18:38	EPA 3005A	97,6020A	TT
Lead, Total	0.0027	mg/l	0.0010	--	1	02/20/17 10:30	02/20/17 18:38	EPA 3005A	97,6020A	TT
Mercury, Total	ND	mg/l	0.0002	--	1	02/20/17 11:33	02/20/17 19:18	EPA 7470A	97,7470A	EA
Nickel, Total	ND	mg/l	0.0020	--	1	02/20/17 10:30	02/20/17 18:38	EPA 3005A	97,6020A	TT
Selenium, Total	ND	mg/l	0.005	--	1	02/20/17 10:30	02/20/17 18:38	EPA 3005A	97,6020A	TT
Silver, Total	ND	mg/l	0.0005	--	1	02/20/17 10:30	02/20/17 18:38	EPA 3005A	97,6020A	TT
Zinc, Total	ND	mg/l	0.0100	--	1	02/20/17 10:30	02/20/17 18:38	EPA 3005A	97,6020A	TT

**MCP Dissolved Metals - Mansfield Lab**

Antimony, Dissolved	ND	mg/l	0.0040	--	1	02/20/17 14:50	02/20/17 18:19	EPA 3005A	97,6020A	TT
Arsenic, Dissolved	0.0034	mg/l	0.0005	--	1	02/20/17 14:50	02/20/17 18:19	EPA 3005A	97,6020A	TT
Barium, Dissolved	0.5352	mg/l	0.0005	--	1	02/20/17 14:50	02/20/17 18:19	EPA 3005A	97,6020A	TT
Cadmium, Dissolved	ND	mg/l	0.0005	--	1	02/20/17 14:50	02/20/17 18:19	EPA 3005A	97,6020A	TT
Chromium, Dissolved	ND	mg/l	0.0010	--	1	02/20/17 14:50	02/20/17 18:19	EPA 3005A	97,6020A	TT
Copper, Dissolved	ND	mg/l	0.0010	--	1	02/20/17 14:50	02/20/17 18:19	EPA 3005A	97,6020A	TT
Lead, Dissolved	ND	mg/l	0.0010	--	1	02/20/17 14:50	02/20/17 18:19	EPA 3005A	97,6020A	TT
Mercury, Dissolved	ND	mg/l	0.0002	--	1	02/20/17 11:33	02/20/17 18:50	EPA 7470A	97,7470A	EA
Nickel, Dissolved	ND	mg/l	0.0020	--	1	02/20/17 14:50	02/20/17 18:19	EPA 3005A	97,6020A	TT
Selenium, Dissolved	ND	mg/l	0.005	--	1	02/20/17 14:50	02/20/17 18:19	EPA 3005A	97,6020A	TT
Silver, Dissolved	ND	mg/l	0.0005	--	1	02/20/17 14:50	02/20/17 18:19	EPA 3005A	97,6020A	TT
Zinc, Dissolved	ND	mg/l	0.0100	--	1	02/20/17 14:50	02/20/17 18:19	EPA 3005A	97,6020A	TT



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1705151  
**Report Date:** 02/22/17

**SAMPLE RESULTS**

Lab ID: L1705151-01  
Client ID: VES-125 (MW)  
Sample Location: MA  
Matrix: Water

Date Collected: 02/17/17 08:50  
Date Received: 02/17/17  
Field Prep: Field Filtered  
(Dissolved Metals)

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
<b>Dissolved Metals - Mansfield Lab</b>											
Iron, Dissolved	30		mg/l	0.05	--	1	02/20/17 14:50	02/21/17 10:19	EPA 3005A	19,200.7	PS



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1705151  
**Report Date:** 02/22/17

**SAMPLE RESULTS**

Lab ID: L1705151-02  
Client ID: VES-109 (MW)  
Sample Location: MA  
Matrix: Water

Date Collected: 02/17/17 11:10  
Date Received: 02/17/17  
Field Prep: Field Filtered  
(Dissolved Metals)

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
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**MCP Dissolved Metals - Mansfield Lab**

Arsenic, Dissolved	ND		mg/l	0.005	--	1	02/20/17 14:50	02/21/17 09:31	EPA 3005A	97,6010C	JH
Barium, Dissolved	1.24		mg/l	0.010	--	1	02/20/17 14:50	02/21/17 09:31	EPA 3005A	97,6010C	JH
Cadmium, Dissolved	ND		mg/l	0.004	--	1	02/20/17 14:50	02/21/17 09:31	EPA 3005A	97,6010C	JH
Chromium, Dissolved	ND		mg/l	0.01	--	1	02/20/17 14:50	02/21/17 09:31	EPA 3005A	97,6010C	JH
Lead, Dissolved	ND		mg/l	0.010	--	1	02/20/17 14:50	02/21/17 09:31	EPA 3005A	97,6010C	JH
Mercury, Dissolved	ND		mg/l	0.0002	--	1	02/20/17 11:33	02/20/17 18:52	EPA 7470A	97,7470A	EA
Selenium, Dissolved	ND		mg/l	0.010	--	1	02/20/17 14:50	02/21/17 09:31	EPA 3005A	97,6010C	JH
Silver, Dissolved	ND		mg/l	0.007	--	1	02/20/17 14:50	02/21/17 09:31	EPA 3005A	97,6010C	JH



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1705151  
**Report Date:** 02/22/17

**SAMPLE RESULTS**

Lab ID:	L1705151-03	Date Collected:	02/17/17 13:40
Client ID:	VES-108 (MW)	Date Received:	02/17/17
Sample Location:	MA	Field Prep:	Field Filtered
Matrix:	Water		(Dissolved Metals)

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
<b>MCP Dissolved Metals - Mansfield Lab</b>											
Arsenic, Dissolved	0.007		mg/l	0.005	--	1	02/20/17 14:50	02/21/17 09:35	EPA 3005A	97,6010C	JH
Barium, Dissolved	0.054		mg/l	0.010	--	1	02/20/17 14:50	02/21/17 09:35	EPA 3005A	97,6010C	JH
Cadmium, Dissolved	ND		mg/l	0.004	--	1	02/20/17 14:50	02/21/17 09:35	EPA 3005A	97,6010C	JH
Chromium, Dissolved	ND		mg/l	0.01	--	1	02/20/17 14:50	02/21/17 09:35	EPA 3005A	97,6010C	JH
Lead, Dissolved	ND		mg/l	0.010	--	1	02/20/17 14:50	02/21/17 09:35	EPA 3005A	97,6010C	JH
Mercury, Dissolved	ND		mg/l	0.0002	--	1	02/20/17 11:33	02/20/17 18:53	EPA 7470A	97,7470A	EA
Selenium, Dissolved	ND		mg/l	0.010	--	1	02/20/17 14:50	02/21/17 09:35	EPA 3005A	97,6010C	JH
Silver, Dissolved	ND		mg/l	0.007	--	1	02/20/17 14:50	02/21/17 09:35	EPA 3005A	97,6010C	JH



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1705151  
**Report Date:** 02/22/17

**SAMPLE RESULTS**

Lab ID: L1705151-04  
Client ID: VES-110 (MW)  
Sample Location: MA  
Matrix: Water

Date Collected: 02/17/17 12:00  
Date Received: 02/17/17  
Field Prep: Field Filtered  
(Dissolved Metals)

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
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**Total Metals - Mansfield Lab**

Iron, Total	3.75	mg/l	0.050	--	1	02/20/17 10:30	02/21/17 15:18	EPA 3005A	19,200.7	PS
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**MCP Total Metals - Mansfield Lab**

Antimony, Total	ND	mg/l	0.0040	--	1	02/20/17 10:30	02/20/17 18:57	EPA 3005A	97,6020A	TT
Arsenic, Total	0.0016	mg/l	0.0005	--	1	02/20/17 10:30	02/20/17 18:57	EPA 3005A	97,6020A	TT
Cadmium, Total	ND	mg/l	0.0005	--	1	02/20/17 10:30	02/20/17 18:57	EPA 3005A	97,6020A	TT
Chromium, Total	ND	mg/l	0.0010	--	1	02/20/17 10:30	02/20/17 18:57	EPA 3005A	97,6020A	TT
Copper, Total	0.0022	mg/l	0.0010	--	1	02/20/17 10:30	02/20/17 18:57	EPA 3005A	97,6020A	TT
Lead, Total	ND	mg/l	0.0010	--	1	02/20/17 10:30	02/20/17 18:57	EPA 3005A	97,6020A	TT
Mercury, Total	ND	mg/l	0.0002	--	1	02/20/17 11:33	02/20/17 19:20	EPA 7470A	97,7470A	EA
Nickel, Total	0.0050	mg/l	0.0020	--	1	02/20/17 10:30	02/20/17 18:57	EPA 3005A	97,6020A	TT
Selenium, Total	ND	mg/l	0.005	--	1	02/20/17 10:30	02/20/17 18:57	EPA 3005A	97,6020A	TT
Silver, Total	ND	mg/l	0.0005	--	1	02/20/17 10:30	02/20/17 18:57	EPA 3005A	97,6020A	TT
Zinc, Total	0.0482	mg/l	0.0100	--	1	02/20/17 10:30	02/20/17 18:57	EPA 3005A	97,6020A	TT

**MCP Dissolved Metals - Mansfield Lab**

Antimony, Dissolved	ND	mg/l	0.0040	--	1	02/20/17 14:50	02/20/17 18:22	EPA 3005A	97,6020A	TT
Arsenic, Dissolved	0.0016	mg/l	0.0005	--	1	02/20/17 14:50	02/20/17 18:22	EPA 3005A	97,6020A	TT
Barium, Dissolved	0.1251	mg/l	0.0005	--	1	02/20/17 14:50	02/20/17 18:22	EPA 3005A	97,6020A	TT
Cadmium, Dissolved	ND	mg/l	0.0005	--	1	02/20/17 14:50	02/20/17 18:22	EPA 3005A	97,6020A	TT
Chromium, Dissolved	ND	mg/l	0.0010	--	1	02/20/17 14:50	02/20/17 18:22	EPA 3005A	97,6020A	TT
Copper, Dissolved	0.0017	mg/l	0.0010	--	1	02/20/17 14:50	02/20/17 18:22	EPA 3005A	97,6020A	TT
Lead, Dissolved	ND	mg/l	0.0010	--	1	02/20/17 14:50	02/20/17 18:22	EPA 3005A	97,6020A	TT
Mercury, Dissolved	ND	mg/l	0.0002	--	1	02/20/17 11:33	02/20/17 18:55	EPA 7470A	97,7470A	EA
Nickel, Dissolved	0.0067	mg/l	0.0020	--	1	02/20/17 14:50	02/20/17 18:22	EPA 3005A	97,6020A	TT
Selenium, Dissolved	ND	mg/l	0.005	--	1	02/20/17 14:50	02/20/17 18:22	EPA 3005A	97,6020A	TT
Silver, Dissolved	ND	mg/l	0.0005	--	1	02/20/17 14:50	02/20/17 18:22	EPA 3005A	97,6020A	TT
Zinc, Dissolved	0.0311	mg/l	0.0100	--	1	02/20/17 14:50	02/20/17 18:22	EPA 3005A	97,6020A	TT



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1705151  
**Report Date:** 02/22/17

**SAMPLE RESULTS**

Lab ID: L1705151-04  
Client ID: VES-110 (MW)  
Sample Location: MA  
Matrix: Water

Date Collected: 02/17/17 12:00  
Date Received: 02/17/17  
Field Prep: Field Filtered  
(Dissolved Metals)

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
<b>Dissolved Metals - Mansfield Lab</b>											
Iron, Dissolved	1.9		mg/l	0.05	--	1	02/20/17 14:50	02/21/17 10:34	EPA 3005A	19,200.7	PS

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1705151  
**Report Date:** 02/22/17

**SAMPLE RESULTS**

Lab ID:	L1705151-05	Date Collected:	02/17/17 08:50
Client ID:	VES-106 (MW)	Date Received:	02/17/17
Sample Location:	MA	Field Prep:	Field Filtered
Matrix:	Water		(Dissolved Metals)

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
<b>MCP Dissolved Metals - Mansfield Lab</b>											
Arsenic, Dissolved	0.006		mg/l	0.005	--	1	02/20/17 14:50	02/21/17 09:40	EPA 3005A	97,6010C	JH
Barium, Dissolved	1.03		mg/l	0.010	--	1	02/20/17 14:50	02/21/17 09:40	EPA 3005A	97,6010C	JH
Cadmium, Dissolved	ND		mg/l	0.004	--	1	02/20/17 14:50	02/21/17 09:40	EPA 3005A	97,6010C	JH
Chromium, Dissolved	ND		mg/l	0.01	--	1	02/20/17 14:50	02/21/17 09:40	EPA 3005A	97,6010C	JH
Lead, Dissolved	ND		mg/l	0.010	--	1	02/20/17 14:50	02/21/17 09:40	EPA 3005A	97,6010C	JH
Mercury, Dissolved	ND		mg/l	0.0002	--	1	02/20/17 11:33	02/20/17 18:57	EPA 7470A	97,7470A	EA
Selenium, Dissolved	ND		mg/l	0.010	--	1	02/20/17 14:50	02/21/17 09:40	EPA 3005A	97,6010C	JH
Silver, Dissolved	ND		mg/l	0.007	--	1	02/20/17 14:50	02/21/17 09:40	EPA 3005A	97,6010C	JH



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1705151  
**Report Date:** 02/22/17

**SAMPLE RESULTS**

Lab ID: L1705151-06  
Client ID: VES-119 (MW)  
Sample Location: MA  
Matrix: Water

Date Collected: 02/17/17 11:30  
Date Received: 02/17/17  
Field Prep: Field Filtered  
(Dissolved Metals)

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
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**Total Metals - Mansfield Lab**

Iron, Total	27.6	mg/l	0.050	--	1	02/20/17 10:30	02/21/17 15:23	EPA 3005A	19,200.7	PS
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**MCP Total Metals - Mansfield Lab**

Antimony, Total	ND	mg/l	0.0040	--	1	02/20/17 10:30	02/20/17 18:54	EPA 3005A	97,6020A	TT
Arsenic, Total	0.0021	mg/l	0.0005	--	1	02/20/17 10:30	02/20/17 18:54	EPA 3005A	97,6020A	TT
Cadmium, Total	ND	mg/l	0.0005	--	1	02/20/17 10:30	02/20/17 18:54	EPA 3005A	97,6020A	TT
Chromium, Total	ND	mg/l	0.0010	--	1	02/20/17 10:30	02/20/17 18:54	EPA 3005A	97,6020A	TT
Copper, Total	ND	mg/l	0.0010	--	1	02/20/17 10:30	02/20/17 18:54	EPA 3005A	97,6020A	TT
Lead, Total	ND	mg/l	0.0010	--	1	02/20/17 10:30	02/20/17 18:54	EPA 3005A	97,6020A	TT
Mercury, Total	ND	mg/l	0.0002	--	1	02/20/17 11:33	02/20/17 19:22	EPA 7470A	97,7470A	EA
Nickel, Total	ND	mg/l	0.0020	--	1	02/20/17 10:30	02/20/17 18:54	EPA 3005A	97,6020A	TT
Selenium, Total	ND	mg/l	0.005	--	1	02/20/17 10:30	02/20/17 18:54	EPA 3005A	97,6020A	TT
Silver, Total	ND	mg/l	0.0005	--	1	02/20/17 10:30	02/20/17 18:54	EPA 3005A	97,6020A	TT
Zinc, Total	ND	mg/l	0.0100	--	1	02/20/17 10:30	02/20/17 18:54	EPA 3005A	97,6020A	TT

**MCP Dissolved Metals - Mansfield Lab**

Antimony, Dissolved	ND	mg/l	0.0040	--	1	02/20/17 14:50	02/20/17 18:25	EPA 3005A	97,6020A	TT
Arsenic, Dissolved	0.0021	mg/l	0.0005	--	1	02/20/17 14:50	02/20/17 18:25	EPA 3005A	97,6020A	TT
Barium, Dissolved	0.7104	mg/l	0.0005	--	1	02/20/17 14:50	02/20/17 18:25	EPA 3005A	97,6020A	TT
Cadmium, Dissolved	ND	mg/l	0.0005	--	1	02/20/17 14:50	02/20/17 18:25	EPA 3005A	97,6020A	TT
Chromium, Dissolved	ND	mg/l	0.0010	--	1	02/20/17 14:50	02/20/17 18:25	EPA 3005A	97,6020A	TT
Copper, Dissolved	ND	mg/l	0.0010	--	1	02/20/17 14:50	02/20/17 18:25	EPA 3005A	97,6020A	TT
Lead, Dissolved	ND	mg/l	0.0010	--	1	02/20/17 14:50	02/20/17 18:25	EPA 3005A	97,6020A	TT
Mercury, Dissolved	ND	mg/l	0.0002	--	1	02/20/17 11:33	02/20/17 18:59	EPA 7470A	97,7470A	EA
Nickel, Dissolved	ND	mg/l	0.0020	--	1	02/20/17 14:50	02/20/17 18:25	EPA 3005A	97,6020A	TT
Selenium, Dissolved	ND	mg/l	0.005	--	1	02/20/17 14:50	02/20/17 18:25	EPA 3005A	97,6020A	TT
Silver, Dissolved	ND	mg/l	0.0005	--	1	02/20/17 14:50	02/20/17 18:25	EPA 3005A	97,6020A	TT
Zinc, Dissolved	ND	mg/l	0.0100	--	1	02/20/17 14:50	02/20/17 18:25	EPA 3005A	97,6020A	TT



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1705151  
**Report Date:** 02/22/17

**SAMPLE RESULTS**

Lab ID: L1705151-06  
Client ID: VES-119 (MW)  
Sample Location: MA  
Matrix: Water

Date Collected: 02/17/17 11:30  
Date Received: 02/17/17  
Field Prep: Field Filtered  
(Dissolved Metals)

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
<b>Dissolved Metals - Mansfield Lab</b>											
Iron, Dissolved	28		mg/l	0.05	--	1	02/20/17 14:50	02/21/17 10:39	EPA 3005A	19,200.7	PS

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1705151  
**Report Date:** 02/22/17

**SAMPLE RESULTS**

Lab ID:	L1705151-07	Date Collected:	02/17/17 14:25
Client ID:	VES-111 (MW)	Date Received:	02/17/17
Sample Location:	MA	Field Prep:	Field Filtered
Matrix:	Water		(Dissolved Metals)

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
<b>MCP Dissolved Metals - Mansfield Lab</b>											
Arsenic, Dissolved	0.007		mg/l	0.005	--	1	02/20/17 14:50	02/21/17 09:44	EPA 3005A	97,6010C	JH
Barium, Dissolved	0.029		mg/l	0.010	--	1	02/20/17 14:50	02/21/17 09:44	EPA 3005A	97,6010C	JH
Cadmium, Dissolved	ND		mg/l	0.004	--	1	02/20/17 14:50	02/21/17 09:44	EPA 3005A	97,6010C	JH
Chromium, Dissolved	ND		mg/l	0.0100	--	1	02/20/17 14:50	02/21/17 09:44	EPA 3005A	97,6010C	JH
Lead, Dissolved	ND		mg/l	0.010	--	1	02/20/17 14:50	02/21/17 09:44	EPA 3005A	97,6010C	JH
Mercury, Dissolved	ND		mg/l	0.0002	--	1	02/20/17 11:33	02/20/17 19:01	EPA 7470A	97,7470A	EA
Selenium, Dissolved	ND		mg/l	0.010	--	1	02/20/17 14:50	02/21/17 09:44	EPA 3005A	97,6010C	JH
Silver, Dissolved	ND		mg/l	0.007	--	1	02/20/17 14:50	02/21/17 09:44	EPA 3005A	97,6010C	JH



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1705151  
**Report Date:** 02/22/17

## Method Blank Analysis Batch Quality Control

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01,04,06 Batch: WG979266-1									
Iron, Total	ND	mg/l	0.050	--	1	02/20/17 10:30	02/21/17 09:31	19,200.7	PS

### Prep Information

Digestion Method: EPA 3005A

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
MCP Total Metals - Mansfield Lab for sample(s): 01,04,06 Batch: WG979279-1									
Antimony, Total	ND	mg/l	0.0040	--	1	02/20/17 10:30	02/20/17 18:28	97,6020A	TT
Arsenic, Total	ND	mg/l	0.0005	--	1	02/20/17 10:30	02/20/17 18:28	97,6020A	TT
Cadmium, Total	ND	mg/l	0.0005	--	1	02/20/17 10:30	02/20/17 18:28	97,6020A	TT
Chromium, Total	ND	mg/l	0.0010	--	1	02/20/17 10:30	02/20/17 18:28	97,6020A	TT
Copper, Total	ND	mg/l	0.0010	--	1	02/20/17 10:30	02/20/17 18:28	97,6020A	TT
Lead, Total	ND	mg/l	0.0010	--	1	02/20/17 10:30	02/20/17 18:28	97,6020A	TT
Nickel, Total	ND	mg/l	0.0020	--	1	02/20/17 10:30	02/20/17 18:28	97,6020A	TT
Selenium, Total	ND	mg/l	0.005	--	1	02/20/17 10:30	02/20/17 18:28	97,6020A	TT
Silver, Total	ND	mg/l	0.0005	--	1	02/20/17 10:30	02/20/17 18:28	97,6020A	TT
Zinc, Total	ND	mg/l	0.0100	--	1	02/20/17 10:30	02/20/17 18:28	97,6020A	TT

### Prep Information

Digestion Method: EPA 3005A

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
MCP Dissolved Metals - Mansfield Lab for sample(s): 01-07 Batch: WG979317-1									
Mercury, Dissolved	ND	mg/l	0.0002	--	1	02/20/17 11:33	02/20/17 18:29	97,7470A	EA

### Prep Information

Digestion Method: EPA 7470A



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1705151  
**Report Date:** 02/22/17

## Method Blank Analysis Batch Quality Control

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
MCP Total Metals - Mansfield Lab for sample(s): 01,04,06 Batch: WG979318-1									
Mercury, Total	ND	mg/l	0.0002	--	1	02/20/17 11:33	02/20/17 19:03	97,7470A	EA

### Prep Information

Digestion Method: EPA 7470A

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
MCP Dissolved Metals - Mansfield Lab for sample(s): 02-03,05,07 Batch: WG979379-1									
Arsenic, Dissolved	ND	mg/l	0.005	--	1	02/20/17 14:50	02/21/17 10:23	97,6010C	JH
Barium, Dissolved	ND	mg/l	0.010	--	1	02/20/17 14:50	02/21/17 10:23	97,6010C	JH
Cadmium, Dissolved	ND	mg/l	0.004	--	1	02/20/17 14:50	02/21/17 10:23	97,6010C	JH
Chromium, Dissolved	ND	mg/l	0.01	--	1	02/20/17 14:50	02/21/17 10:23	97,6010C	JH
Lead, Dissolved	ND	mg/l	0.010	--	1	02/20/17 14:50	02/21/17 10:23	97,6010C	JH
Selenium, Dissolved	ND	mg/l	0.010	--	1	02/20/17 14:50	02/21/17 10:23	97,6010C	JH
Silver, Dissolved	ND	mg/l	0.007	--	1	02/20/17 14:50	02/21/17 10:23	97,6010C	JH

### Prep Information

Digestion Method: EPA 3005A

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
MCP Dissolved Metals - Mansfield Lab for sample(s): 01,04,06 Batch: WG979380-1									
Antimony, Dissolved	ND	mg/l	0.0040	--	1	02/20/17 14:50	02/20/17 18:04	97,6020A	TT
Arsenic, Dissolved	ND	mg/l	0.0005	--	1	02/20/17 14:50	02/20/17 18:04	97,6020A	TT
Barium, Dissolved	ND	mg/l	0.0005	--	1	02/20/17 14:50	02/20/17 18:04	97,6020A	TT
Cadmium, Dissolved	ND	mg/l	0.0005	--	1	02/20/17 14:50	02/20/17 18:04	97,6020A	TT
Chromium, Dissolved	ND	mg/l	0.0010	--	1	02/20/17 14:50	02/20/17 18:04	97,6020A	TT
Copper, Dissolved	ND	mg/l	0.0010	--	1	02/20/17 14:50	02/20/17 18:04	97,6020A	TT
Lead, Dissolved	ND	mg/l	0.0010	--	1	02/20/17 14:50	02/20/17 18:04	97,6020A	TT
Nickel, Dissolved	ND	mg/l	0.0020	--	1	02/20/17 14:50	02/20/17 18:04	97,6020A	TT
Selenium, Dissolved	ND	mg/l	0.005	--	1	02/20/17 14:50	02/20/17 18:04	97,6020A	TT
Silver, Dissolved	ND	mg/l	0.0005	--	1	02/20/17 14:50	02/20/17 18:04	97,6020A	TT



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1705151  
**Report Date:** 02/22/17

## Method Blank Analysis Batch Quality Control

Zinc, Dissolved	ND	mg/l	0.0100	--	1	02/20/17 14:50	02/20/17 18:04	97,6020A	TT
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### **Prep Information**

Digestion Method: EPA 3005A

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Dissolved Metals - Mansfield Lab for sample(s): 01,04,06 Batch: WG979382-1									
Iron, Dissolved	ND	mg/l	0.05	--	1	02/20/17 14:50	02/21/17 10:10	19,200.7	PS

### **Prep Information**

Digestion Method: EPA 3005A



# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1705151  
**Report Date:** 02/22/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01,04,06 Batch: WG979266-2								
Iron, Total	93	-	-	-	85-115	-	-	-
MCP Total Metals - Mansfield Lab Associated sample(s): 01,04,06 Batch: WG979279-2 WG979279-3								
Antimony, Total	95	-	97	-	80-120	2	-	20
Arsenic, Total	103	-	105	-	80-120	2	-	20
Cadmium, Total	111	-	110	-	80-120	1	-	20
Chromium, Total	100	-	102	-	80-120	2	-	20
Copper, Total	102	-	102	-	80-120	0	-	20
Lead, Total	104	-	104	-	80-120	0	-	20
Nickel, Total	103	-	104	-	80-120	1	-	20
Selenium, Total	103	-	104	-	80-120	1	-	20
Silver, Total	102	-	102	-	80-120	0	-	20
Zinc, Total	104	-	106	-	80-120	2	-	20
MCP Dissolved Metals - Mansfield Lab Associated sample(s): 01-07 Batch: WG979317-2 WG979317-3								
Mercury, Dissolved	108	-	109	-	80-120	1	-	20
MCP Total Metals - Mansfield Lab Associated sample(s): 01,04,06 Batch: WG979318-2 WG979318-3								
Mercury, Total	107	-	107	-	80-120	0	-	20

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1705151  
**Report Date:** 02/22/17

Parameter	LCS %Recovery	LCSD %Recovery	%Recovery Limits	RPD	RPD Limits
<b>MCP Dissolved Metals - Mansfield Lab</b> Associated sample(s): 02-03,05,07 Batch: WG979379-2 WG979379-3					
Arsenic, Dissolved	110	108	80-120	2	20
Barium, Dissolved	96	94	80-120	2	20
Cadmium, Dissolved	101	101	80-120	0	20
Chromium, Dissolved	90	90	80-120	0	20
Lead, Dissolved	98	98	80-120	0	20
Selenium, Dissolved	109	109	80-120	0	20
Silver, Dissolved	100	99	80-120	1	20
<b>MCP Dissolved Metals - Mansfield Lab</b> Associated sample(s): 01,04,06 Batch: WG979380-2 WG979380-3					
Antimony, Dissolved	86	89	80-120	3	20
Arsenic, Dissolved	102	102	80-120	0	20
Barium, Dissolved	102	101	80-120	1	20
Cadmium, Dissolved	110	110	80-120	0	20
Chromium, Dissolved	102	100	80-120	2	20
Copper, Dissolved	103	102	80-120	1	20
Lead, Dissolved	105	106	80-120	1	20
Nickel, Dissolved	103	102	80-120	1	20
Selenium, Dissolved	108	108	80-120	0	20
Silver, Dissolved	101	100	80-120	1	20
Zinc, Dissolved	106	105	80-120	1	20

**Lab Control Sample Analysis**  
**Batch Quality Control**

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1705151  
**Report Date:** 02/22/17

Parameter	LCS %Recovery	LCSD %Recovery	%Recovery Limits	RPD	RPD Limits
Dissolved Metals - Mansfield Lab Associated sample(s): 01,04,06 Batch: WG979382-2					
Iron, Dissolved	93	-	85-115	-	

**Matrix Spike Analysis**  
**Batch Quality Control**

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1705151  
**Report Date:** 02/22/17

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	MSD Qual	MSD Found	MSD %Recovery	MSD Qual	Recovery Limits	RPD	Qual	RPD Limits
Dissolved Metals - Mansfield Lab Associated sample(s): 01,04,06 QC Batch ID: WG979382-3 QC Sample: L1705151-01 Client ID: VES-125 (MW)												
Iron, Dissolved	30	1	29	0	Q	-	-	-	75-125	-	-	20

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Duplicate Analysis**  
**Batch Quality Control**

**Lab Number:** L1705151  
**Report Date:** 02/22/17

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Dissolved Metals - Mansfield Lab Associated sample(s): 01,04,06 QC Batch ID: WG979382-4 QC Sample: L1705151-01 Client ID: VES-125 (MW)						
Iron, Dissolved	30	30	mg/l	0		20

# **INORGANICS & MISCELLANEOUS**



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1705151  
**Report Date:** 02/22/17

### SAMPLE RESULTS

Lab ID:	L1705151-01	Date Collected:	02/17/17 08:50
Client ID:	VES-125 (MW)	Date Received:	02/17/17
Sample Location:	MA	Field Prep:	Field Filtered (Dissolved Metals)
Matrix:	Water		

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>MCP General Chemistry - Westborough Lab</b>										
Cyanide, Total	ND		mg/l	0.005	--	1	02/20/17 10:55	02/20/17 14:57	97,9014	JO
<b>General Chemistry - Westborough Lab</b>										
Solids, Total Suspended	52.		mg/l	5.0	NA	1	-	02/19/17 14:35	121,2540D	SG
Chlorine, Total Residual	ND		mg/l	0.02	--	1	-	02/18/17 02:48	121,4500CL-D	VB
TPH, SGT-HEM	ND		mg/l	4.80	--	1.2	02/20/17 17:15	02/20/17 22:00	74,1664A	ML
Phenolics, Total	ND		mg/l	0.030	--	1	02/20/17 10:57	02/20/17 16:00	4,420.1	AW
Chromium, Hexavalent	ND		mg/l	0.010	--	1	02/18/17 04:25	02/18/17 04:54	121,3500CR-B	KA
<b>Anions by Ion Chromatography - Westborough Lab</b>										
Chloride	488.		mg/l	12.5	--	25	-	02/19/17 14:10	44,300.0	JC



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1705151  
**Report Date:** 02/22/17

### SAMPLE RESULTS

Lab ID:	L1705151-04	Date Collected:	02/17/17 12:00
Client ID:	VES-110 (MW)	Date Received:	02/17/17
Sample Location:	MA	Field Prep:	Field Filtered (Dissolved Metals)
Matrix:	Water		

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>MCP General Chemistry - Westborough Lab</b>										
Cyanide, Total	ND		mg/l	0.005	--	1	02/20/17 10:55	02/20/17 14:58	97,9014	JO
<b>General Chemistry - Westborough Lab</b>										
Solids, Total Suspended	ND		mg/l	5.0	NA	1	-	02/19/17 14:35	121,2540D	SG
Chlorine, Total Residual	ND		mg/l	0.02	--	1	-	02/18/17 02:48	121,4500CL-D	VB
TPH, SGT-HEM	ND		mg/l	5.20	--	1.3	02/20/17 17:15	02/20/17 22:00	74,1664A	ML
Phenolics, Total	ND		mg/l	0.030	--	1	02/20/17 10:57	02/20/17 16:01	4,420.1	AW
Chromium, Hexavalent	ND		mg/l	0.010	--	1	02/18/17 04:25	02/18/17 04:55	121,3500CR-B	KA
<b>Anions by Ion Chromatography - Westborough Lab</b>										
Chloride	194.		mg/l	5.00	--	10	-	02/19/17 14:22	44,300.0	JC



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1705151  
**Report Date:** 02/22/17

### SAMPLE RESULTS

Lab ID:	L1705151-06	Date Collected:	02/17/17 11:30
Client ID:	VES-119 (MW)	Date Received:	02/17/17
Sample Location:	MA	Field Prep:	Field Filtered (Dissolved Metals)
Matrix:	Water		

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>MCP General Chemistry - Westborough Lab</b>										
Cyanide, Total	ND		mg/l	0.005	--	1	02/20/17 10:55	02/20/17 15:23	97,9014	JO
<b>General Chemistry - Westborough Lab</b>										
Solids, Total Suspended	48.		mg/l	5.0	NA	1	-	02/19/17 14:35	121,2540D	SG
Chlorine, Total Residual	ND		mg/l	0.02	--	1	-	02/18/17 02:48	121,4500CL-D	VB
TPH, SGT-HEM	ND		mg/l	4.00	--	1	02/20/17 17:15	02/20/17 22:00	74,1664A	ML
Phenolics, Total	ND		mg/l	0.030	--	1	02/20/17 10:57	02/20/17 16:03	4,420.1	AW
Chromium, Hexavalent	ND		mg/l	0.010	--	1	02/18/17 04:25	02/18/17 04:57	121,3500CR-B	KA
<b>Anions by Ion Chromatography - Westborough Lab</b>										
Chloride	195.		mg/l	5.00	--	10	-	02/19/17 14:34	44,300.0	JC



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1705151  
**Report Date:** 02/22/17

**Method Blank Analysis**  
**Batch Quality Control**

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab for sample(s): 01,04,06 Batch: WG978978-1									
Chromium, Hexavalent	ND	mg/l	0.010	--	1	02/18/17 04:25	02/18/17 04:52	121,3500CR-B	KA
General Chemistry - Westborough Lab for sample(s): 01,04,06 Batch: WG979004-1									
Chlorine, Total Residual	ND	mg/l	0.02	--	1	-	02/18/17 02:48	121,4500CL-D	VB
General Chemistry - Westborough Lab for sample(s): 01,04,06 Batch: WG979154-1									
Solids, Total Suspended	ND	mg/l	5.0	NA	1	-	02/19/17 14:35	121,2540D	SG
Anions by Ion Chromatography - Westborough Lab for sample(s): 01,04,06 Batch: WG979188-1									
Chloride	ND	mg/l	0.500	--	1	-	02/19/17 11:46	44,300.0	JC
MCP General Chemistry - Westborough Lab for sample(s): 01,04,06 Batch: WG979264-1									
Cyanide, Total	ND	mg/l	0.005	--	1	02/20/17 10:55	02/20/17 14:51	97,9014	JO
General Chemistry - Westborough Lab for sample(s): 01,04,06 Batch: WG979320-1									
Phenolics, Total	ND	mg/l	0.030	--	1	02/20/17 10:57	02/20/17 15:19	4,420.1	AW
General Chemistry - Westborough Lab for sample(s): 01,04,06 Batch: WG979444-1									
TPH, SGT-HEM	ND	mg/l	4.00	--	1	02/20/17 17:15	02/20/17 22:00	74,1664A	ML



# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1705151  
**Report Date:** 02/22/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01,04,06 Batch: WG978978-2								
Chromium, Hexavalent	101	-	-	-	85-115	-	-	20
General Chemistry - Westborough Lab Associated sample(s): 01,04,06 Batch: WG979004-2								
Chlorine, Total Residual	97	-	-	-	90-110	-	-	-
Anions by Ion Chromatography - Westborough Lab Associated sample(s): 01,04,06 Batch: WG979188-2								
Chloride	101	-	-	-	90-110	-	-	-
MCP General Chemistry - Westborough Lab Associated sample(s): 01,04,06 Batch: WG979264-2 WG979264-3								
Cyanide, Total	110	-	104	-	80-120	6	-	20
General Chemistry - Westborough Lab Associated sample(s): 01,04,06 Batch: WG979320-2								
Phenolics, Total	90	-	-	-	70-130	-	-	-
General Chemistry - Westborough Lab Associated sample(s): 01,04,06 Batch: WG979444-2								
TPH	80	-	-	-	64-132	-	-	34

**Matrix Spike Analysis**  
**Batch Quality Control**

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1705151  
**Report Date:** 02/22/17

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	MSD Qual	MSD Found	MSD %Recovery	MSD Qual	Recovery Limits	RPD	Qual	RPD	Qual	Limits
General Chemistry - Westborough Lab Associated sample(s): 01,04,06 QC Batch ID: WG978978-4 QC Sample: L1705151-04 Client ID: VES-110 (MW)														
Chromium, Hexavalent	ND	0.1	0.105	105	-	-	-	-	85-115	-	-	20	-	
General Chemistry - Westborough Lab Associated sample(s): 01,04,06 QC Batch ID: WG979320-4 QC Sample: L1705151-06 Client ID: VES-119 (MW)														
Phenolics, Total	ND	0.4	0.39	98	-	-	-	-	70-130	-	-	20	-	
General Chemistry - Westborough Lab Associated sample(s): 01,04,06 QC Batch ID: WG979444-4 QC Sample: L1705151-04 Client ID: VES-110 (MW)														
TPH	ND	22	18.2	83	-	-	-	-	64-132	-	-	34	-	

**Lab Duplicate Analysis**  
Batch Quality Control

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1705151  
**Report Date:** 02/22/17

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab	Associated sample(s): 01,04,06	QC Batch ID: WG978978-3	QC Sample: L1705151-04	Client ID: VES-110 (MW)		
Chromium, Hexavalent	ND	ND	mg/l	NC		20
General Chemistry - Westborough Lab	Associated sample(s): 01,04,06	QC Batch ID: WG979004-3	QC Sample: L1705151-04	Client ID: VES-110 (MW)		
Chlorine, Total Residual	ND	ND	mg/l	NC		20
General Chemistry - Westborough Lab	Associated sample(s): 01,04,06	QC Batch ID: WG979320-3	QC Sample: L1705151-06	Client ID: VES-119 (MW)		
Phenolics, Total	ND	ND	mg/l	NC		20
General Chemistry - Westborough Lab	Associated sample(s): 01,04,06	QC Batch ID: WG979444-3	QC Sample: L1705151-01	Client ID: VES-125 (MW)		
TPH, SGT-HEM	ND	ND	mg/l	NC		34

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1705151  
**Report Date:** 02/22/17

### Sample Receipt and Container Information

Were project specific reporting limits specified? YES

#### Cooler Information Custody Seal

##### Cooler

A	Absent
D	Absent
B	Absent
C	Absent

#### Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L1705151-01A	Vial HCl preserved	A	N/A	2.4	Y	Absent	MCP-8260-10(14)
L1705151-01B	Vial HCl preserved	A	N/A	2.4	Y	Absent	MCP-8260-10(14)
L1705151-01C	Vial HCl preserved	A	N/A	2.4	Y	Absent	MCP-8260-10(14)
L1705151-01D	Vial HCl preserved	A	N/A	2.4	Y	Absent	VPH-10(14)
L1705151-01E	Vial HCl preserved	A	N/A	2.4	Y	Absent	VPH-10(14)
L1705151-01F	Vial HCl preserved	A	N/A	2.4	Y	Absent	VPH-10(14)
L1705151-01G	Vial HCl preserved	A	N/A	2.4	Y	Absent	MCP-8260SIM-10(14)
L1705151-01H	Vial HCl preserved	A	N/A	2.4	Y	Absent	MCP-8260SIM-10(14)
L1705151-01I	Vial HCl preserved	A	N/A	2.4	Y	Absent	MCP-8260SIM-10(14)
L1705151-01J	Vial Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> preserved	A	N/A	2.4	Y	Absent	504(14)
L1705151-01K	Vial Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> preserved	A	N/A	2.4	Y	Absent	504(14)
L1705151-01L	Plastic 250ml HNO <sub>3</sub> preserved	A	<2	2.4	Y	Absent	FE-RI(180),MCP-PB-6020S-10(180),MCP-7470S-10(28),MCP-SB-6020S-10(180),MCP-CU-6020S-10(180),MCP-BA-6020S-10(180),MCP-CD-6020S-10(180),MCP-SE-6020S-10(180),MCP-AS-6020S-10(180),MCP-NI-6020S-10(180),MCP-AG-6020S-10(180),MCP-ZN-6020S-10(180),MCP-CR-6020S-10(180)
L1705151-01M	Plastic 250ml HNO <sub>3</sub> preserved	A	<2	2.4	Y	Absent	MCP-CR-6020T-10(180),MCP-7470T-10(28),FE-UI(180),MCP-CU-6020T-10(180),MCP-ZN-6020T-10(180),MCP-AS-6020T-10(180),MCP-NI-6020T-10(180),MCP-AG-6020T-10(180),MCP-CD-6020T-10(180),MCP-SE-6020T-10(180),MCP-PB-6020T-10(180),MCP-SB-6020T-10(180)
L1705151-01N	Plastic 250ml NaOH preserved	A	>12	2.4	Y	Absent	MCP-TCN9014-10(14)

\*Values in parentheses indicate holding time in days

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1705151  
**Report Date:** 02/22/17

**Container Information**

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L1705151-01O	Plastic 950ml unpreserved	A	8	2.4	Y	Absent	CL-300(28),HEXCR-3500(1),TRC-4500(1)
L1705151-01P	Plastic 950ml unpreserved	A	8	2.4	Y	Absent	TSS-2540(7)
L1705151-01Q	Amber 950ml H <sub>2</sub> SO <sub>4</sub> preserved	A	<2	2.4	Y	Absent	TPHENOL-420(28)
L1705151-01R	Amber 1000ml HCl preserved	A	<2	2.4	Y	Absent	EPH-MS-10(14),EPHD-GC-10(14)
L1705151-01R1	Amber 1000ml HCl preserved	A	<2	2.4	Y	Absent	EPH-MS-10(14),EPHD-GC-10(14)
L1705151-01S	Amber 1000ml unpreserved	A	8	2.4	Y	Absent	8270TCL(7),8270TCL-SIM(7)
L1705151-01S1	Amber 1000ml unpreserved	A	8	2.4	Y	Absent	8270TCL(7),8270TCL-SIM(7)
L1705151-01T	Amber 1000ml HCl preserved	A	N/A	2.4	Y	Absent	TPH-1664(28)
L1705151-01T1	Amber 1000ml HCl preserved	A	N/A	2.4	Y	Absent	TPH-1664(28)
L1705151-01U	Amber 1000ml Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub>	A	8	2.4	Y	Absent	PCB-608(7)
L1705151-01U1	Amber 1000ml Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub>	A	8	2.4	Y	Absent	PCB-608(7)
L1705151-02A	Vial HCl preserved	A	N/A	2.4	Y	Absent	MCP-8260-10(14)
L1705151-02B	Vial HCl preserved	B	N/A	3.0	Y	Absent	MCP-8260-10(14)
L1705151-02C	Vial HCl preserved	B	N/A	3.0	Y	Absent	MCP-8260-10(14)
L1705151-02D	Vial HCl preserved	B	N/A	3.0	Y	Absent	VPH-10(14)
L1705151-02E	Vial HCl preserved	B	N/A	3.0	Y	Absent	VPH-10(14)
L1705151-02F	Vial HCl preserved	B	N/A	3.0	Y	Absent	VPH-10(14)
L1705151-02G	Plastic 250ml HNO <sub>3</sub> preserved	B	<2	3.0	Y	Absent	MCP-CD-6010S-10(180),MCP-7470S-10(28),MCP-AG-6010S-10(180),MCP-AS-6010S-10(180),MCP-CR-6010S-10(180),MCP-BA-6010S-10(180),MCP-PB-6010S-10(180),MCP-SE-6010S-10(180)
L1705151-02H	Amber 1000ml HCl preserved	B	<2	3.0	Y	Absent	EPH-MS-10(14),EPHD-GC-10(14)
L1705151-02I	Amber 1000ml HCl preserved	B	<2	3.0	Y	Absent	EPH-MS-10(14),EPHD-GC-10(14)
L1705151-03A	Vial HCl preserved	B	N/A	3.0	Y	Absent	MCP-8260-10(14)
L1705151-03B	Vial HCl preserved	B	N/A	3.0	Y	Absent	MCP-8260-10(14)
L1705151-03C	Vial HCl preserved	B	N/A	3.0	Y	Absent	MCP-8260-10(14)
L1705151-03D	Vial HCl preserved	B	N/A	3.0	Y	Absent	VPH-10(14)
L1705151-03E	Vial HCl preserved	B	N/A	3.0	Y	Absent	VPH-10(14)
L1705151-03F	Vial HCl preserved	B	N/A	3.0	Y	Absent	VPH-10(14)

\*Values in parentheses indicate holding time in days

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1705151  
**Report Date:** 02/22/17

**Container Information**

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L1705151-03G	Plastic 250ml HNO3 preserved	B	<2	3.0	Y	Absent	MCP-CD-6010S-10(180),MCP-7470S-10(28),MCP-AG-6010S-10(180),MCP-AS-6010S-10(180),MCP-CR-6010S-10(180),MCP-BA-6010S-10(180),MCP-PB-6010S-10(180),MCP-SE-6010S-10(180)
L1705151-03H	Amber 1000ml HCl preserved	B	<2	3.0	Y	Absent	EPH-MS-10(14),EPHD-GC-10(14)
L1705151-03I	Amber 1000ml HCl preserved	B	<2	3.0	Y	Absent	EPH-MS-10(14),EPHD-GC-10(14)
L1705151-04A	Vial HCl preserved	C	N/A	2.5	Y	Absent	MCP-8260-10(14)
L1705151-04B	Vial HCl preserved	C	N/A	2.5	Y	Absent	MCP-8260-10(14)
L1705151-04C	Vial HCl preserved	C	N/A	2.5	Y	Absent	MCP-8260-10(14)
L1705151-04D	Vial HCl preserved	C	N/A	2.5	Y	Absent	VPH-10(14)
L1705151-04E	Vial HCl preserved	C	N/A	2.5	Y	Absent	VPH-10(14)
L1705151-04F	Vial HCl preserved	C	N/A	2.5	Y	Absent	VPH-10(14)
L1705151-04G	Vial HCl preserved	C	N/A	2.5	Y	Absent	MCP-8260SIM-10(14)
L1705151-04H	Vial HCl preserved	C	N/A	2.5	Y	Absent	MCP-8260SIM-10(14)
L1705151-04I	Vial HCl preserved	C	N/A	2.5	Y	Absent	MCP-8260SIM-10(14)
L1705151-04J	Vial Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> preserved	C	N/A	2.5	Y	Absent	504(14)
L1705151-04K	Vial Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> preserved	C	N/A	2.5	Y	Absent	504(14)
L1705151-04L	Plastic 250ml HNO3 preserved	C	<2	2.5	Y	Absent	FE-RI(180),MCP-PB-6020S-10(180),MCP-7470S-10(28),MCP-SB-6020S-10(180),MCP-CU-6020S-10(180),MCP-BA-6020S-10(180),MCP-CD-6020S-10(180),MCP-SE-6020S-10(180),MCP-AS-6020S-10(180),MCP-NI-6020S-10(180),MCP-AG-6020S-10(180),MCP-ZN-6020S-10(180),MCP-CR-6020S-10(180)
L1705151-04M	Plastic 250ml HNO3 preserved	C	<2	2.5	Y	Absent	MCP-CR-6020T-10(180),MCP-7470T-10(28),FE-UI(180),MCP-CU-6020T-10(180),MCP-ZN-6020T-10(180),MCP-AS-6020T-10(180),MCP-NI-6020T-10(180),MCP-AG-6020T-10(180),MCP-CD-6020T-10(180),MCP-SE-6020T-10(180),MCP-PB-6020T-10(180),MCP-SB-6020T-10(180)
L1705151-04N	Plastic 250ml NaOH preserved	C	>12	2.5	Y	Absent	MCP-TCN9014-10(14)
L1705151-04O	Plastic 950ml unpreserved	C	8	2.5	Y	Absent	CL-300(28),HEXCR-3500(1),TRC-4500(1)

\*Values in parentheses indicate holding time in days

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1705151  
**Report Date:** 02/22/17

**Container Information**

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L1705151-04P	Plastic 950ml unpreserved	C	8	2.5	Y	Absent	TSS-2540(7)
L1705151-04Q	Amber 950ml H <sub>2</sub> SO <sub>4</sub> preserved	C	<2	2.5	Y	Absent	TPHENOL-420(28)
L1705151-04R	Amber 1000ml HCl preserved	C	<2	2.5	Y	Absent	EPH-MS-10(14), EPHD-GC-10(14)
L1705151-04R1	Amber 1000ml HCl preserved	C	<2	2.5	Y	Absent	EPH-MS-10(14), EPHD-GC-10(14)
L1705151-04S	Amber 1000ml unpreserved	C	8	2.5	Y	Absent	8270TCL(7), 8270TCL-SIM(7)
L1705151-04S1	Amber 1000ml unpreserved	C	8	2.5	Y	Absent	8270TCL(7), 8270TCL-SIM(7)
L1705151-04T	Amber 1000ml HCl preserved	C	N/A	2.5	Y	Absent	TPH-1664(28)
L1705151-04T1	Amber 1000ml HCl preserved	C	N/A	2.5	Y	Absent	TPH-1664(28)
L1705151-04U	Amber 1000ml Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub>	C	8	2.5	Y	Absent	PCB-608(7)
L1705151-04U1	Amber 1000ml Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub>	C	8	2.5	Y	Absent	PCB-608(7)
L1705151-05A	Vial HCl preserved	D	N/A	4.1	Y	Absent	MCP-8260-10(14)
L1705151-05B	Vial HCl preserved	D	N/A	4.1	Y	Absent	MCP-8260-10(14)
L1705151-05C	Vial HCl preserved	D	N/A	4.1	Y	Absent	MCP-8260-10(14)
L1705151-05D	Vial HCl preserved	D	N/A	4.1	Y	Absent	VPH-10(14)
L1705151-05E	Vial HCl preserved	D	N/A	4.1	Y	Absent	VPH-10(14)
L1705151-05F	Vial HCl preserved	D	N/A	4.1	Y	Absent	VPH-10(14)
L1705151-05G	Plastic 250ml HNO <sub>3</sub> preserved	D	<2	4.1	Y	Absent	MCP-CD-6010S-10(180), MCP-7470S-10(28), MCP-AG-6010S-10(180), MCP-AS-6010S-10(180), MCP-CR-6010S-10(180), MCP-BA-6010S-10(180), MCP-PB-6010S-10(180), MCP-SE-6010S-10(180)
L1705151-05H	Amber 1000ml HCl preserved	D	<2	4.1	Y	Absent	EPH-MS-10(14), EPHD-GC-10(14)
L1705151-05I	Amber 1000ml HCl preserved	D	<2	4.1	Y	Absent	EPH-MS-10(14), EPHD-GC-10(14)
L1705151-06A	Vial HCl preserved	D	N/A	4.1	Y	Absent	MCP-8260-10(14)
L1705151-06B	Vial HCl preserved	D	N/A	4.1	Y	Absent	MCP-8260-10(14)
L1705151-06C	Vial HCl preserved	D	N/A	4.1	Y	Absent	MCP-8260-10(14)
L1705151-06D	Vial HCl preserved	D	N/A	4.1	Y	Absent	VPH-10(14)
L1705151-06E	Vial HCl preserved	D	N/A	4.1	Y	Absent	VPH-10(14)
L1705151-06F	Vial HCl preserved	D	N/A	4.1	Y	Absent	VPH-10(14)
L1705151-06G	Vial HCl preserved	D	N/A	4.1	Y	Absent	MCP-8260SIM-10(14)
L1705151-06H	Vial HCl preserved	D	N/A	4.1	Y	Absent	MCP-8260SIM-10(14)
L1705151-06I	Vial HCl preserved	D	N/A	4.1	Y	Absent	MCP-8260SIM-10(14)
L1705151-06J	Vial Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> preserved	D	N/A	4.1	Y	Absent	504(14)
L1705151-06K	Vial Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> preserved	D	N/A	4.1	Y	Absent	504(14)

\*Values in parentheses indicate holding time in days

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1705151  
**Report Date:** 02/22/17

**Container Information**

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L1705151-06L	Plastic 250ml HNO3 preserved	D	<2	4.1	Y	Absent	FE-RI(180),MCP-PB-6020S-10(180),MCP-7470S-10(28),MCP-SB-6020S-10(180),MCP-CU-6020S-10(180),MCP-BA-6020S-10(180),MCP-CD-6020S-10(180),MCP-SE-6020S-10(180),MCP-AS-6020S-10(180),MCP-NI-6020S-10(180),MCP-AG-6020S-10(180),MCP-ZN-6020S-10(180),MCP-CR-6020S-10(180)
L1705151-06M	Plastic 250ml HNO3 preserved	D	<2	4.1	Y	Absent	MCP-CR-6020T-10(180),MCP-7470T-10(28),FE-UI(180),MCP-CU-6020T-10(180),MCP-ZN-6020T-10(180),MCP-AS-6020T-10(180),MCP-NI-6020T-10(180),MCP-AG-6020T-10(180),MCP-CD-6020T-10(180),MCP-SE-6020T-10(180),MCP-PB-6020T-10(180),MCP-SB-6020T-10(180)
L1705151-06N	Plastic 250ml NaOH preserved	D	>12	4.1	Y	Absent	MCP-TCN9014-10(14)
L1705151-06O	Plastic 950ml unpreserved	D	8	4.1	Y	Absent	CL-300(28),HEXCR-3500(1),TRC-4500(1)
L1705151-06P	Plastic 950ml unpreserved	D	8	4.1	Y	Absent	TSS-2540(7)
L1705151-06Q	Amber 950ml H2SO4 preserved	D	<2	4.1	Y	Absent	TPHENOL-420(28)
L1705151-06R	Amber 1000ml HCl preserved	D	<2	4.1	Y	Absent	EPH-MS-10(14),EPHD-GC-10(14)
L1705151-06R1	Amber 1000ml HCl preserved	D	<2	4.1	Y	Absent	EPH-MS-10(14),EPHD-GC-10(14)
L1705151-06S	Amber 1000ml unpreserved	D	8	4.1	Y	Absent	8270TCL(7),8270TCL-SIM(7)
L1705151-06S1	Amber 1000ml unpreserved	D	8	4.1	Y	Absent	8270TCL(7),8270TCL-SIM(7)
L1705151-06T	Amber 1000ml HCl preserved	D	N/A	4.1	Y	Absent	TPH-1664(28)
L1705151-06T1	Amber 1000ml HCl preserved	D	N/A	4.1	Y	Absent	TPH-1664(28)
L1705151-06U	Amber 1000ml Na2S2O3	D	8	4.1	Y	Absent	PCB-608(7)
L1705151-06U1	Amber 1000ml Na2S2O3	D	8	4.1	Y	Absent	PCB-608(7)
L1705151-07A	Vial HCl preserved	D	N/A	4.1	Y	Absent	MCP-8260-10(14)
L1705151-07B	Vial HCl preserved	D	N/A	4.1	Y	Absent	MCP-8260-10(14)
L1705151-07C	Vial HCl preserved	D	N/A	4.1	Y	Absent	MCP-8260-10(14)
L1705151-07D	Vial HCl preserved	D	N/A	4.1	Y	Absent	VPH-10(14)
L1705151-07E	Vial HCl preserved	D	N/A	4.1	Y	Absent	VPH-10(14)
L1705151-07F	Vial HCl preserved	D	N/A	4.1	Y	Absent	VPH-10(14)

\*Values in parentheses indicate holding time in days

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1705151  
**Report Date:** 02/22/17

**Container Information**

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L1705151-07G	Plastic 250ml HNO3 preserved	D	<2	4.1	Y	Absent	MCP-CD-6010S-10(180),MCP-7470S-10(28),MCP-AG-6010S-10(180),MCP-AS-6010S-10(180),MCP-CR-6010S-10(180),MCP-BA-6010S-10(180),MCP-PB-6010S-10(180),MCP-SE-6010S-10(180)
L1705151-07H	Amber 1000ml HCl preserved	D	<2	4.1	Y	Absent	EPH-MS-10(14),EPHD-GC-10(14)
L1705151-07I	Amber 1000ml HCl preserved	D	<2	4.1	Y	Absent	EPH-MS-10(14),EPHD-GC-10(14)

\*Values in parentheses indicate holding time in days

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1705151  
**Report Date:** 02/22/17

## GLOSSARY

### **Acronyms**

EDL	- Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).
EPA	- Environmental Protection Agency.
LCS	- Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCSD	- Laboratory Control Sample Duplicate: Refer to LCS.
LFB	- Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
MDL	- Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
MS	- Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available.
MSD	- Matrix Spike Sample Duplicate: Refer to MS.
NA	- Not Applicable.
NC	- Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
NDPA/DPA	- N-Nitrosodiphenylamine/Diphenylamine.
NI	- Not Ignitable.
NP	- Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.
RL	- Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
RPD	- Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.
SRM	- Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.
STLP	- Semi-dynamic Tank Leaching Procedure per EPA Method 1315.
TIC	- Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

### **Footnotes**

- 1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

### **Terms**

**Total:** With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

**Analytical Method:** Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

### **Data Qualifiers**

- A** - Spectra identified as "Aldol Condensation Product".
- B** - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the

**Report Format:** Data Usability Report



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1705151  
**Report Date:** 02/22/17

**Data Qualifiers**

reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

- C** - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.
- D** - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.
- E** - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.
- G** - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.
- H** - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.
- I** - The lower value for the two columns has been reported due to obvious interference.
- M** - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.
- NJ** - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.
- P** - The RPD between the results for the two columns exceeds the method-specified criteria.
- Q** - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)
- R** - Analytical results are from sample re-analysis.
- RE** - Analytical results are from sample re-extraction.
- S** - Analytical results are from modified screening analysis.
- J** - Estimated value. This represents an estimated concentration for Tentatively Identified Compounds (TICs).
- ND** - Not detected at the reporting limit (RL) for the sample.

*Report Format:* Data Usability Report



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1705151  
**Report Date:** 02/22/17

## REFERENCES

- 1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - IV, 2007.
- 4 Methods for Chemical Analysis of Water and Wastes. EPA 600/4-79-020. Revised March 1983.
- 5 Methods for the Organic Chemical Analysis of Municipal and Industrial Wastewater. Appendix A, Part 136, 40 CFR (Code of Federal Regulations).
- 14 Methods for the Determination of Organic Compounds in Finished Drinking Water and Raw Source Water. EPA/600/4-88/039, Revised July 1991.
- 19 Inductively Coupled Plasma Atomic Emission Spectrometric Method for Trace Element Analysis of Water and Wastes. Appendix C, Part 136, 40 CFR (Code of Federal Regulations). July 1, 1999 edition.
- 44 Methods for the Determination of Inorganic Substances in Environmental Samples, EPA/600/R-93/100, August 1993.
- 74 Method 1664, Revision A: N-Hexane Extractable Material (HEM; Oil & Grease) and Silica Gel Treated N-Hexane Extractable Material (SGT-HEM; Non-polar Material) by Extraction and Gravimetry, EPA-821-R-98-002, February 1999.
- 97 EPA Test Methods (SW-846) with QC Requirements & Performance Standards for the Analysis of EPA SW-846 Methods under the Massachusetts Contingency Plan, WSC-CAM-IIA, IIB, IIIA, IIIB, IIIC, IID, VA, VB, VC, VIA, VIB, VIIIA and VIIIB, July 2010.
- 98 Method for the Determination of Extractable Petroleum Hydrocarbons (EPH), MassDEP, May 2004, Revision 1.1 with QC Requirements & Performance Standards for the Analysis of EPH under the Massachusetts Contingency Plan, WSC-CAM-IVB, July 2010.
- 100 Method for the Determination of Volatile Petroleum Hydrocarbons (VPH), MassDEP, May 2004, Revision 1.1 with QC Requirements & Performance Standards for the Analysis of VPH under the Massachusetts Contingency Plan, WSC-CAM-IVA, July 2010.
- 121 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. Standard Methods Online.

## LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at its own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.



## Certification Information

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**The following analytes are not included in our Primary NELAP Scope of Accreditation:**

**Westborough Facility**

EPA 624: m/p-xylene, o-xylene  
EPA 8260C: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), Methyl methacrylate, 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.  
EPA 8270D: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.  
EPA 300: DW: Bromide  
EPA 6860: NPW and SCM: Perchlorate  
EPA 9010: NPW and SCM: Amenable Cyanide Distillation  
EPA 9012B: NPW: Total Cyanide  
EPA 9050A: NPW: Specific Conductance  
SM3500: NPW: Ferrous Iron  
SM4500: NPW: Amenable Cyanide, Dissolved Oxygen; SCM: Total Phosphorus, TKN, NO<sub>2</sub>, NO<sub>3</sub>.  
SM5310C: DW: Dissolved Organic Carbon

**Mansfield Facility**

SM 2540D: TSS  
EPA 3005A NPW  
EPA 8082A: NPW: PCB: 1, 5, 31, 87, 101, 110, 141, 151, 153, 180, 183, 187.  
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.  
Biological Tissue Matrix: EPA 3050B

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**The following analytes are included in our Massachusetts DEP Scope of Accreditation**

**Westborough Facility:**

**Drinking Water**

EPA 300.0: Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C**, **SM4500CN-CE**, **EPA 180.1**, **SM2130B**, **SM4500CI-D**, **SM2320B**, **SM2540C**, **SM4500H-B**  
EPA 332: Perchlorate; **EPA 524.2**: THMs and VOCs; **EPA 504.1**: EDB, DBCP.  
Microbiology: **SM9215B**; **SM9223-P/A**, **SM9223B-Colilert-QT**,**SM9222D**.

**Non-Potable Water**

**SM4500H,B**, **EPA 120.1**, **SM2510B**, **SM2540C**, **SM2320B**, **SM4500CL-E**, **SM4500F-BC**, **SM4500NH3-BH**, **EPA 350.1**: Ammonia-N, LACHAT 10-107-06-1-B: Ammonia-N, **SM4500NO3-F**, **EPA 353.2**: Nitrate-N, **EPA 351.1**, **SM4500P-E**, **SM4500P-B**, **E**, **SM4500SO4-E**, **SM5220D**, **EPA 410.4**, **SM5210B**, **SM5310C**, **SM4500CL-D**, **EPA 1664**, **EPA 420.1**, **SM4500-CN-CE**, **SM2540D**.  
**EPA 624**: Volatile Halocarbons & Aromatics,  
**EPA 608**: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs  
**EPA 625**: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045**: PCB-Oil.  
Microbiology: **SM9223B-Colilert-QT**; **Enterolert-QT**, **SM9221E**.

**Mansfield Facility:**

**Drinking Water**

**EPA 200.7**: Ba, Be, Cd, Cr, Cu, Ni, Na, Ca. **EPA 200.8**: Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Ni, Se, TL. **EPA 245.1 Hg**.

**Non-Potable Water**

**EPA 200.7**: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.  
**EPA 200.8**: Al, Sb, As, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn.  
**EPA 245.1 Hg**.  
**SM2340B**

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For a complete listing of analytes and methods, please contact your Alpha Project Manager.



## **CHAIN OF CUSTODY**

PAGE    OF

Date Rec'd in Lab: 02/17/17

ALPHA Job #: ~~1170515~~ 1170514 im 2/17/17



## **CHAIN OF CUSTODY**

PAGE        OF

Date Rec'd in Lab: 02/17/17

ALPHA Job #: ~~1170515~~ 1170514 im2 1/7/17

**Container Type**  
 P= Plastic  
 A= Amber glass  
 V= Vial  
 G= Glass  
 B= Bacteria cup  
 C= Cube  
 O= Other  
 E= Encore  
 D= BOD Bottle

**Preservative**

- A= None
- B= HCl
- C=  $\text{HNO}_3$
- D=  $\text{H}_2\text{SO}_4$
- E= NaOH
- F= MeOH
- G=  $\text{NaHSO}_3$
- H =  $\text{Na}_2\text{S}_2\text{O}_5$
- I= Ascorbic
- J =  $\text{NH}_4\text{Cl}$
- K= Zn Aceta
- O= Other

Container Type	V		P	A	V				
Preservative	B		C	B	B				

Relinquished By:

Date/Time  
2/17/17 1545  
2/17/17 1803

Received By:

Date/Time

All samples submitted are subject to Alpha's Terms and Conditions  
See reverse side

**Method Blank Summary  
Form 4**

Client	: Vertex Environmental Services, Inc.	Lab Number	: L1705151
Project Name	: EAST BOSTON	Project Number	: 43068
Lab Sample ID	: WG979334-5	Lab File ID	: V16170220A07
Instrument ID	: VOA116		
Matrix	: WATER	Analysis Date	: 02/20/17 06:45

Client Sample No.	Lab Sample ID	Analysis Date
WG979334-3LCS	WG979334-3	02/20/17 04:40
WG979334-4LCSD	WG979334-4	02/20/17 05:05
VES-125 (MW)	L1705151-01	02/20/17 13:02
VES-110 (MW)	L1705151-04	02/20/17 13:27
VES-119 (MW)	L1705151-06	02/20/17 14:17

# Continuing Calibration Form 7

Client : Vertex Environmental Services, Inc.      Lab Number : L1705151  
 Project Name : EAST BOSTON      Project Number : 43068  
 Instrument ID : VOA116      Calibration Date : 02/20/17 04:40  
 Lab File ID : V16170220A02      Init. Calib. Date(s) : 02/17/17      02/17/17  
 Sample No : WG979334-2      Init. Calib. Times : 16:39      19:36  
 Channel :

Compound	Ave. RRF	RRF	Min RRF	%D	Max %D	Area%	Dev(min)
Fluorobenzene	1	1	-	0	20	104	0
1,4-Dioxane	10	10.557	-	-5.6	20	118	0
1,4-Dichlorobenzene-d4	1	1	-	0	20	101	0

---

\* Value outside of QC limits.



**Method Blank Summary  
Form 4**

Client	: Vertex Environmental Services, Inc.	Lab Number	: L1705151
Project Name	: EAST BOSTON	Project Number	: 43068
Lab Sample ID	: WG979299-5	Lab File ID	: V16170220A07
Instrument ID	: VOA116		
Matrix	: WATER	Analysis Date	: 02/20/17 06:45

Client Sample No.	Lab Sample ID	Analysis Date
WG979299-3LCS	WG979299-3	02/20/17 05:30
WG979299-4LCSD	WG979299-4	02/20/17 05:55
VES-109 (MW)	L1705151-02	02/20/17 12:12
VES-108 (MW)	L1705151-03	02/20/17 12:37
VES-125 (MW)	L1705151-01	02/20/17 13:02
VES-110 (MW)	L1705151-04	02/20/17 13:27
VES-106 (MW)	L1705151-05	02/20/17 13:52
VES-119 (MW)	L1705151-06	02/20/17 14:17
VES-111 (MW)	L1705151-07	02/20/17 14:43

**Continuing Calibration  
Form 7**

Client	: Vertex Environmental Services, Inc.	Lab Number	: L1705151
Project Name	: EAST BOSTON	Project Number	: 43068
Instrument ID	: VOA116	Calibration Date	: 02/20/17 05:30
Lab File ID	: V16170220A04	Init. Calib. Date(s)	: 01/30/17
Sample No	: WG979299-2	Init. Calib. Times	: 08:54 01/30/17 11:50
Channel	:		

Compound	Ave. RRF	RRF	Min RRF	%D	Max %D	Area%	Dev(min)
Fluorobenzene	1	1	-	0	20	72	0
Dichlorodifluoromethane	0.489	0.514	-	-5.1	20	71	0
Chloromethane	0.517	0.553	-	-7	20	73	0
Vinyl chloride	0.5	0.522	-	-4.4	20	73	0
Bromomethane	0.2	0.186	-	7	20	66	0
Chloroethane	0.245	0.246	-	-0.4	20	67	0
Trichlorofluoromethane	0.574	0.732	-	-27.5*	20	85	0
Ethyl ether	0.134	0.133	-	0.7	20	69	-.01
1,1-Dichloroethene	0.339	0.362	-	-6.8	20	75	0
Carbon disulfide	1.056	1.141	-	-8	20	77	0
Freon-113	0.336	0.408	-	-21.4*	20	80	0
Methylene chloride	0.39	0.412	-	-5.6	20	74	0
Acetone	10	10.674	-	-6.7	20	68	0
trans-1,2-Dichloroethene	0.373	0.39	-	-4.6	20	73	0
Methyl tert-butyl ether	0.693	0.678	-	2.2	20	72	0
tert-Butyl alcohol	0.015	0.015*	-	0	20	71	0
Diisopropyl ether	1.239	1.119	-	9.7	20	67	0
1,1-Dichloroethane	0.791	0.863	-	-9.1	20	74	-.01
Ethyl tert-butyl ether	1.001	0.974	-	2.7	20	71	0
cis-1,2-Dichloroethene	0.404	0.424	-	-5	20	73	0
2,2-Dichloropropane	0.577	0.669	-	-15.9	20	82	0
Bromochloromethane	0.175	0.202	-	-15.4	20	76	0
Chloroform	0.703	0.793	-	-12.8	20	77	0
Carbon tetrachloride	0.575	0.714	-	-24.2*	20	86	0
Tetrahydrofuran	0.075	0.074	-	1.3	20	69	0
Dibromofluoromethane	0.44	0.457	-	-3.9	20	74	0
1,1,1-Trichloroethane	0.626	0.752	-	-20.1*	20	83	0
2-Butanone	0.084	0.085*	-	-1.2	20	69	-.01
1,1-Dichloropropene	0.501	0.529	-	-5.6	20	75	0
Benzene	1.52	1.609	-	-5.9	20	72	0
tert-Amyl methyl ether	0.708	0.663	-	6.4	20	73	0
1,2-Dichloroethane-d4	0.474	0.492	-	-3.8	20	75	0
1,2-Dichloroethane	0.475	0.545	-	-14.7	20	79	0
Trichloroethene	0.418	0.47	-	-12.4	20	78	0
Dibromomethane	0.194	0.213	-	-9.8	20	77	0
1,2-Dichloropropane	0.413	0.421	-	-1.9	20	70	0
2-Chloroethyl vinyl ether	10	6.771	-	32.3*	20	60	0
Bromodichloromethane	0.517	0.557	-	-7.7	20	78	0
1,4-Dioxane	0.00125	0.00115*	-	8	20	70	0
cis-1,3-Dichloropropene	0.438	0.449	-	-2.5	20	73	0
Chlorobenzene-d5	1	1	-	0	20	75	0
Toluene-d8	1.278	1.228	-	3.9	20	71	0
Toluene	0.81	0.835	-	-3.1	20	75	0
4-Methyl-2-pentanone	10	8.203	-	18	20	67	0
Tetrachloroethene	0.378	0.417	-	-10.3	20	81	0

\* Value outside of QC limits.



# Continuing Calibration

## Form 7

Client : Vertex Environmental Services, Inc.      Lab Number : L1705151  
 Project Name : EAST BOSTON      Project Number : 43068  
 Instrument ID : VOA116      Calibration Date : 02/20/17 05:30  
 Lab File ID : V16170220A04      Init. Calib. Date(s) : 01/30/17      01/30/17  
 Sample No : WG979299-2      Init. Calib. Times : 08:54      11:50  
 Channel :

Compound	Ave. RRF	RRF	Min RRF	%D	Max %D	Area%	Dev(min)
trans-1,3-Dichloropropene	0.374	0.367	-	1.9	20	75	0
1,1,2-Trichloroethane	0.193	0.195	-	-1	20	73	0
Chlorodibromomethane	0.286	0.304	-	-6.3	20	78	0
1,3-Dichloropropane	0.381	0.376	-	1.3	20	72	0
1,2-Dibromoethane	0.209	0.217	-	-3.8	20	74	0
2-Hexanone	10	7.464	-	25.4*	20	64	0
Chlorobenzene	0.874	0.89	-	-1.8	20	75	0
Ethylbenzene	1.505	1.545	-	-2.7	20	74	0
1,1,1,2-Tetrachloroethane	0.321	0.357	-	-11.2	20	80	0
p/m Xylene	20	21.011	-	-5.1	20	77	0
o Xylene	20	19.595	-	2	20	75	0
Styrene	20	18.96	-	5.2	20	73	0
1,4-Dichlorobenzene-d4	1	1	-	0	20	85	0
Bromoform	0.329	0.305	-	7.3	20	80	0
Isopropylbenzene	10	8.5	-	15	20	78	0
4-Bromofluorobenzene	0.827	0.76	-	8.1	20	80	0
Bromobenzene	0.667	0.625	-	6.3	20	77	0
n-Propylbenzene	3.447	3.205	-	7	20	76	0
1,1,2,2-Tetrachloroethane	0.477	0.433	-	9.2	20	74	0
2-Chlorotoluene	2.351	2.289	-	2.6	20	78	0
1,3,5-Trimethylbenzene	10	9.283	-	7.2	20	79	0
1,2,3-Trichloropropane	0.376	0.344	-	8.5	20	76	0
4-Chlorotoluene	1.991	1.875	-	5.8	20	76	0
tert-Butylbenzene	10	8.595	-	14	20	78	0
1,2,4-Trimethylbenzene	10	9.088	-	9.1	20	78	0
sec-Butylbenzene	2.307	2.709	-	-17.4	20	92	-01
p-Isopropyltoluene	10	8.792	-	12.1	20	79	0
1,3-Dichlorobenzene	1.357	1.343	-	1	20	80	0
1,4-Dichlorobenzene	1.333	1.29	-	3.2	20	79	0
n-Butylbenzene	10	9.143	-	8.6	20	77	0
1,2-Dichlorobenzene	1.186	1.127	-	5	20	78	0
1,2-Dibromo-3-chloropropan	10	9.071	-	9.3	20	78	0
Hexachlorobutadiene	0.294	0.29	-	1.4	20	85	0
1,2,4-Trichlorobenzene	10	8.157	-	18.4	20	80	0
Naphthalene	10	7.091	-	29.1*	20	76	0
1,2,3-Trichlorobenzene	0.56	0.504	-	10	20	80	0

\* Value outside of QC limits.





## ANALYTICAL REPORT

Lab Number:	L1705305
Client:	Vertex Environmental Services, Inc. 400 Libbey Pkwy Weymouth, MA 02184
ATTN:	Bill Gibbons
Phone:	(617) 830-1540
Project Name:	EAST BOSTON
Project Number:	43068
Report Date:	02/22/17

The original project report/data package is held by Alpha Analytical. This report/data package is paginated and should be reproduced only in its entirety. Alpha Analytical holds no responsibility for results and/or data that are not consistent with the original.

Certifications & Approvals: MA (M-MA086), NH NELAP (2064), NJ NELAP (MA935), CT (PH-0574), IL (200077), ME (MA00086), MD (348), NY (11148), NC (25700/666), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #P330-14-00197).

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320 Forbes Boulevard, Mansfield, MA 02048-1806  
508-822-9300 (Fax) 508-822-3288 800-624-9220 - [www.alphalab.com](http://www.alphalab.com)



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1705305  
**Report Date:** 02/22/17

<b>Alpha Sample ID</b>	<b>Client ID</b>	<b>Matrix</b>	<b>Sample Location</b>	<b>Collection Date/Time</b>	<b>Receive Date</b>
L1705305-01	VES-135 (MW)	WATER	MA	02/15/17 13:00	02/15/17

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1705305  
**Report Date:** 02/22/17

### MADEP MCP Response Action Analytical Report Certification

This form provides certifications for all samples performed by MCP methods. Please refer to the Sample Results and Container Information sections of this report for specification of MCP methods used for each analysis. The following questions pertain only to MCP Analytical Methods.

<b>An affirmative response to questions A through F is required for "Presumptive Certainty" status</b>		
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
B	Were the analytical method(s) and all associated QC requirements specified in the selected CAM protocol(s) followed?	YES
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
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
E a.	VPH, EPH, and APH Methods only: Was each method conducted without significant modification(s)? (Refer to the individual method(s) for a list of significant modifications).	N/A
E b.	APH and TO-15 Methods only: Was the complete analyte list reported for each method?	N/A
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

<b>A response to questions G, H and I is required for "Presumptive Certainty" status</b>		
G	Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocol(s)?	YES
H	Were all QC performance standards specified in the CAM protocol(s) achieved?	YES
I	Were results reported for the complete analyte list specified in the selected CAM protocol(s)?	NO

**For any questions answered "No", please refer to the case narrative section on the following page(s).**

Please note that sample matrix information is located in the Sample Results section of this report.



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1705305  
**Report Date:** 02/22/17

### Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively. When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. All specific QC information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated usability implications. Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances the specific failure is not narrated but noted in the associated QC table. The information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated usability implications.

Please see the associated ADEx data file for a comparison of laboratory reporting limits that were achieved with the regulatory Numerical Standards requested on the Chain of Custody.

#### HOLD POLICY

For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Client Service Representative and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Client Services at 800-624-9220 with any questions.

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1705305  
**Report Date:** 02/22/17

### Case Narrative (continued)

MCP Related Narratives

Dissolved Metals

In reference to question I:

All samples were analyzed for a subset of MCP analytes per the Chain of Custody.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature:

 Cristin Walker

Title: Technical Director/Representative

Date: 02/22/17

## METALS



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1705305  
**Report Date:** 02/22/17

**SAMPLE RESULTS**

Lab ID:	L1705305-01	Date Collected:	02/15/17 13:00
Client ID:	VES-135 (MW)	Date Received:	02/15/17
Sample Location:	MA	Field Prep:	Field Filtered
Matrix:	Water		(Dissolved Metals)

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
<b>MCP Dissolved Metals - Mansfield Lab</b>											
Antimony, Dissolved	ND		mg/l	0.0040	--	1	02/22/17 05:55	02/22/17 10:03	EPA 3005A	97,6020A	AM
Arsenic, Dissolved	0.0013		mg/l	0.0005	--	1	02/22/17 05:55	02/22/17 10:03	EPA 3005A	97,6020A	AM
Cadmium, Dissolved	ND		mg/l	0.0002	--	1	02/22/17 05:55	02/22/17 10:03	EPA 3005A	97,6020A	AM
Chromium, Dissolved	ND		mg/l	0.0010	--	1	02/22/17 05:55	02/22/17 10:03	EPA 3005A	97,6020A	AM
Copper, Dissolved	ND		mg/l	0.0010	--	1	02/22/17 05:55	02/22/17 10:03	EPA 3005A	97,6020A	AM
Lead, Dissolved	ND		mg/l	0.0005	--	1	02/22/17 05:55	02/22/17 10:03	EPA 3005A	97,6020A	AM
Nickel, Dissolved	ND		mg/l	0.0020	--	1	02/22/17 05:55	02/22/17 10:03	EPA 3005A	97,6020A	AM
Selenium, Dissolved	ND		mg/l	0.005	--	1	02/22/17 05:55	02/22/17 10:03	EPA 3005A	97,6020A	AM
Silver, Dissolved	ND		mg/l	0.0005	--	1	02/22/17 05:55	02/22/17 10:03	EPA 3005A	97,6020A	AM
Zinc, Dissolved	ND		mg/l	0.0100	--	1	02/22/17 05:55	02/22/17 10:03	EPA 3005A	97,6020A	AM
<b>Dissolved Metals - Mansfield Lab</b>											
Iron, Dissolved	26		mg/l	0.05	--	1	02/22/17 05:55	02/22/17 12:36	EPA 3005A	19,200.7	PS



**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1705305  
**Report Date:** 02/22/17

## Method Blank Analysis Batch Quality Control

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Dissolved Metals - Mansfield Lab for sample(s): 01 Batch: WG979889-1									
Iron, Dissolved	ND	mg/l	0.05	--	1	02/22/17 05:55	02/22/17 12:27	19,200.7	PS

### Prep Information

Digestion Method: EPA 3005A

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
MCP Dissolved Metals - Mansfield Lab for sample(s): 01 Batch: WG979891-1									
Antimony, Dissolved	ND	mg/l	0.0040	--	1	02/22/17 05:55	02/22/17 09:54	97,6020A	AM
Arsenic, Dissolved	ND	mg/l	0.0005	--	1	02/22/17 05:55	02/22/17 09:54	97,6020A	AM
Cadmium, Dissolved	ND	mg/l	0.0002	--	1	02/22/17 05:55	02/22/17 09:54	97,6020A	AM
Chromium, Dissolved	ND	mg/l	0.0010	--	1	02/22/17 05:55	02/22/17 09:54	97,6020A	AM
Copper, Dissolved	ND	mg/l	0.0010	--	1	02/22/17 05:55	02/22/17 09:54	97,6020A	AM
Lead, Dissolved	ND	mg/l	0.0005	--	1	02/22/17 05:55	02/22/17 09:54	97,6020A	AM
Nickel, Dissolved	ND	mg/l	0.0020	--	1	02/22/17 05:55	02/22/17 09:54	97,6020A	AM
Selenium, Dissolved	ND	mg/l	0.005	--	1	02/22/17 05:55	02/22/17 09:54	97,6020A	AM
Silver, Dissolved	ND	mg/l	0.0005	--	1	02/22/17 05:55	02/22/17 09:54	97,6020A	AM
Zinc, Dissolved	ND	mg/l	0.0100	--	1	02/22/17 05:55	02/22/17 09:54	97,6020A	AM

### Prep Information

Digestion Method: EPA 3005A

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1705305  
**Report Date:** 02/22/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Dissolved Metals - Mansfield Lab Associated sample(s): 01 Batch: WG979889-2								
Iron, Dissolved	100	-	-	-	85-115	-	-	-
MCP Dissolved Metals - Mansfield Lab Associated sample(s): 01 Batch: WG979891-2 WG979891-3								
Antimony, Dissolved	100	-	101	-	80-120	1	-	20
Arsenic, Dissolved	108	-	103	-	80-120	5	-	20
Cadmium, Dissolved	112	-	105	-	80-120	6	-	20
Chromium, Dissolved	97	-	97	-	80-120	0	-	20
Copper, Dissolved	104	-	102	-	80-120	2	-	20
Lead, Dissolved	105	-	102	-	80-120	3	-	20
Nickel, Dissolved	105	-	102	-	80-120	3	-	20
Selenium, Dissolved	112	-	112	-	80-120	0	-	20
Silver, Dissolved	105	-	102	-	80-120	3	-	20
Zinc, Dissolved	112	-	115	-	80-120	3	-	20

**Matrix Spike Analysis**  
**Batch Quality Control**

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1705305  
**Report Date:** 02/22/17

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Dissolved Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG979889-3 QC Sample: L1705305-01 Client ID: VES-135 (MW)												
Iron, Dissolved	26	1	27	100		-	-	-	75-125	-	-	20

**Lab Duplicate Analysis**  
Batch Quality Control

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1705305  
**Report Date:** 02/22/17

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Dissolved Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG979889-4 QC Sample: L1705305-01 Client ID: VES-135 (MW)						
Iron, Dissolved	26	25	mg/l	4		20

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1705305  
**Report Date:** 02/22/17

### Sample Receipt and Container Information

Were project specific reporting limits specified? YES

#### Cooler Information Custody Seal

##### Cooler

B Absent

#### Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L1705305-01A	Plastic 250ml HNO3 preserved	B	<2	5.4	Y	Absent	FE-RI(180),MCP-PB-6020S-10(180),MCP-SB-6020S-10(180),MCP-CU-6020S-10(180),MCP-CD-6020S-10(180),MCP-SE-6020S-10(180),MCP-AS-6020S-10(180),MCP-NI-6020S-10(180),MCP-AG-6020S-10(180),MCP-ZN-6020S-10(180),MCP-CR-6020S-10(180)

\*Values in parentheses indicate holding time in days

**Project Name:** EAST BOSTON  
**Project Number:** 43068

**Lab Number:** L1705305  
**Report Date:** 02/22/17

## GLOSSARY

### **Acronyms**

EDL	- Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).
EPA	- Environmental Protection Agency.
LCS	- Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCSD	- Laboratory Control Sample Duplicate: Refer to LCS.
LFB	- Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
MDL	- Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
MS	- Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available.
MSD	- Matrix Spike Sample Duplicate: Refer to MS.
NA	- Not Applicable.
NC	- Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
NDPA/DPA	- N-Nitrosodiphenylamine/Diphenylamine.
NI	- Not Ignitable.
NP	- Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.
RL	- Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
RPD	- Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.
SRM	- Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.
STLP	- Semi-dynamic Tank Leaching Procedure per EPA Method 1315.
TIC	- Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

### **Footnotes**

- 1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

### **Terms**

**Total:** With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

**Analytical Method:** Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

### **Data Qualifiers**

- A** - Spectra identified as "Aldol Condensation Product".
- B** - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the

**Report Format:** Data Usability Report



**Project Name:** EAST BOSTON  
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**Data Qualifiers**

reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

- C** - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.
- D** - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.
- E** - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.
- G** - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.
- H** - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.
- I** - The lower value for the two columns has been reported due to obvious interference.
- M** - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.
- NJ** - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.
- P** - The RPD between the results for the two columns exceeds the method-specified criteria.
- Q** - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)
- R** - Analytical results are from sample re-analysis.
- RE** - Analytical results are from sample re-extraction.
- S** - Analytical results are from modified screening analysis.
- J** - Estimated value. This represents an estimated concentration for Tentatively Identified Compounds (TICs).
- ND** - Not detected at the reporting limit (RL) for the sample.

*Report Format:* Data Usability Report



**Project Name:** EAST BOSTON  
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**Report Date:** 02/22/17

## REFERENCES

- 19 Inductively Coupled Plasma Atomic Emission Spectrometric Method for Trace Element Analysis of Water and Wastes. Appendix C, Part 136, 40 CFR (Code of Federal Regulations). July 1, 1999 edition.
- 97 EPA Test Methods (SW-846) with QC Requirements & Performance Standards for the Analysis of EPA SW-846 Methods under the Massachusetts Contingency Plan, WSC-CAM-IIA, IIB, IIIA, IIIB, IIIC, IID, VA, VB, VC, VIA, VIB, VIIIA and VIIIB, July 2010.

## LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at its own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.



## Certification Information

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**The following analytes are not included in our Primary NELAP Scope of Accreditation:**

**Westborough Facility**

EPA 624: m/p-xylene, o-xylene

EPA 8260C: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), Methyl methacrylate, 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.

EPA 8270D: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.

EPA 300: DW: Bromide

EPA 6860: NPW and SCM: Perchlorate

EPA 9010: NPW and SCM: Amenable Cyanide Distillation

EPA 9012B: NPW: Total Cyanide

EPA 9050A: NPW: Specific Conductance

SM3500: NPW: Ferrous Iron

SM4500: NPW: Amenable Cyanide, Dissolved Oxygen; SCM: Total Phosphorus, TKN, NO<sub>2</sub>, NO<sub>3</sub>.

SM5310C: DW: Dissolved Organic Carbon

**Mansfield Facility**

SM 2540D: TSS

EPA 3005A NPW

EPA 8082A: NPW: PCB: 1, 5, 31, 87, 101, 110, 141, 151, 153, 180, 183, 187.

EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.

**Biological Tissue Matrix**: EPA 3050B

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**The following analytes are included in our Massachusetts DEP Scope of Accreditation**

**Westborough Facility:**

**Drinking Water**

EPA 300.0: Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C**, **SM4500CN-CE**, **EPA 180.1**,

**SM2130B**, **SM4500CI-D**, **SM2320B**, **SM2540C**, **SM4500H-B**

EPA 332: Perchlorate; **EPA 524.2**: THMs and VOCs; **EPA 504.1**: EDB, DBCP.

Microbiology: **SM9215B**; **SM9223-P/A**, **SM9223B-Colilert-QT**, **SM9222D**.

**Non-Potable Water**

**SM4500H,B**, **EPA 120.1**, **SM2510B**, **SM2540C**, **SM2320B**, **SM4500CL-E**, **SM4500F-BC**, **SM4500NH3-BH**, **EPA 350.1**: Ammonia-N, LACHAT 10-107-06-1-B: Ammonia-N, **SM4500NO3-F**, **EPA 353.2**: Nitrate-N, **EPA 351.1**, **SM4500P-E**, **SM4500P-B**, **E**, **SM4500SO4-E**, **SM5220D**, **EPA 410.4**, **SM5210B**, **SM5310C**, **SM4500CL-D**, **EPA 1664**, **EPA 420.1**, **SM4500-CN-CE**, **SM2540D**.

EPA 624: Volatile Halocarbons & Aromatics,

EPA 608: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs

EPA 625: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045**: PCB-Oil.

Microbiology: **SM9223B-Colilert-QT**; **Enterolert-QT**, **SM9221E**.

**Mansfield Facility:**

**Drinking Water**

EPA 200.7: Ba, Be, Cd, Cr, Cu, Ni, Na, Ca. **EPA 200.8**: Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Ni, Se, TL. **EPA 245.1 Hg**.

**Non-Potable Water**

EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.

EPA 200.8: Al, Sb, As, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn.

EPA 245.1 Hg.

**SM2340B**

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For a complete listing of analytes and methods, please contact your Alpha Project Manager.

mg 2/17/17 updated COC

L1705305



# CHAIN OF CUSTODY

PAGE 1 OF 1

Date Rec'd In Lab: 2/15/17

ALPHA Job #:

#:117043-2-BB, 2/21/17

CHAIN OF CUSTODY						PAGE <u>1</u> OF <u>1</u>	Date Rec'd in Lab: <u>2/15/17</u>	ALPHA Job #: <u>4704833-BB</u>
Project Information			Report Information - Data Deliverables			Billing Information		
Project Name: <u>Cast Boston</u>			<input checked="" type="checkbox"/> ADEX <input checked="" type="checkbox"/> EMAIL			<input checked="" type="checkbox"/> Same as Client Info <input type="checkbox"/> PO #:		
Client Information			Regulatory Requirements & Project Information Requirements					
Client: VERTEX			<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No MA MCP Analytical Methods <input type="checkbox"/> Yes <input type="checkbox"/> No CT RCP Analytical Methods <input type="checkbox"/> Yes <input type="checkbox"/> No Matrix Spike Required on this SDG? (Required for MCP Inorganics) <input type="checkbox"/> Yes <input type="checkbox"/> No GW1 Standards (Info Required for Metals & EPH with Targets) <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No NPDES RGP <input type="checkbox"/> Other State / Fed Program					
Address: <u>One Congress St, 10th fl</u> <u>Boston MA 02114</u>			Criteria					
Phone: <u>781-917-5360</u>			Turn-Around Time					
Email: <u>b.gibbons@vertexeng.com</u> <u>ctrapp@vertexeng.com</u>			<input type="checkbox"/> Standard <input checked="" type="checkbox"/> RUSH (only confirmed if pre-approved) <u>72-hr</u> Date Due:					
Additional Project Information: *NPDES gw parameters: 1,4 Dioxane 8260C-SIM, PCB-608, SVOC 8270D-PAH&SIM, GDB-504.1, total metals 6000E-7000 Total cyanide 9010C, hexachrom 7196A, TPH 1664, total phenols 266 Total residual chlorine 4500, Total susp solids 2940D & chloride 9251								
ANALYSIS VOC: <input checked="" type="checkbox"/> 8260 <input type="checkbox"/> 624 <input type="checkbox"/> 5242 METALS: <input type="checkbox"/> MCP 13 <input type="checkbox"/> MCP 14 <input type="checkbox"/> RCP 15 EPH: <input type="checkbox"/> RCRA8 <input checked="" type="checkbox"/> Ranges & Targets <input type="checkbox"/> PP13 VPH: <input type="checkbox"/> Ranges & Targets <input type="checkbox"/> Ranges Only <input type="checkbox"/> Ranges Only PCB: <input type="checkbox"/> PEST <input type="checkbox"/> Quant Only <input type="checkbox"/> Fingerprint TPH: <input type="checkbox"/> Quant Only <input checked="" type="checkbox"/> NPDES Dissolved (GW)								
SAMPLE INFO Filtration <input checked="" type="checkbox"/> Field <input checked="" type="checkbox"/> lab to do <input type="checkbox"/>								
Dis-Fe-RI,MCP- XX-6020S (Cu, NI,SB,ZN, MCP- RCRA8-0620S No HG								
* Per Bill Gibbons- MCP Protocols required for 8260, Dissolved RCRA8 Metals, EPH and VPH NPDES parameters- do not require MCP they need RGP methods.								
Container Type P= Plastic A= Amber glass V= Vial G= Glass B= Bacteri cu C= Cube O= Other E= Encore D= BOD Bottle			Preservative A= None B= HCl C= HNO3 D= H2SO4 E= NaOH F= MeOH G= NaHSO4 H= Na2S2O3 I= Ascorbic Acid J= NH4Cl K= Zn Acetate O= Other			Container Type V P A U  Preservative B C B B		
Relinquished By: <u>Rob Mayo</u>			Date/Time <u>2/15/17 16:00</u>			Received By: <u>Rob Mayo AM</u>		
Relinquished By: <u>Rob Mayo</u>			Date/Time <u>2/15/17 18:40</u>			Received By: <u>User C</u>		
All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.								
FORM NO. 01-01 (rev. 12-Mar-2012)								