UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND REGION
FIVE POST OFFICE SQUARE, SUITE 100, BOSTON, MA 02109

DATE: January 29, 2018
FROM: Christopher Smith, EPA Remedial Project Manager
SUBJECT: November 2017 Sawyer Street Groundwater Monitoring

Introduction

This Technical Memorandum summarizes the groundwater monitoring activities conducted at the Sawyer Street Confined Disposal Facility (CDF) in New Bedford, Massachusetts during the Fall 2017 monitoring period. The 2017 survey is a continuation of a multi-year program to monitor six groundwater monitoring wells located around the perimeter of the CDF. The wells are monitored semi-annually; numerous past reports for this sampling are posted on the New Bedford Harbor Superfund webpage. Results from the monitoring survey are used to evaluate the integrity of the CDF and assess potential trends in concentrations of polychlorinated biphenyls (PCBs) as Aroclors, selected metals (cadmium, chromium, copper, and lead), and volatile organic compounds (VOCs). Total suspended solids (TSS) concentrations are also measured.

Field Activity Summary

Groundwater samples were collected from the following six wells located around the perimeter of the CDF in the Fall of 2017: MW-1, MW-3, MW-4A, MW-5, MW-6, and MW-7A (Figure 1). All field activities were conducted according to the sampling analysis plan (SAP) developed for this investigation (Appendix A). All field activities were performed by EPA staff.

While these wells have been developed prior to sample collection in past sampling events, well development did not occur during this round of sampling. Groundwater sampling was performed on November 14-15, 2017, according to the United States Environmental Protection Agency (EPA) Region 1 Low Stress (flow) Purging and Sampling Groundwater Procedure for the Collection of Groundwater Samples from Monitoring Wells, Rev. 3 (EPA, 2010). A peristaltic pump was used to sample the wells. Dedicated sample tubing and bladder pumps were used at each well to minimize the risk of cross contamination between wells. The well was purged and in situ water quality parameters (i.e., temperature, specific conductivity, dissolved oxygen, pH, oxidation reduction potential, and turbidity) were monitored until they achieved a steady state (where possible). All measurements were recorded on field log sheets (Appendix B). After purging, groundwater samples were collected for PCBs, metals, VOC, and TSS analysis.

Field-based quality assurance / quality control (QA/QC) samples included one field replicate sample (from MW-1) and one trip blank (analyzed for VOCs only). Table 1 shows the number of samples taken and the analytical method used for testing in the laboratory.

Figure 1: Sawyer Street CDF Monitoring Well Locations

Table 1: Field sample data and laboratory analytical methods.

Parameter	Number of Samples	Sample Matrix	Analytical Method Reference	Sample Container	Sample Preservation	Holding Time
PCB Aroclors	7 Total (6) samples (1) field duplicate	Groundwater	EIASOP-GCPESWALL7	2 x 1L amber glass, Teflon lined cap	4°C, $Na_2S_20_3$	7 days
VOCs	8 Total (6) samples (1) field duplicate (1) trip blank	Groundwater	EIASOP-VOAGCMS9	4 x 40mL amber glass, VOA teflon lined cap	$Na_2S_2O_3$, HCL, pH 2, 4°C	14 days
Metals	7 Total (6) samples (1) field duplicate	Groundwater	EIASOP-OPTIMAS0	1 x 250mL plastic container	HNO_3, pH<2, 4°C	180 days
TSS	7 Total (6) samples (1) field duplicate	Groundwater	INGTSS-TDS-VRES6	1 x 1L plastic container	4°C	7 days

Results

Table 2 shows the water quality analytical results. Full laboratory analytical results are shown in Appendix C.

Table 2: November 2017 Cell 1 Groundwater Sampling Analytical Results

Parameter	Units	RL	Well ID							Trip Blank
			MW-1	MW-1D	MW-3	MW-4A	MW-5	MW-6	MW-7A	
Total PCB (a)	µg/L	(b)	ND	ND	ND	ND	ND	ND	ND	NA
Cadmium	µg/L	10	ND	ND	ND	ND	ND	ND	ND	NA
Chromium	µg/L	20	ND	ND	ND	ND	ND	ND	ND	NA
Copper	µg/L	20	ND	ND	ND	ND	ND	ND	ND	NA
Lead	µg/L	20	ND	ND	ND	ND	ND	ND	ND	NA
TSS	mg/L	2.5	ND	ND	11	2.8	3.8	9.2	ND	NA
VOCs	µg/L	(c)	ND	ND	ND	ND	ND	ND	ND	ND

Notes:

(a) Total PCB calculated as sum of Aroclors 1016, 1221, 1232, 1242, 1248, 1254, 1260, 1262, and 1268.
(b) Individual PCB Aroclors were undetected in groundwater samples at concentrations above the laboratory reporting limit (see appendix C).
(c) RLs for VOCs are listed in Appendix C; no VOCs were detected in the groundwater samples.

Key:
RL: Reporting Limit; µg/L: micrograms per liter; mg/L: milligrams per liter; ND: Not Detected above Reporting Limit

Quality Control

Field based quality control included the collection of duplicate samples (one per parameter) and trip blanks for VOCs. Laboratory based QC followed the procedures outlined in the analytical method (see table 1). Neither the field or laboratory based QC results indicated any problems with the samples.

Discussion and Summary

Results from the November 2017 sampling event indicate that the integrity of the Sawyer Street CDF is maintained. With the exception of Total Suspended Solids, all parameters (PCBs, metals, VOCs) measured for in the monitoring wells were not detected. It should be noted that in past iterations of this sampling event, laboratories have achieved lower reporting limits for metals. Results from this sampling event should not be misinterpreted as showing that concentrations of metals have decreased to non-detect levels relative to lower reporting limits. Despite the higher reporting limits (for metals) in this round of analysis, the results show that contamination in the monitoring wells has not increased to a level which may raise concerns about the integrity of the Sawyer Street CDF. The Sawyer Street CDF monitoring wells will be sampled again in the Spring of 2018.

Appendix A
Sampling Analysis Plan

New Bedford Harbor Superfund Site
New Bedford, MA

Collection of Groundwater Samples
For the Analysis of PCB Aroclors, Volatile Organic Compounds, Metals, and Total Suspended Solids

Sampling and Analyses Plan (SAP)

November 2017

U.S. Environmental Protection Agency – Region 1
Office of Environmental Measurement & Evaluation
Environmental Investigations & Analysis Unit

SAP Acceptance:

Plan Prepared By: _____ Date:_____
Christopher Smith,
OSRR RPM

Plan Reviewed By: _____ Date:_____
Jerry Keefe,
EIA Team Leader

Plan Approved By: _____ Date: _____
Christopher Smith,
OSRR RPM

Laboratory Acceptance: _____ Date:_____
Dan Boudreau, EPA/OEME/EIA,
Chemistry Team Leader

This site specific Sample Analysis Plan (SAP) was written in conjunction with the EIA generic SAP dated 01/05/11. The general project goals, procedures, and quality control criteria in the generic SAP are included in the specific SAP by reference. This SAP includes any additional site specific information not included in the generic SAP along with a site map, sample locations, the number and type of samples to be collected, the project manager and sampling team members, and any other pertinent information related to this project.

1. Project Name: New Bedford Harbor Superfund Site – Collection of Low Flow Groundwater Samples for the Analysis of PCB Aroclors, Volatile Organic Compounds, Metals, and Total Suspended Solids

2. Site ID: 2017 T 01R 303DD2 0143RA01

3. Project Requested By: Christopher Smith

4. Date of Request: August 2017

5. Date of Project Initiation: September 2017

6. Project Manager: Christopher Smith

7. Field Quality Assurance:

8. Site Description:

New Bedford Harbor is an 18,000-acre urban estuary with sediment highly contaminated with polychlorinated biphenyls (PCBs) and heavy metals. From the 1940s until EPA banned the production of PCBs in the 1970s, two manufacturing facilities improperly disposed of industrial wastes containing PCBs, contaminating the harbor bottom for about six miles from the Acushnet River into Buzzards Bay. The harbor was placed on EPA's National Priorities List in 1982, and remediation is ongoing.

The portion of the site relevant to this sampling event is referred to as the "Pilot Confined Disposal Area" (CDF), a land based area used for the storage of remediation derived sediment and debris. This CDF is located along the shoreline immediately north of Sawyer Street (adjacent to the EPA field office) in New Bedford. The pilot CDF initially consisted of a 145,000ft^2 primary cell and a 32,500ft^2 secondary cell separated by a 400ft long sheetpile wall. Since this original construction, the CDF has been used to store a variety of contaminated sediment and debris, and has undergone multiple reconfigurations. Currently, the CDF consists of three "cells" which were constructed for sediment storage (Cell 1) and water treatment operations (Cells 2 and 3), as well as a "Debris Disposal Area" (DDA). Figure 1 (attached) shows this current configuration. The DDA contains approximately 19,000yd^3 of contaminated sediments (weighted PCB average between 200 and 260ppm) deposited from 1989-2014. Cell 1 contains PCB contaminated sediments as well as 6900yd^3 of sediment that is contaminated with both PCBs and trichcloroethylene (TCE). Sampling in 2008 showed TCE levels in the cell ranging from 0.130ppm to 43ppm.

The Pilot CDF area is underlain by a low permeability clay layer, minimizing the risk of contaminant migration. Additionally, cell 1 is underlain with a 60 mil high density polypropylene (HDPE) liner. To ensure this design is protective of human health and the environment, the 2001 Explanation of Significant Differences (ESD) documented that groundwater monitoring would be performed. Baseline groundwater monitoring begin in 2001. The monitoring program consists of six wells, which are located around the perimeter of the

CDF (see Figure 1). Low-flow samples collected from these wells are tested for PCB aroclors, metals, VOCs, and total suspended solids. Historically, contaminant levels observed in these wells have been very low or undetectable.

Cell 1 and the debris disposal area, both capped with clean sediment, are currently used for equipment storage and construction staging operations. The monitoring wells are relatively easily accessible and not in the direct path of any ongoing activities in the area. Parking is available at EPA's Sawyer Street office, which is located directly to the west of the Pilot CDF (see Figure 1).

A. Objective and Scope Statement:

The sampling objective is to collect representative groundwater samples from the existing monitoring wells at the New Bedford Harbor Superfund Site. The sampling will consist of a single event utilizing the US EPA's Office of Environmental Measurement and Evaluation's (OEME) Environmental Investigation and Analysis (EIA) personnel. The collected groundwater samples will be analyzed by the OEME laboratory for PCB aroclors, Volatile Organic Compounds (VOCs), metals (cadmium, chromium, copper, and lead), and total suspended solids (TSS). These samples will also be accompanied by Trip blanks and Field Duplicates for Quality Assurance (QA) and Quality Control (QC).

B. Data Usage:

Contaminant levels will be compared to those collected in historical sampling events to ensure no significant amount of contamination is migrating from the Pilot CDF area to surrounding groundwater.

C. Sampling Event Design:

<u>Sampling Design:</u>

EIA personnel will collect groundwater samples according to the United States Environmental Protection Agency (EPA) Region 1 Low Stress (flow) Purging and Sampling Groundwater Procedure for the Collection of Groundwater Samples from Monitoring Wells, Rev. 3 (EPA, 2010). Sample collection data will be logged in the field by EIA staff.

The monitoring wells selected by the Remedial Project Manager are shown on Figure 1. The table below contains relevant available well data:

Monitoring Well	Well Diameter (inches)	Well Depth (feet)[1]	Water Table Depth (feet)[1]	Length of Water Column (feet)[1]
MW-1	2	23.96	16.78	7.18
MW-6	2	18.9	12.87	6.03
MW-3	2	23.94	14.49	9.45
MW-5	2	18.6	10.38	8.22
MW-4A	2	23.5	11.33	12.17
MW-7A	2	14.25	11.45	2.8

[1]Data is from Batelle's September 2016 sampling event, which should be relatively representative of conditions encountered on the site in the November 2017 sampling event.

Information concerning the depth and length of the screened intervals in these wells is not available. The EIA field staff will use their best judgement in placing the pump in the well for groundwater extraction. EIA staff will attempt to use a peristaltic pump to collect groundwater samples.

Field quality control (QC) samples will include the following:

- PCB Aroclors:
  - One (1) field duplicate per 20 samples collected
- Volatile Organic Compounds (VOCs):
  - One (1) Trip Blank
  - One (1) field duplicate per 20 samples collected
- Metals (cadmium, copper, chromium, lead):
  - One (1) field duplicate per 20 samples collected
- Total Suspended Solids (TSS):
  - One (1) field duplicate per 20 samples collected

*Equipment blanks may be required if bladder pumps are employed. Peristaltic pumping methods will not require equipment blanks.

D. Monitoring Parameters:

Parameter	Number of Samples[1]	Sample Matrix	Analytical Method Reference[2]	Sample Container	Sample Preservation	Holding Time
PCB Aroclors	7 Total (6) samples (1) field duplicate	Groundwater	EIASOP-GCPESWALL7	2 x 1L amber glass, Teflon lined cap	4°C, $Na_2S_2O_3$	7 days
VOCs	8 Total (6) samples (1) field duplicate (1) trip blank	Groundwater	EIASOP-VOAGCMS9	4 x 40mL amber glass, VOA teflon lined cap	$Na_2S_2O_3$, HCL, pH 2, 4°C	14 days
Metals	7 Total (6) samples (1) field duplicate	Groundwater	EIASOP-OPTIMAS0	1 x 250mL plastic container	HNO_3, pH<2, 4°C	180 days
TSS	7 Total (6) samples (1) field duplicate	Groundwater	INGTSS-TDS-VRES6	1 x 1L plastic container	4°C	7 days

E. Data Quality Requirements:

The reporting/detection limits, accuracy, and precision required for the parameters listed above are discussed in the applicable laboratory SOPs.

7. EPA Project Organization and Responsibility:

The following is a list of key project personnel and their responsibilities:

Responsibility	Contact
Site RPM	Christopher Smith (OSRR)
Sampling Leader	
Sampling Personnel/QC	Jerry Keefe (EIA)
Laboratory Analyses	Dan Boudreau (EIA)
Data Evaluation/Lab QC	Dan Boudreau (EIA)
Overall Performance Coordination	
EIA Manager	Ernest Waterman (EIA)

8. Schedule of Tasks and Products:

Date	Activity
August 2017	Requests OEME field/lab support
November 13-14, 2017	Groundwater Sampling Event
November 2017	Laboratory Analysis
November/December 2017	Laboratory Data Review
December 2017	QA/QC'd Data to Project Manager

9. Special Training Requirements/Certification/Health & Safety

Sampling Personnel

All sampling personnel will have completed the 40-hour OSHA HAZWOPER training and maintained the annual 8-hour refresher training. The Sampling Leaders must have prior experience in the collection of field samples, proper preservation, shipping and chain of custody techniques.

Analytical Personnel

Analytical personnel will be determined by OEME.

Health and Safety

All EPA staff that performs sampling must be currently enrolled in EPA's medical monitoring program. All EPA field staff will wear the appropriate Personal Protective Equipment (PPE) during the sampling event. The contaminants of concern in the area present at very low or undetectable concentrations. Based several years of previous sampling efforts and existing information on levels of contamination, the respiratory protection will be OSHA "Level D" and may be adjusted based on site-specific field conditions and the professional judgment of sample leader. Below is a table showing results from the Fall 2016 sampling of these wells:

Parameter	Units	Well ID						MCP GW-3 Criteria(c)	Equipment Blank		Trip Blank
		MW-1	MW-3	MW - 4A	MW-5	MW-6	MW - 7A		Peri-staltic	Bladder Pump	
Total PCB (a)	µg/L	- U(b)	- UJ(b)	- UJ(b)	- U(b)	- U(b)	- U(b)	10	- U (b)	- U (b)	NA
Cadmium	µg/L	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	4	0.5 U	0.5 U	NA
Chromium	µg/L	1.34 U	2.23 J	1.11 J	5.59 J	2.27 J	1 U	300	1 U	2.87	NA
Copper	µg/L	1.68	19.5 J	15.1 J	7.01 J	1.79 J	2.33	NA	1 U	1 U	NA
Lead	µg/L	1 U	1 U	1 U	1 U	1 U	1 U	10	1 U	1 U	NA
TSS	mg/L	5.6	24.4	2.6	1 U	7.9	1 U	NA	NA	NA	NA
Cis-1,2-dichloroethene (d)	µg/L	0.5 U	0.31 J	0.5 U	0.5 U	0.5 U	0.5 U	50,000	0.5 U	0.5 U	0.5 U

Notes:

- Total PCB calculated as the sum of Aroclors 1016, 1221, 1232, 1242, 1248, 1254 and 1260; a value of zero (0) used in summation for non- detects.
- Individual PCB Aroclors were undetected in the groundwater samples at concentrations above the laboratory reporting limit (see Appendix B).
- MCP: Massachusetts Contingency Plan, Method 1 MCP GW-3 standard from 310 CMR 40.0974(2).
- VOCs undetected in the groundwater samples, except cis-1,2-Dichloroethene (MW-3) and Acetone (equipment blank)

Key:

- µg/L: micrograms per liter; mg/L: milligrams per liter; U: Chemical not detected at concentration above the laboratory reporting limit; J: Estimated value; NA: Not applicable

10. Data Representativeness/Comparability:

The contaminant levels in the collected samples will verify that the wastes in the Pilot CDF are not mobilizing into groundwater.

Data Comparability: The same field procedures and analytical methods will be used for each of the sample locations throughout the sampling event so that data can be compared. Field duplicates will be used to measure the precision of the method and heterogeneity of the sample matrix.

Data Completeness: The target requirement of valid data for completeness is 90%, however an evaluation of critical samples will determine if data are incomplete, and the Project Manager and EIA Field Team Leader will determine if additional sampling is needed.

11. Sampling Procedures:

EIA personnel will collect samples according to the US EPA OEME EIASOP-GWSAMPLE1 Groundwater Low-Flow Sampling Standard Operating Procedure. The standard operating procedure calls for the implementation of peristaltic and/or bladder pumps and HDPE sampling tubing. All wells will be purged until monitoring parameters are stable, then a sample will be drawn. The Site is known for having compact soils and slow recharge rates, therefore, modified procedures may be required to collect samples. If any procedure described in this SAP and/or SOPs are inappropriate, inadequate or impractical and another procedure must be used to obtain a sample, the procedure will be documented in the field log book for the Site with a description of the circumstances requiring its use. This will also be

documented in a summary field report to the site RPM.

12. Sample Custody Procedures:

Samples collected will be handled in accordance with the OEME SOP for Evidence and Sample Management (OEMESOP-EVIDENCEMANAGEMENT#). Each sample will be given a unique identification number which corresponds with the name of each well. Samples will be handled by EIA chemistry staff according to the SOP for Sample Login, Tracking, and Sample Disposition (EIASOP-ADMLOG#).

13. Calibration Procedures and Preventative Maintenance:

Equipment for field measurements (conductivity, pH, ORP, turbidity, temperature, and DO) will be calibrated on the day of sampling according to the manufacturer's recommendations and SOP ECASOP-YSISondes11. All calibrations will be documented in the field logbook and the equipment logbook. Sampling equipment will be checked for proper operations and cleanliness prior to use in the field. Decontamination will follow the EIASOP-General_Decon# SOP.

14. Documentation and Data Reporting:

Documentation

The Sampling Leader will be responsible for maintaining accurate Site-specific field logbooks that include the following information:

- Date, time, location, sample type, and name of sampler for each sample collected.
- Information on the Chain of Custody, sample container labels, sample tag numbers, etc.
- Other information which may be beneficial to the analyst such as matrix appearance, changes upon preservation, etc.
- Field equipment (field meters) utilized for this project will be documented by noting the EPA ID# and/or equipment serial # in a field logbook.
- Field observations and sampling data will be summarized in a report.

Data Reporting

The data will be tabulated and reported to the project manager in accordance to NERL procedures and the NERL QAP. EIA field reporting will be in accordance with EPA's SOP for Report Preparation, Review, and Distribution [EIASOP_Report Prep_Review_DistR#], available on the OEME Lab SOP database.

15. Data Review:

Data will be reviewed by routine laboratory procedures as specified in the NERL QAPP (peer review by EIA chemist or review by the Chemistry Laboratory Services Coordinator for completeness). Data will be validated against the criteria presented in sections 8D, 8E, and 10 of this SAP. Any limitations on the use of data will be documented and explained.

16. Corrective Action:

Any corrective action will be determined by the Field Sampling Leader and documented in the field logbook as necessary and discussed with the Project Manager and EIA Field Team Leader. Any significant issues with laboratory performance identified by the laboratory will require that the Project Manager be notified immediately and appropriate corrective action taken.

17. Analytical Reports:

Preparation and sign-off on analytical reports is the responsibility of the EIA Chemistry staff and the Laboratory Services Coordinator. Reports will be delivered to:

Christopher Smith
Remedial Project Manager (OSRR)
smith.christopher@epa.gov

FIGURES

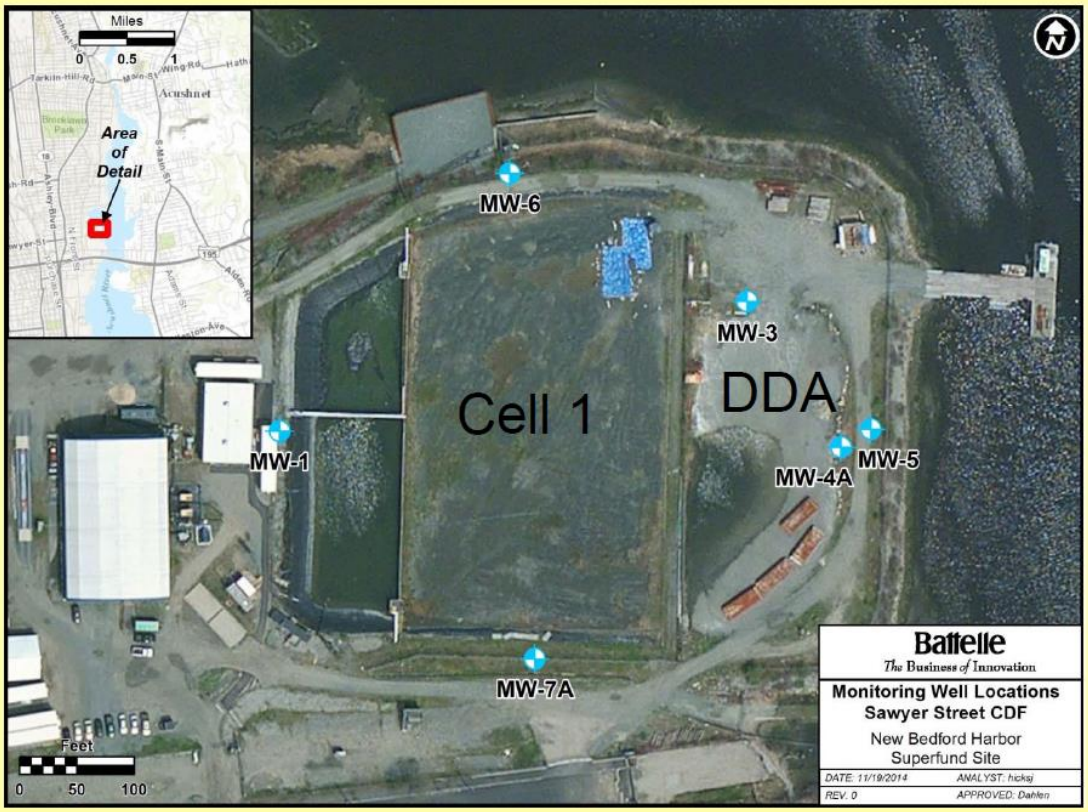

Figure 1. Sawyer Street CDF Monitoring Well Locations

Appendix B
Field Data Sheets

New Bedford Harbor

GW Sampling Sawyer Street location

11/14-15/2017

Samplers

11/14 - J. Keefe, W. Sommer, Chris Smith (RPM)

11/15 - J. Keefe, W. ~~Sommer~~ Sommer, Chris Smith (RPM), N. Bobbs

Well# 7A

Date 11/14/17 (From Top of PVC)

Static Water Level 10.60

Begin Time of Purge 12:10

Monitoring Well Purge and Sample Data Sheet

Site Name New Bedford Harbor

Total Depth 14.45 Well Diameter 2"

Screen Interval 12-17 Formation ? Sample Device PP

DF

DEPARTMENT OF ENVIRONMENTAL PROTECTION STATE OF MAINE

Time	Water Level	Flow	DO	Temp.	Cond.	pH	ORP	Turb.	
Min.	Feet below MP	mL/Min	mg/L	Celcius		-log[H+]	mV	NTU	
Write Meter Number of Instrument Used									Comments
1215	10.7	205	0.98	15.6	732	6.47	213.1	1.0	W. Sumner, C. Smith (RPM) J. Keal
1225	10.8	115	0.72	15.2	716	6.57	191.2	1.0	start Purge 11:55
1235	10.9	150.0	0.59	15.3	702	6.56	182.2	1.2	changed pump speed
1245	10.85	150.0	0.2	15.3	659	6.57	172.0	0.24	
1255	10.88	150.0	0.23	15.4	691	6.58	166.2	0.32	
1305	10.87	150.0	0.21	15.3	691	6.58	156.3	0.40	
1315	10.87	150.0	0.19	15.3	692	6.59	151.5	0.44	
1325	10.87	150.0	0.18	15.3	690	6.59	144.5	0.35	
1335	10.87	150.0	0.18	15.3	690	6.59	137.2	0.46	
~~1345~~ ~~1355~~	11/14/17								~12 bbls purged
1340	10.87	150.0	0.16	15.4	687	6.59	131.8	0.32	
1345	10.87	150.0	0.17	15.3	690	6.59	127.5	0.409	
1350	10.87	150.0	0.16	15.3	686	6.59	128.0	0.409	
									Sample collection @ 1355
									Col. Volume = 15.0 L

Equilibrium Goals
3 consecutive readings 3-5 min. apart

Flow 1-2 mL/Min	Cond. +- 3%
Water Level +- 0.01	pH +- 0.1
DO +- 10%	eH +- 10 mV
Turb +- 10%	Temp. +- 0.1

Eh Correction for Ag/AgCl probe:
Add 199 mV to ORP value

mL/Ft Information
3/4 in well = 87 mL/Ft
2 in well = 617mL/Ft
4 in well = 2470 mL/Ft

Record all instrument calibrations in Instrument Calibration Log Book or Field Book

Date Revised 1/28/2002

Samplers:
William Sumner EIA
Chris Smith OSRR
Sara Keefe EIA

Laboratory Sample Numbers

Analysis / Depth	Number

EIA Pump #1 (Switched pump to #2

Monitoring Well Purge and Sample Data Sheet

Well# MW-1
Date 11/14/17
Static Water Level 15.15 TOP of PVC
Begin Time of Purge 1510

Site Name New Bedford Harbor — Tubing @ 20'
Total Depth
Well Diameter 2"
Screen Interval
Formation
Sample Device P.P.

DEPARTMENT OF ENVIRONMENTAL PROTECTION — STATE OF MAINE

Time	Water Level	Flow	DO	Temp.	Cond.	pH	ORP	Turb.	Comments
Min.	Feet below MP	mL/Min	mg/L	Celcius		-log[H+]	mV	NTU	
Write Meter Number of Instrument Used									
1520	16.92	160	0.48	14.8	810	6.94	163.9	7.94	Start pump not thru Cell
1525	17.70	140	0.35	15.1	770	6.87	163.2	4.55	Turbidity & 5 gal hook-up Flow
1530	18.23	35	0.36	14.7	749	6.94	160.0	8.25	Thru Pump Cell Pump slowed d
1535	18.31	30	1.23	14.5	757	~~14.5~~ 6.94	159.0	9.93	Pump slowed
1540	18.209	35	1.66	14.4	771	6.96	158.2	7.71	
1545	18.22	90	1.72	1.72	778	6.97	157.5	6.44	
1555	18.16	85	3.08	14.0	778	6.98	156.1	7.03	
1605	18.16	85	2.66	14.3	776	7.02	150.6	3.79	
1615	18.23	90	2.74	14.5	768	7.03	137.5	2.25	
1620	18.32	90	2.57	14.5	759	7.02	119.1	1.09	
1625	18.35	90	2.59	14.6	752	7.01	111.5	0.85	
1630	18.35	90	2.63	14.5	749	7.02	94.3	0.69	
1635	18.37	90	2.72	14.4	741	7.01	91.3	0.73	
1640	18.38	90	2.71	14.0	739	7.02	90.1	0.67	SL cul Purge
1641	Sample collected								

Equilibrium Goals
3 consecutive readings 3-5 min. apart

Flow 1-2 mL/Min	Cond. +- 3%
Water Level +- 0.01	pH +- 0.1
DO +- 10%	eH +- 10 mV
Turb +- 10%	Temp. +- 0.1

mL/Ft Information
3/4 in well = 87 mL/Ft
2 In well = 617mL/Ft
4 In well = 2470 mL/Ft

Record all instrument calibrations in Instrument Calibration Log Book or Field Book

Samplers:
William Sommer EIA
Jerry Feole EIA
Chris Smith OSRA

Laboratory Sample Numbers

Analysis / Depth	Number

Eh Correction for Ag/AgCl probe:
Add 199 mV to ORP value

Date Revised 1/28/2002

EXAMPLE (Minimum Requirements) Page ___ of ___

Well PURGING-FIELD WATER QUALITY MEASUREMENTS FORM

Location (Site/Facility Name) NBH / Sawyer St GW well
Well Number MW-5 Date 11/15/17
Field Personnel J. Keefe, W. Sommer, C. Smith (ERM)
Sampling Organization USEPA
Identify MP Black mark on inside PVC

Depth to ___ / ___ of screen (below MP) top bottom
Pump Intake at (ft. below MP) 16'
Purging Device; (pump type) PP
DTW = 8.5 TOP of PVC Depth of well [illegible]

Clock Time 24 HR	Water Depth below MP ft	Pump Dial[1]	Purge Rate ml/min	Cum. Volume Purged liters	Temp. °C	Spec. Cond.[2] µS/cm	pH	ORP/ Eh[3] mv	DO mg/L	Turb-idity NTU	Comments
1012	9.45	1.75									Initial purge to clear turbidity
1020 (~~10:15~~)	9.64	2.0	115		14.9	4654	7.62	-213.6	0.99	0.65	clear
1030	10.19	2.0	120		15.1	4600	7.61	-255.9	0.70	0.62	Sulfur odor
1040	10.55	2.0	110		15.0	4623	7.60	-274.1	0.52	0.83	
1050	10.85	2.0	110		15.1	4634	7.60	-301.9	0.31	0.74	[illegible] pump stop [illegible]
1100	10.95	1.75	100		15.2	4639	7.59	-312.2	0.25		≈6 L purged
1110	11.20	1.75	124		15.0	4646	7.58	-317.0	0.20		
1120	11.45	1.75	134		15.0	4650	7.57	-317.7	0.19		slowed pump rate ≈8L
1130	11.45	1.75	104		14.9	4940	7.52	-333.1	0.17		had to restart pump
1135	11.55	1.75	108		15.1	4735	7.55	-323.7	0.15		
1140	11.60	1.75	106		15.1	4712	7.56	-318.3	0.16		≈9L purged VOC Reading = ND
1145	11.60	1.75	108		15.3	4813	7.54	-326	0.16		≈9.5L purged
1150											Sample taken

1. Pump dial setting (for example: hertz, cycles/min, etc).
2. µSiemens per cm(same as µmhos/cm)at 25°C.
3. Oxidation reduction potential (stand in for Eh).

Monitoring Well Purge and Sample Data Sheet

Well# MW-4A
Date 15 NOV 2017
Static Water Level 9.55 ft
Begin Time of Purge 0920

Site Name New Bedford Harbor - Sawyer St
Total Depth 23.5 Well Diameter 2"
Screen Interval 7 Formation
Sample Device Peri.

Time	Water Level	Flow	DO	Temp.	Cond.	pH	ORP	Turb.	
Min.	Feet below MP	mL/Min	mg/L	Celcius		-log[H+]	mV	NTU	
Write Meter Number of Instrument Used									Comments
0935	10.3	175	0.31	14.9	6275	7.39	-238.4	1.97	odor observed
0945	11.85	150	0.14	14.8	6168	7.39	-282.7	2.01	slowed Pump rate
0955	12.42	155	0.10	14.8	6104	7.40	-295.0	2.06	slowed Pump
1005	12.90	170	0.08	14.6	6023	7.39	-305.7	1.66	
1015	13.10	120	0.07	14.6	5946	7.39	-312.4	1.51	
1020	13.20	125	0.07	14.6	5928	7.38	-313.7	1.38	
1025	13.25	125	0.06	14.7	5913	7.36	-316.1	1.06	
1030	13.30	150	0.07	14.6	5914	7.33	-318.6	1.18	Pump Faster
1035	13.50	150	0.06	14.6	5909	7.32	-323.3	1.25	
1040	13.70	150	0.06	14.6	5884	7.31	-326.7	1.20	
1045	14.00	160	0.06	14.5	5888	7.29	-328.3	0.90	Bucket at 10 Liters
1050	sample taken								VOC ND at well head

Equilibrium Goals	
3 consecutive readings 3-5 min. apart	
Flow 1-2 mL/Min	Cond. +- 3%
Water Level +- 0.01	pH +- 0.1
DO +- 10%	eH +- 10 mV
Turb +- 10%	Temp. +- 0.1

Eh Correction for Ag/AgCl probe:
Add 199 mV to ORP value

mL/Ft Information
3/4 in well = 87 mL/Ft
2 in well = 617mL/Ft
4 in well = 2470 mL/Ft

Record all instrument calibrations in Instrument Calibration Log Book or Field Book

Date Revised 1/28/2002

Samplers:
William Sumner EIA
Nicolas Bowes EIA
Chris Emlin OSRR

Laboratory Sample Numbers
Analysis / Depth | Number

Monitoring Well Purge and Sample Data Sheet

Well# MWC3
Date 15 Nov 17
Static Water Level 13.4
Begin Time of Purge 1345

Site Name New Bedford Harbor - Sawyer St
Total Depth 24 ft Well Diameter 2" PVC
Screen Interval ? Formation ? Sample Device Peristaltic

DEPARTMENT OF ENVIRONMENTAL PROTECTION — STATE OF MAINE

Time	Water Level	Flow	DO	Temp.	Cond.	pH	ORP	Turb.	
Min.	Feet below MP	mL/Min	mg/L	Celcius		-log[H+]	mV	NTU	
Write Meter Number of Instrument Used									Comments
1345	13.41	Begin							
1350	14.2	110	1.33	14.5	9216	7.43	-32.8	1.09	Pump Slowed
1400	15.7	100	0.45	14.5	9186	6.61	1.0	1.19	
1410	17.15	95	0.36	14.3	9152	6.48	18.5	1.21	Pump slowed
1420	18.34	65	0.34	13.9	9139	6.44	28.1	1.42	
1425	18.90	65	.33	13.7	9132	6.43	29.8	1.22	
1430	19.26	65	.34	13.9	9124	6.43	28.1	1.51	
1435	19.49	65	.36	14.0	9013	6.45	10.1	1.44	
1445	19.3	65	0.37	14.0	8714	6.56	-31.3	1.31	
1455	19.9	70	0.62	13.9	8377	6.64	-53.7	1.09	
1500	19.9	65	0.84	14.1	8139	6.75	-87.2	0.94	
1505	19.9	65	1.94	13.7	8042	6.97	-122.0	1.57	
1510	19.9	65	2.78	13.5	8037	7.03	-120.7	2.48	
1515	20.0	65	3.20	13.3	8039	7.08	-115.0	3.06	
1520	20.00	65	3.16	13.2	8034	7.09	-111.7	3.46	
1525	Sample taken								Cul. Volume 7L

Equilibrium Goals	
3 consecutive readings 3-5 min. apart	
Flow 1-2 mL/Min	Cond. +- 3%
Water Level +- 0.01	pH +- 0.1
DO +- 10%	eH +- 10 mV
Turb +- 10%	Temp. +- 0.1

mL/Ft Information
3/4 in well = 87 mL/Ft
2 in well = 617mL/Ft
4 in well = 2470 mL/Ft

Record all instrument calibrations in Instrument Calibration Log Book or Field Book

Samplers: William Sommer EIA
Chris Smith OSRR

Laboratory Sample Numbers

Analysis / Depth	Number

Eh Correction for Ag/AgCl probe:
Add 199 mV to ORP value

Date Revised 1/28/2002

EIA Pump #2

Well PURGING-FIELD WATER QUALITY MEASUREMENTS FORM

Location (Site/Facility Name) NBH/Sawyer St GW Wells
Well Number MW-6 Date 11/15/17
Field Personnel Jarret Keefe, Nicholas Bobbs
Sampling Organization US EPA
Identify MP Black Mark on Inside PVC

Depth to ___/___ of screen (below MP) top bottom
Pump Intake at (ft. below MP) 16'
Purging Device; (pump type) PP
DTW = 12.8 Top of PVC Depth of Well 18.9'

Clock Time 24 HR	Water Depth below MP ft	Pump Dial[1]	Purge Rate ml/min	Cum. Volume Purged liters	Temp. °C	Spec. Cond.[2] µS/cm	pH	ORP/ Eh[3] mv	DO mg/L	Turb-idity NTU	Comments
											Started purging at 14:35 Hooked up to cell at 14:38
1445	13.2'	2.25	102		13.8	1407	7.2	-171.6	0.60	45.1	
1455	13.2'	2.25	99	≈2	13.8	1624	7.19	-172.9	0.43	39.4	increased pump speed
1505	13.2'	2.5	128		13.9	1780	7.20	-170.2	0.31	9.42	decreased pump speed
1510	13.2	2.25	130		13.8	1818	7.20	-169.6	0.36	5.27	
1520	13.2'	2.25	120	≈4	13.9	1888	7.20	-163.7	0.29	4.51	
1525	13.25'	2.25	120		14.2	1850	7.21	-165.4	0.25	3.38	slowed pump
1530	13.25'	2.00	108	≈6	14.0	1880	7.20	-162.6	0.25	2.35	
											PID = 0 for VOC
				Sample Collection @ 1535 for VOC, TSS, PCB, Metals (total + Dissolved)							

1. Pump dial setting (for example: hertz, cycles/min, etc).
2. µSiemens per cm (same as µmhos/cm) at 25°C.
3. Oxidation reduction potential (stand in for Eh).

Turbidity meter #1
YSI pro #2

Appendix C
Laboratory Results

United States Environmental Protection Agency
Office of Environmental Measurement & Evaluation
11 Technology Drive
North Chelmsford, MA 01863-2431

Laboratory Report

November 22, 2017

Chris Smith - Mail Code OSRR07-1
Jerry Keefe - EIA / OEME
US EPA New England Region 1

Project Number: 17110029
Project: New Bedford Harbor- New Bedford, MA
Analysis:PCBs in Water Low Level
EPA Chemist: Aaron Zimmer

Date Samples Received by the Laboratory: 11/16/2017

Analytical Procedure:

All samples were received and logged in by the laboratory according to the USEPA New England Laboratory SOP for Sample Log-in.

Sample preparation and analysis was done following the EPA Region I SOP, EIASOP-PESWALL7.

The SOP is based on "Methods for Organic Chemical Analysis of Municipal and Industrial Wastewater, Method 608 - Organochlorine Pesticides and PCBS".

The analysis was carried out using high resolution capillary column chromatography. The 30 meter dual capillary system consists of J&W DB-5 and J&W DB-1701 columns both with a 0.25 mm ID.

Data were reviewed in accordance with the internal verification procedures described in the EPA New England Quality Manual for NERL.

Results relate only to the items tested or to the samples as received by the Laboratory. This analytical report shall not be reproduced except in full, without written approval of the laboratory.

If you have any questions please call me at 617-918-8340 .

Sincerely,

Digitally signed by DANIEL BOUDREAU
DN: c=US, o=U.S. Government, ou=USEPA, ou=Staff, cn=DANIEL BOUDREAU, dnQualifier=0000001239
Date: 2017.11.22 14:52:27 -05'00'

17110029$PCBW

Qualifiers:

RL = Reporting limit
ND = Not Detected above Reporting limit
NA = Not Applicable due to high sample dilutions or sample interferences
NC = Not calculated since analyte concentration is ND.
J = Estimated value
J1 = Estimated value due to MS recovery outside accceptance criteria
J2 = Estimated value due to LFB result outside acceptance criteria
J3 = Estimated value due to RPD result outside acceptance criteria
J4 = Estimated value due to LCS result outside acceptance criteria
E = Estimated value exceeds the calibration range
L = Estimated value is below the calibration range
B = Analyte is associated with the lab blank or trip blank contamination. Values are qualified when the observed concentration of the contamination in the sample extract is less than 10 times the concentration in the blank.
R = No recovery was calculated since the analyte concentration is greater than four times the spike level.
P = The confirmation value exceeded 35% difference and is less than 100%. The lower value is reported.
C = The identification has been confirmed by GC/MS.
A = Suspected Aldol condensation product.
N = Tentatively identified compound.

New Bedford Harbor- New Bedford, MA

PCBs in Water Low Level

Client Sample ID:	MW-7A	Matrix:	GW
Lab Sample ID:	AB71235	pH:	6
Date of Collection:	11/14/2017	Volume Extracted:	962 mL
Date of Preparation:	11/20/2017	Final Volume:	5 mL
Date of Analysis:	11/21/2017	Extract Dilution:	1

CAS Number	Compound	Concentration ug/L	RL ug/L	Qualifier
12674-11-2	Aroclor-1016	ND	0.52	
11104-28-2	Aroclor-1221	ND	0.52	
11141-16-5	Aroclor-1232	ND	0.52	
53469-21-9	Aroclor-1242	ND	0.52	
12672-29-6	Aroclor-1248	ND	0.52	
11097-69-1	Aroclor-1254	ND	0.52	
11096-82-5	Aroclor-1260	ND	0.52	
37324-23-5	Aroclor-1262	ND	0.52	
11100-14-4	Aroclor-1268	ND	0.52	

Surrogate Compounds	Recoveries (%)	QC Ranges
2,4,5,6-Tetrachloro-m-xylene	57	40 - 106
Decachlorobiphenyl	97	27 - 128

New Bedford Harbor- New Bedford, MA

PCBs in Water Low Level

Client Sample ID:	MW-01	Matrix:	GW
Lab Sample ID:	AB71236	pH:	6
Date of Collection:	11/14/2017	Volume Extracted:	985 mL
Date of Preparation:	11/20/2017	Final Volume:	5 mL
Date of Analysis:	11/21/2017	Extract Dilution:	1

CAS Number	Compound	Concentration ug/L	RL ug/L	Qualifier
12674-11-2	Aroclor-1016	ND	0.51	
11104-28-2	Aroclor-1221	ND	0.51	
11141-16-5	Aroclor-1232	ND	0.51	
53469-21-9	Aroclor-1242	ND	0.51	
12672-29-6	Aroclor-1248	ND	0.51	
11097-69-1	Aroclor-1254	ND	0.51	
11096-82-5	Aroclor-1260	ND	0.51	
37324-23-5	Aroclor-1262	ND	0.51	
11100-14-4	Aroclor-1268	ND	0.51	

Surrogate Compounds	Recoveries (%)	QC Ranges
2,4,5,6-Tetrachloro-m-xylene	56	40 - 106
Decachlorobiphenyl	57	27 - 128

New Bedford Harbor- New Bedford, MA

PCBs in Water Low Level

Client Sample ID:	MW-01D	Matrix:	GW
Lab Sample ID:	AB71237	pH:	6
Date of Collection:	11/14/2017	Volume Extracted:	949 mL
Date of Preparation:	11/20/2017	Final Volume:	5 mL
Date of Analysis:	11/21/2017	Extract Dilution:	1

CAS Number	Compound	Concentration ug/L	RL ug/L	Qualifier
12674-11-2	Aroclor-1016	ND	0.52	
11104-28-2	Aroclor-1221	ND	0.52	
11141-16-5	Aroclor-1232	ND	0.52	
53469-21-9	Aroclor-1242	ND	0.52	
12672-29-6	Aroclor-1248	ND	0.52	
11097-69-1	Aroclor-1254	ND	0.52	
11096-82-5	Aroclor-1260	ND	0.52	
37324-23-5	Aroclor-1262	ND	0.52	
11100-14-4	Aroclor-1268	ND	0.52	

Surrogate Compounds	Recoveries (%)	QC Ranges
2,4,5,6-Tetrachloro-m-xylene	71	40 - 106
Decachlorobiphenyl	67	27 - 128

New Bedford Harbor- New Bedford, MA

PCBs in Water Low Level

Client Sample ID:	MW-4A	Matrix:	GW
Lab Sample ID:	AB71238	pH:	6
Date of Collection:	11/15/2017	Volume Extracted:	956 mL
Date of Preparation:	11/20/2017	Final Volume:	5 mL
Date of Analysis:	11/21/2017	Extract Dilution:	1

CAS Number	Compound	Concentration ug/L	RL ug/L	Qualifier
12674-11-2	Aroclor-1016	ND	0.52	
11104-28-2	Aroclor-1221	ND	0.52	
11141-16-5	Aroclor-1232	ND	0.52	
53469-21-9	Aroclor-1242	ND	0.52	
12672-29-6	Aroclor-1248	ND	0.52	
11097-69-1	Aroclor-1254	ND	0.52	
11096-82-5	Aroclor-1260	ND	0.52	
37324-23-5	Aroclor-1262	ND	0.52	
11100-14-4	Aroclor-1268	ND	0.52	

Surrogate Compounds	Recoveries (%)	QC Ranges
2,4,5,6-Tetrachloro-m-xylene	65	40 - 106
Decachlorobiphenyl	100	27 - 128

New Bedford Harbor- New Bedford, MA

PCBs in Water Low Level

Client Sample ID:	MW-05	Matrix:	GW
Lab Sample ID:	AB71239	pH:	6
Date of Collection:	11/15/2017	Volume Extracted:	948 mL
Date of Preparation:	11/20/2017	Final Volume:	5 mL
Date of Analysis:	11/22/2017	Extract Dilution:	1

CAS Number	Compound	Concentration ug/L	RL ug/L	Qualifier
12674-11-2	Aroclor-1016	ND	0.52	
11104-28-2	Aroclor-1221	ND	0.52	
11141-16-5	Aroclor-1232	ND	0.52	
53469-21-9	Aroclor-1242	ND	0.52	
12672-29-6	Aroclor-1248	ND	0.52	
11097-69-1	Aroclor-1254	ND	0.52	
11096-82-5	Aroclor-1260	ND	0.52	
37324-23-5	Aroclor-1262	ND	0.52	
11100-14-4	Aroclor-1268	ND	0.52	

Surrogate Compounds	Recoveries (%)	QC Ranges
2,4,5,6-Tetrachloro-m-xylene	66	40 - 106
Decachlorobiphenyl	86	27 - 128

New Bedford Harbor- New Bedford, MA

PCBs in Water Low Level

Client Sample ID:	MW-03	Matrix:	GW
Lab Sample ID:	AB71240	pH:	7
Date of Collection:	11/15/2017	Volume Extracted:	964 mL
Date of Preparation:	11/20/2017	Final Volume:	5 mL
Date of Analysis:	11/22/2017	Extract Dilution:	1

CAS Number	Compound	Concentration ug/L	RL ug/L	Qualifier
12674-11-2	Aroclor-1016	ND	0.52	
11104-28-2	Aroclor-1221	ND	0.52	
11141-16-5	Aroclor-1232	ND	0.52	
53469-21-9	Aroclor-1242	ND	0.52	
12672-29-6	Aroclor-1248	ND	0.52	
11097-69-1	Aroclor-1254	ND	0.52	
11096-82-5	Aroclor-1260	ND	0.52	
37324-23-5	Aroclor-1262	ND	0.52	
11100-14-4	Aroclor-1268	ND	0.52	

Surrogate Compounds	Recoveries (%)	QC Ranges
2,4,5,6-Tetrachloro-m-xylene	78	40 - 106
Decachlorobiphenyl	46	27 - 128

New Bedford Harbor- New Bedford, MA

PCBs in Water Low Level

Client Sample ID:	MW-06	Matrix:	GW
Lab Sample ID:	AB71241	pH:	6
Date of Collection:	11/15/2017	Volume Extracted:	966 mL
Date of Preparation:	11/20/2017	Final Volume:	5 mL
Date of Analysis:	11/22/2017	Extract Dilution:	1

CAS Number	Compound	Concentration ug/L	RL ug/L	Qualifier
12674-11-2	Aroclor-1016	ND	0.50	
11104-28-2	Aroclor-1221	ND	0.50	
11141-16-5	Aroclor-1232	ND	0.50	
53469-21-9	Aroclor-1242	ND	0.50	
12672-29-6	Aroclor-1248	ND	0.50	
11097-69-1	Aroclor-1254	ND	0.50	
11096-82-5	Aroclor-1260	ND	0.50	
37324-23-5	Aroclor-1262	ND	0.50	
11100-14-4	Aroclor-1268	ND	0.50	

Surrogate Compounds	Recoveries (%)	QC Ranges
2,4,5,6-Tetrachloro-m-xylene	83	40 - 106
Decachlorobiphenyl	49	27 - 128

New Bedford Harbor- New Bedford, MA

Blank for PCBs Water

Client Sample ID:	N/A	Matrix:	GW
Lab Sample ID:	N/A	pH:	DI
Date of Collection:	N/A	Volume Extracted:	1000 mL
Date of Preparation:	11/20/2017	Final Volume:	5 mL
Date of Analysis:	11/21/2017	Extract Dilution:	1

CAS Number	Compound	Concentration ug/L	RL ug/L	Qualifier
12674-11-2	Aroclor-1016	ND	0.50	
11104-28-2	Aroclor-1221	ND	0.50	
11141-16-5	Aroclor-1232	ND	0.50	
53469-21-9	Aroclor-1242	ND	0.50	
12672-29-6	Aroclor-1248	ND	0.50	
11097-69-1	Aroclor-1254	ND	0.50	
11096-82-5	Aroclor-1260	ND	0.50	
37324-23-5	Aroclor-1262	ND	0.50	
11100-14-4	Aroclor-1268	ND	0.50	

Surrogate Compounds	Recoveries (%)	QC Ranges
2,4,5,6-Tetrachloro-m-xylene	52	40 - 106
Decachlorobiphenyl	75	27 - 128

New Bedford Harbor- New Bedford, MA

MATRIX SPIKE (MS) RECOVERY

Sample ID: AB71236

PARAMETER	SPIKE ADDED ug/L	SAMPLE CONCENTRATION ug/L	MS CONCENTRATION ug/L	MS % REC	QC LIMITS (% REC)
Aroclor-1016	3.0	ND	3.0	100	70 - 130
Aroclor-1260	3.0	ND	3.3	110	70 - 130

New Bedford Harbor- New Bedford, MA

Laboratory Duplicate Results

Sample ID: AB71235

PARAMETER	SAMPLE RESULT ug/L	SAMPLE DUPLICATE RESULT ug/L	PRECISION RPD %	QC LIMITS
Aroclor-1016	ND	ND	NC	50
Aroclor-1221	ND	ND	NC	50
Aroclor-1232	ND	ND	NC	50
Aroclor-1242	ND	ND	NC	50
Aroclor-1248	ND	ND	NC	50
Aroclor-1254	ND	ND	NC	50
Aroclor-1260	ND	ND	NC	50
Aroclor-1262	ND	ND	NC	50
Aroclor-1268	ND	ND	NC	50

New Bedford Harbor- New Bedford, MA

Laboratory Fortified Blank (LFB) Results

PARAMETER	LFB AMOUNT SPIKED ug/L	LFB RESULT ug/L	LFB RECOVERY %	QC LIMITS %
Aroclor-1016	3.0	2.2	73	46 - 113
Aroclor-1260	3.0	3.2	107	66 - 118

Comments:

New Bedford Harbor- New Bedford, MA

LABORATORY FORTIFIED DUPLICATE (LFB Dup) RECOVERY

COMPOUND	LFB Dup CONCENTRATION ug/L	LFB Dup RECOVERY %	RPD %	QC LIMITS RPD
Aroclor-1016	3.1	103	34	50
Aroclor-1260	3.3	110	3	50

Samples in Batch: AB71235, AB71236, AB71237, AB71238, AB71239, AB71240, AB71241

ENVIRONMENTAL PROTECTION AGENCY

REGION 1

CHAIN OF CUSTODY RECORD

PROJ. NO.	PROJECT NAME
17110029	New Bedford Harbor - Groundwater

SAMPLERS: (Signature) W. Semmes

STA. NO.	DATE	TIME	COMP.	GRAB	STATION LOCATION	NO. OF CONTAINERS	PCB's ($PCBW) 2-1L	Metals (Total) 1-250mL	Metals (Dissolved) 1-250mL	TSS (1L)	VOA (4 VOA vial) 40mL		REMARKS
	11/14/17	1355		X	MW-7A	9	2	1	1	1	4		VOA (HCl pres pH<2), Metals (HNO3, pH<2)
	11/14/17	1640		X	MW-01	9	2	1	1	1	4		
	11/14/17	1640		X	MW-01D	9	2	1	1	1	4		
	11/15/17	1050		X	MW-4A	9	2	1	1	1	4		
	11/15/17	1150		X	MW-05	9	2	1	1	1	4		
	11/15/17	1525		X	MW-03	9	2	1	1	1	4		
	11/15/17	1535		X	MW-06	10	2	1	1	1	5		extra 40 ml VOA vial for VOC
	11/14/17			X	Trips VOA's	4					4		Trip Blanks

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
	11/16/17 1028				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature) ESAT	Date / Time	Remarks	
			11/16/17 10:28		

Remarks:
17110029 $PCBW
17110029 $METW_PE
17110029 $DMETW_PE
17110029 VOAMW
17110029 TSS

Distribution: Original Accompanies Shipment; Copy to Coordinator Field Files

United States Environmental Protection Agency
Office of Environmental Measurement & Evaluation
11 Technology Drive
North Chelmsford, MA 01863-2431

Laboratory Report

January 09, 2018

Chris Smith - Mail Code OSRR07-1
Jerry Keefe - EIA / OEME
US EPA New England Region 1

Project Number: 17110029
Project: New Bedford Harbor- New Bedford, MA
Analysis:Total Recoverable Metals in Water by ICP
EPA Chemist: Allison Connors

Date Samples Received by the Laboratory: 11/16/2017

Analytical Procedure:

All samples were received and logged in by the laboratory according to the USEPA New England Laboratory SOP for Sample Log-in.

Sample preparation and analysis was done following the EPA Region I SOP, EIASOP-OPTIMAS0.

Samples were prepared following the EPA Region I SOP, EIASOP-INGMETALSPREP8

The sample preparation and analysis SOP's are based on Methods 3010A or 3005A and 6010B as stated in "Test Methods for Evaluating Solid Waste, 3rd ed., Final Update III, 7/92 and 12/96."

The samples were analyzed using a Perkin Elmer Dual View Inductively Coupled Plasma - Optical Emission Spectrometer.

Data were reviewed in accordance with the internal verification procedures described in the EPA New England Quality Manual for NERL.

If you have any questions please call me at 617-918-8340 .

Sincerely,

Digitally signed by DANIEL BOUDREAU
DN: c=US, o=U.S. Government, ou=USEPA, ou=Staff, cn=DANIEL BOUDREAU, dnQualifier=0000001239
Date: 2018.01.09 09:23:03 -05'00'

17110029$METW_PE

Qualifiers:

RL = Reporting limit
ND = Not Detected above Reporting limit
NA = Not Applicable due to high sample dilutions or sample interferences
NC = Not calculated since analyte concentration is ND.
J = Estimated value
J1 = Estimated value due to MS recovery outside accceptance criteria
J2 = Estimated value due to LFB result outside acceptance criteria
J3 = Estimated value due to RPD result outside acceptance criteria
J4 = Estimated value due to LCS result outside acceptance criteria
E = Estimated value exceeds the calibration range
L = Estimated value is below the calibration range
B = Analyte is associated with the lab blank or trip blank contamination. Values are qualified when the observed concentration of the contamination in the sample extract is less than 10 times the concentration in the blank.
R = No recovery was calculated since the analyte concentration is greater than four times the spike level.
P = The confirmation value exceeded 35% difference and is less than 100%. The lower value is reported.
C = The identification has been confirmed by GC/MS.
A = Suspected Aldol condensation product.
N = Tentatively identified compound.

New Bedford Harbor- New Bedford, MA

Total Recoverable Metals in Water by ICP

Client Sample ID:	MW-7A	Lab Sample ID:	AB71235
Date of Collection:	11/14/2017	Matrix:	GW
Date of Preparation:	11/29/2017	Amount Prepared:	50 mL
Date of Analysis:	12/28/2017	Percent Solids:	N/A
Dry Weight Prepared:	N/A	Extract Dilution:	1
Wet Weight Prepared:	N/A	pH:	<2
Volume Prepared:	50 mL		
Final Volume:	50 mL		

CAS Number	Compound	Concentration ug/L	RL ug/L	Qualifier
7440-43-9	Cadmium	ND	10	
7440-47-3	Chromium	ND	20	
7440-50-8	Copper	ND	20	
7439-92-1	Lead	ND	20	

New Bedford Harbor- New Bedford, MA

Total Recoverable Metals in Water by ICP

Client Sample ID:	MW-01	Lab Sample ID:	AB71236
Date of Collection:	11/14/2017	Matrix:	GW
Date of Preparation:	11/29/2017	Amount Prepared:	50 mL
Date of Analysis:	12/28/2017	Percent Solids:	N/A
Dry Weight Prepared:	N/A	Extract Dilution:	1
Wet Weight Prepared:	N/A	pH:	<2
Volume Prepared:	50 mL		
Final Volume:	50 mL		

CAS Number	Compound	Concentration ug/L	RL ug/L	Qualifier
7440-43-9	Cadmium	ND	10	
7440-47-3	Chromium	ND	20	
7440-50-8	Copper	ND	20	
7439-92-1	Lead	ND	20	

New Bedford Harbor- New Bedford, MA

Total Recoverable Metals in Water by ICP

Client Sample ID:	MW-01D	Lab Sample ID:	AB71237
Date of Collection:	11/14/2017	Matrix:	GW
Date of Preparation:	11/29/2017	Amount Prepared:	50 mL
Date of Analysis:	12/28/2017	Percent Solids:	N/A
Dry Weight Prepared:	N/A	Extract Dilution:	1
Wet Weight Prepared:	N/A	pH:	<2
Volume Prepared:	50 mL		
Final Volume:	50 mL		

CAS Number	Compound	Concentration ug/L	RL ug/L	Qualifier
7440-43-9	Cadmium	ND	10	
7440-47-3	Chromium	ND	20	
7440-50-8	Copper	ND	20	
7439-92-1	Lead	ND	20	

New Bedford Harbor- New Bedford, MA

Total Recoverable Metals in Water by ICP

Client Sample ID:	MW-4A	Lab Sample ID:	AB71238
Date of Collection:	11/15/2017	Matrix:	GW
Date of Preparation:	11/29/2017	Amount Prepared:	50 mL
Date of Analysis:	12/28/2017	Percent Solids:	N/A
Dry Weight Prepared:	N/A	Extract Dilution:	1
Wet Weight Prepared:	N/A	pH:	<2
Volume Prepared:	50 mL		
Final Volume:	50 mL		

CAS Number	Compound	Concentration ug/L	RL ug/L	Qualifier
7440-43-9	Cadmium	ND	10	
7440-47-3	Chromium	ND	20	
7440-50-8	Copper	ND	20	
7439-92-1	Lead	ND	20	

New Bedford Harbor- New Bedford, MA

Total Recoverable Metals in Water by ICP

Client Sample ID:	MW-05	Lab Sample ID:	AB71239
Date of Collection:	11/15/2017	Matrix:	GW
Date of Preparation:	11/29/2017	Amount Prepared:	50 mL
Date of Analysis:	12/28/2017	Percent Solids:	N/A
Dry Weight Prepared:	N/A	Extract Dilution:	1
Wet Weight Prepared:	N/A	pH:	<2
Volume Prepared:	50 mL		
Final Volume:	50 mL		

CAS Number	Compound	Concentration ug/L	RL ug/L	Qualifier
7440-43-9	Cadmium	ND	10	
7440-47-3	Chromium	ND	20	
7440-50-8	Copper	ND	20	
7439-92-1	Lead	ND	20	

New Bedford Harbor- New Bedford, MA

Total Recoverable Metals in Water by ICP

Client Sample ID:	MW-03	Lab Sample ID:	AB71240
Date of Collection:	11/15/2017	Matrix:	GW
Date of Preparation:	11/29/2017	Amount Prepared:	50 mL
Date of Analysis:	12/28/2017	Percent Solids:	N/A
Dry Weight Prepared:	N/A	Extract Dilution:	1
Wet Weight Prepared:	N/A	pH:	<2
Volume Prepared:	50 mL		
Final Volume:	50 mL		

CAS Number	Compound	Concentration ug/L	RL ug/L	Qualifier
7440-43-9	Cadmium	ND	10	
7440-47-3	Chromium	ND	20	
7440-50-8	Copper	ND	20	
7439-92-1	Lead	ND	20	

New Bedford Harbor- New Bedford, MA

Total Recoverable Metals in Water by ICP

Client Sample ID:	MW-06	Lab Sample ID:	AB71241
Date of Collection:	11/15/2017	Matrix:	GW
Date of Preparation:	11/29/2017	Amount Prepared:	50 mL
Date of Analysis:	12/28/2017	Percent Solids:	N/A
Dry Weight Prepared:	N/A	Extract Dilution:	1
Wet Weight Prepared:	N/A	pH:	<2
Volume Prepared:	50 mL		
Final Volume:	50 mL		

CAS Number	Compound	Concentration ug/L	RL ug/L	Qualifier
7440-43-9	Cadmium	ND	10	
7440-47-3	Chromium	ND	20	
7440-50-8	Copper	ND	20	
7439-92-1	Lead	ND	20	

New Bedford Harbor- New Bedford, MA

Laboratory Reagent Blank

Client Sample ID:	N/A	Lab Sample ID:	N/A
Date of Collection:	N/A	Matrix:	GW
Date of Preparation:	11/29/2017	Amount Prepared:	50 mL
Date of Analysis:	12/28/2017	Percent Solids:	N/A
Dry Weight Prepared:	N/A	Extract Dilution:	1
Wet Weight Prepared:	N/A	pH:	<2
Volume Prepared:	50 mL		
Final Volume:	50 mL		

CAS Number	Compound	Concentration ug/L	RL ug/L	Qualifier
7440-43-9	Cadmium	ND	10	
7440-47-3	Chromium	ND	20	
7440-50-8	Copper	ND	20	
7439-92-1	Lead	ND	20	

New Bedford Harbor- New Bedford, MA

MATRIX SPIKE (MS) RECOVERY

Sample ID: AB71238

PARAMETER	SPIKE ADDED ug/L	SAMPLE CONCENTRATION ug/L	MS CONCENTRATION ug/L	MS % REC	QC LIMITS (% REC)
Cadmium	250	ND	243	97	75 - 125
Chromium	500	ND	464	93	75 - 125
Copper	500	ND	480	96	75 - 125
Lead	500	ND	464	93	75 - 125

New Bedford Harbor- New Bedford, MA

Laboratory Duplicate Results

Sample ID: AB71235

PARAMETER	SAMPLE RESULT ug/L	SAMPLE DUPLICATE RESULT ug/L	PRECISION RPD %	QC LIMITS
Cadmium	ND	ND	NC	20
Chromium	ND	ND	NC	20
Copper	ND	ND	NC	20
Lead	ND	ND	NC	20

New Bedford Harbor- New Bedford, MA

Laboratory Fortified Blank (LFB) Results

PARAMETER	LFB AMOUNT SPIKED ug/L	LFB RESULT ug/L	LFB RECOVERY %	QC LIMITS %
Cadmium	250	246	98	85 - 115
Chromium	500	490	98	85 - 115
Copper	500	500	100	85 - 115
Lead	500	495	99	85 - 115

Comments:

Samples in Batch: AB71235, AB71236, AB71237, AB71238, AB71239, AB71240, AB71241

ENVIRONMENTAL PROTECTION AGENCY

REGION 1

CHAIN OF CUSTODY RECORD

PROJ. NO.	PROJECT NAME
17110029	New Bedford Harbor - Groundwater

SAMPLERS: (Signature) W. Semmes

STA. NO.	DATE	TIME	COMP.	GRAB	STATION LOCATION	NO. OF CONTAINERS	PCB's ($PCBW) 2-1L	Metals (Total) 1-250mL	Metals (Dissolved) 1-250mL	TSS (1L)	VOA (6 VOA vials) 40mL		REMARKS
	11/14/17	1355		X	MW-7A	9	2	1	1	1	4		VOA (HCl pres pH<2), Metals (HNO3, pH<2)
	11/14/17	1640		X	MW-01	9	2	1	1	1	4		
	11/14/17	1640		X	MW-01D	9	2	1	1	1	4		
	11/15/17	1050		X	MW-4A	9	2	1	1	1	4		
	11/15/17	1150		X	MW-05	9	2	1	1	1	4		
	11/15/17	1525		X	MW-03	9	2	1	1	1	4		
	11/15/17	1535		X	MW-06	10	2	1	1	1	5		extra 40 ml VOA vial for VOC
	11/14/17			X	Trips VOA's	4					4		Trip Blanks

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
	11/16/17 1028				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature) ESAT	Date / Time	Remarks	
			11/16/17 10:28		

Remarks:
17110029 $PCBW
17110029 $METW_PE
17110029 $DMETW_PE
17110029 VOAMW
17110029 TSS

Distribution: Original Accompanies Shipment; Copy to Coordinator Field Files

United States Environmental Protection Agency
Office of Environmental Measurement & Evaluation
11 Technology Drive
North Chelmsford, MA 01863-2431

Laboratory Report

January 10, 2018

Chris Smith - Mail Code OSRR07-1
Jerry Keefe - EIA / OEME
US EPA New England Region 1

Project Number: 17110029
Project: New Bedford Harbor- New Bedford, MA
Analysis:Dissolved Metals in Water by ICP
EPA Chemist: Allison Connors

Date Samples Received by the Laboratory: 11/16/2017

Analytical Procedure:

All samples were received and logged in by the laboratory according to the USEPA New England Laboratory SOP for Sample Log-in.

Sample preparation and analysis was done following the EPA Region I SOP, EIASOP-OPTIMAS0.

Samples were prepared following the EPA Region I SOP, EIASOP-INGMETALSPREP8

The sample preparation and analysis SOP's are based on Methods 3010A or 3005A and 6010B as stated in "Test Methods for Evaluating Solid Waste, 3rd ed., Final Update III, 7/92 and 12/96."

The samples were analyzed using a Perkin Elmer Dual View Inductively Coupled Plasma - Optical Emission Spectrometer.

Data were reviewed in accordance with the internal verification procedures described in the EPA New England Quality Manual for NERL.

Results relate only to the items tested or to the samples as received by the Laboratory. This analytical report shall not be reproduced except in full, without written approval of the laboratory.

If you have any questions please call me at 617-918-8340 .

Sincerely,

Digitally signed by DANIEL BOUDREAU
DN: c=US, o=U.S. Government, ou=USEPA, ou=Staff, cn=DANIEL BOUDREAU, dnQualifier=0000001239
Date: 2018.01.10 16:19:42 -05'00'

17110029$DMETW_PE

Qualifiers:

RL = Reporting limit
ND = Not Detected above Reporting limit
NA = Not Applicable due to high sample dilutions or sample interferences
NC = Not calculated since analyte concentration is ND.
J = Estimated value
J1 = Estimated value due to MS recovery outside accceptance criteria
J2 = Estimated value due to LFB result outside acceptance criteria
J3 = Estimated value due to RPD result outside acceptance criteria
J4 = Estimated value due to LCS result outside acceptance criteria
E = Estimated value exceeds the calibration range
L = Estimated value is below the calibration range
B = Analyte is associated with the lab blank or trip blank contamination. Values are qualified when the observed concentration of the contamination in the sample extract is less than 10 times the concentration in the blank.
R = No recovery was calculated since the analyte concentration is greater than four times the spike level.
P = The confirmation value exceeded 35% difference and is less than 100%. The lower value is reported.
C = The identification has been confirmed by GC/MS.
A = Suspected Aldol condensation product.
N = Tentatively identified compound.

New Bedford Harbor- New Bedford, MA

Dissolved Metals in Water by ICP

Client Sample ID:	MW-7A	Lab Sample ID:	AB71235
Date of Collection:	11/14/2017	Matrix:	GW
Date of Preparation:	11/30/2017	Amount Prepared:	40 mL
Date of Analysis:	12/28/2017	Percent Solids:	N/A
Dry Weight Prepared:	N/A	Extract Dilution:	1.1
Wet Weight Prepared:	N/A	pH:	<2
Volume Prepared:	40 mL		
Final Volume:	44 mL		

CAS Number	Compound	Concentration ug/L	RL ug/L	Qualifier
7440-43-9	Cadmium	ND	10	
7440-47-3	Chromium	ND	20	
7440-50-8	Copper	ND	20	
7439-92-1	Lead	ND	20	

New Bedford Harbor- New Bedford, MA

Dissolved Metals in Water by ICP

Client Sample ID:	MW-01	Lab Sample ID:	AB71236
Date of Collection:	11/14/2017	Matrix:	GW
Date of Preparation:	11/30/2017	Amount Prepared:	40 mL
Date of Analysis:	12/28/2017	Percent Solids:	N/A
Dry Weight Prepared:	N/A	Extract Dilution:	1.1
Wet Weight Prepared:	N/A	pH:	<2
Volume Prepared:	40 mL		
Final Volume:	44 mL		

CAS Number	Compound	Concentration ug/L	RL ug/L	Qualifier
7440-43-9	Cadmium	ND	10	
7440-47-3	Chromium	ND	20	
7440-50-8	Copper	ND	20	
7439-92-1	Lead	ND	20	

New Bedford Harbor- New Bedford, MA

Dissolved Metals in Water by ICP

Client Sample ID:	MW-01D	Lab Sample ID:	AB71237
Date of Collection:	11/14/2017	Matrix:	GW
Date of Preparation:	11/30/2017	Amount Prepared:	40 mL
Date of Analysis:	12/28/2017	Percent Solids:	N/A
Dry Weight Prepared:	N/A	Extract Dilution:	1.1
Wet Weight Prepared:	N/A	pH:	<2
Volume Prepared:	40 mL		
Final Volume:	44 mL		

CAS Number	Compound	Concentration ug/L	RL ug/L	Qualifier
7440-43-9	Cadmium	ND	10	
7440-47-3	Chromium	ND	20	
7440-50-8	Copper	ND	20	
7439-92-1	Lead	ND	20	

New Bedford Harbor- New Bedford, MA

Dissolved Metals in Water by ICP

Client Sample ID:	MW-4A	Lab Sample ID:	AB71238
Date of Collection:	11/15/2017	Matrix:	GW
Date of Preparation:	11/30/2017	Amount Prepared:	40 mL
Date of Analysis:	12/28/2017	Percent Solids:	N/A
Dry Weight Prepared:	N/A	Extract Dilution:	1.1
Wet Weight Prepared:	N/A	pH:	<2
Volume Prepared:	40 mL		
Final Volume:	44 mL		

CAS Number	Compound	Concentration ug/L	RL ug/L	Qualifier
7440-43-9	Cadmium	ND	10	
7440-47-3	Chromium	ND	20	
7440-50-8	Copper	ND	20	
7439-92-1	Lead	ND	20	

New Bedford Harbor- New Bedford, MA

Dissolved Metals in Water by ICP

Client Sample ID:	MW-05	Lab Sample ID:	AB71239
Date of Collection:	11/15/2017	Matrix:	GW
Date of Preparation:	11/30/2017	Amount Prepared:	40 mL
Date of Analysis:	12/28/2017	Percent Solids:	N/A
Dry Weight Prepared:	N/A	Extract Dilution:	1.1
Wet Weight Prepared:	N/A	pH:	<2
Volume Prepared:	40 mL		
Final Volume:	44 mL		

CAS Number	Compound	Concentration ug/L	RL ug/L	Qualifier
7440-43-9	Cadmium	ND	10	
7440-47-3	Chromium	ND	20	
7440-50-8	Copper	ND	20	
7439-92-1	Lead	ND	20	

New Bedford Harbor- New Bedford, MA

Dissolved Metals in Water by ICP

Client Sample ID:	MW-03	Lab Sample ID:	AB71240
Date of Collection:	11/15/2017	Matrix:	GW
Date of Preparation:	11/30/2017	Amount Prepared:	40 mL
Date of Analysis:	12/28/2017	Percent Solids:	N/A
Dry Weight Prepared:	N/A	Extract Dilution:	1.1
Wet Weight Prepared:	N/A	pH:	<2
Volume Prepared:	40 mL		
Final Volume:	44 mL		

CAS Number	Compound	Concentration ug/L	RL ug/L	Qualifier
7440-43-9	Cadmium	ND	10	
7440-47-3	Chromium	ND	20	
7440-50-8	Copper	ND	20	
7439-92-1	Lead	ND	20	

New Bedford Harbor- New Bedford, MA

Dissolved Metals in Water by ICP

Client Sample ID:	MW-06	Lab Sample ID:	AB71241
Date of Collection:	11/15/2017	Matrix:	GW
Date of Preparation:	11/30/2017	Amount Prepared:	40 mL
Date of Analysis:	12/28/2017	Percent Solids:	N/A
Dry Weight Prepared:	N/A	Extract Dilution:	1.1
Wet Weight Prepared:	N/A	pH:	<2
Volume Prepared:	40 mL		
Final Volume:	44 mL		

CAS Number	Compound	Concentration ug/L	RL ug/L	Qualifier
7440-43-9	Cadmium	ND	10	
7440-47-3	Chromium	ND	20	
7440-50-8	Copper	ND	20	
7439-92-1	Lead	ND	20	

New Bedford Harbor- New Bedford, MA

Laboratory Reagent Blank

Client Sample ID:	N/A	Lab Sample ID:	N/A
Date of Collection:	N/A	Matrix:	GW
Date of Preparation:	11/30/2017	Amount Prepared:	40 mL
Date of Analysis:	12/28/2017	Percent Solids:	N/A
Dry Weight Prepared:	N/A	Extract Dilution:	1.1
Wet Weight Prepared:	N/A	pH:	<2
Volume Prepared:	40 mL		
Final Volume:	44 mL		

CAS Number	Compound	Concentration ug/L	RL ug/L	Qualifier
7440-43-9	Cadmium	ND	10	
7440-47-3	Chromium	ND	20	
7440-50-8	Copper	ND	20	
7439-92-1	Lead	ND	20	

New Bedford Harbor- New Bedford, MA

MATRIX SPIKE (MS) RECOVERY

Sample ID: AB71238

PARAMETER	SPIKE ADDED ug/L	SAMPLE CONCENTRATION ug/L	MS CONCENTRATION ug/L	MS % REC	QC LIMITS (% REC)
Cadmium	250	ND	241	96	75 - 125
Chromium	500	ND	508	102	75 - 125
Copper	500	ND	483	97	75 - 125
Lead	500	ND	463	93	75 - 125

New Bedford Harbor- New Bedford, MA

Laboratory Duplicate Results

Sample ID: AB71235

PARAMETER	SAMPLE RESULT ug/L	SAMPLE DUPLICATE RESULT ug/L	PRECISION RPD %	QC LIMITS
Cadmium	ND	ND	NC	20
Chromium	ND	ND	NC	20
Copper	ND	ND	NC	20
Lead	ND	ND	NC	20

New Bedford Harbor- New Bedford, MA

Laboratory Fortified Blank (LFB) Results

PARAMETER	LFB AMOUNT SPIKED ug/L	LFB RESULT ug/L	LFB RECOVERY %	QC LIMITS %
Cadmium	250	243	97	85 - 115
Chromium	500	477	95	85 - 115
Copper	500	497	99	85 - 115
Lead	500	488	98	85 - 115

Comments:

Samples in Batch: AB71235, AB71236, AB71237, AB71238, AB71239, AB71240, AB71241

ENVIRONMENTAL PROTECTION AGENCY

REGION 1

CHAIN OF CUSTODY RECORD

PROJ. NO.	PROJECT NAME
17110029	New Bedford Harbor - Groundwater

SAMPLERS: (Signature) W. Semmes

STA. NO.	DATE	TIME	COMP.	GRAB	STATION LOCATION	NO. OF CONTAINERS	PCB's ($PCBW) 2-1L	Metals (Total) 1-250mL	Metals (Dissolved) 1-250mL	TSS (1L)	VOA (6 VOA vials) 40mL		REMARKS
	11/14/17	1355		X	MW-7A	9	2	1	1	1	4		VOA (HCl pres pH<2), Metals (HNO3, pH<2)
	11/14/17	1640		X	MW-01	9	2	1	1	1	4		
	11/14/17	1640		X	MW-01D	9	2	1	1	1	4		
	11/15/17	1050		X	MW-4A	9	2	1	1	1	4		
	11/15/17	1150		X	MW-05	9	2	1	1	1	4		
	11/15/17	1525		X	MW-03	9	2	1	1	1	4		
	11/15/17	1535		X	MW-06	10	2	1	1	1	5		extra 40 ml VOA vial for VOC
	11/14/17			X	Trips VOA's	4					4		Trip Blanks

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
	11/16/17 1028				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature) ESAT	Date / Time	Remarks	
			11/16/17 10:28		

Remarks:
17110029 $PCBW
17110029 $METW_PE
17110029 $DMETW_PE
17110029 VOAMW
17110029 TSS

Distribution: Original Accompanies Shipment; Copy to Coordinator Field Files

United States Environmental Protection Agency
Office of Environmental Measurement & Evaluation
11 Technology Drive
North Chelmsford, MA 01863-2431

Laboratory Results

November 27, 2017

Chris Smith - Mail Code OSRR07-1
Jerry Keefe - EIA / OEME
US EPA New England Region 1

Project No: 17110029
Project: New Bedford Harbor- New Bedford, MA
Analysis: Total Suspended Solids in Water
EPA Chemist: Inna Germansderfer

Date Samples Received by the Laboratory: 11/16/2017

Analytical Procedure:

All samples were received and logged in by the laboratory according to the USEPA New England Laboratory SOP for Sample Log-in.

Sample preparation and analysis was done following the EPA Region I SOP, INGTSS-TDS-VRES6.

The SOP is based on SM 2540 D.

Results relate only to the items tested or to the samples as received by the Laboratory. This analytical report shall not be reproduced except in full, without written approval of the laboratory.

Data were reviewed in accordance with the internal verification procedures described in the EPA New England Quality Manual for NERL.

If you have any questions please call me at 617-918-8340.

Sincerely,

Digitally signed by DANIEL BOUDREAU
DN: c=US, o=U.S. Government, ou=USEPA, ou=Staff, cn=DANIEL BOUDREAU, dnQualifier=0000001239
Date: 2017.11.27 16:39:07 -05'00'

17110029TSS

Qualifiers:

RL = Reporting limit
ND = Not Detected above Reporting limit
NA = Not Applicable due to high sample dilutions or sample interferences
NC = Not calculated since analyte concentration is ND.
J = Estimated value
J1 = Estimated value due to MS recovery outside accceptance criteria
J2 = Estimated value due to LFB result outside acceptance criteria
J3 = Estimated value due to RPD result outside acceptance criteria
J4 = Estimated value due to LCS result outside acceptance criteria
E = Estimated value exceeds the calibration range
L = Estimated value is below the calibration range
B = Analyte is associated with the lab blank or trip blank contamination. Values are qualified when the observed concentration of the contamination in the sample extract is less than 10 times the concentration in the blank.
R = No recovery was calculated since the analyte concentration is greater than four times the spike level.
P = The confirmation value exceeded 35% difference and is less than 100%. The lower value is reported.
C = The identification has been confirmed by GC/MS.
A = Suspected Aldol condensation product.
N = Tentatively identified compound.

New Bedford Harbor- New Bedford, MA

Total Suspended Solids in Water

Matrix: GW

Sample Number	Lab ID	Collected	Analysis	Concentration mg/L	RL mg/L	Qualifier
MW-7A	AB71235	11/14/2017 13:55	11/20/2017	ND	2.5	
Comments:						
MW-01	AB71236	11/14/2017 16:40	11/20/2017	ND	2.5	
Comments:						
MW-01D	AB71237	11/14/2017 16:40	11/20/2017	ND	2.5	
Comments:						
MW-4A	AB71238	11/15/2017 10:50	11/20/2017	**2.8**	2.5	
Comments:						
MW-05	AB71239	11/15/2017 11:50	11/20/2017	**3.8**	2.5	
Comments:						
MW-03	AB71240	11/15/2017 15:25	11/20/2017	**11**	2.5	
Comments:						
MW-06	AB71241	11/15/2017 15:35	11/20/2017	**9.2**	2.5	
Comments:						
Blank			11/20/2017	ND	2.5	
Comments:						

New Bedford Harbor- New Bedford, MA

Laboratory Duplicate Results

SAMPLE ID	PARAMETER	SAMPLE RESULT mg/L	SAMPLE DUP RESULT mg/L	PRECISION RPD %	QC LIMITS (%RPD)
AB71237	Total Suspended Solids in Water	ND	ND	NC	25

ENVIRONMENTAL PROTECTION AGENCY

REGION 1

CHAIN OF CUSTODY RECORD

PROJ. NO.	PROJECT NAME
17110029	New Bedford Harbor - Groundwater

SAMPLERS: (Signature) W. Semmes

STA. NO.	DATE	TIME	COMP.	GRAB	STATION LOCATION	NO. OF CONTAINERS	PCB's ($PCBW) 2-1L	Metals (Total) 1-250mL	Metals (Dissolved) 1-250mL	TSS (1L)	VOA (5 VOA vial) 40mL		REMARKS
	11/14/17	1355		X	MW-7A	9	2	1	1	1	4		VOA (HCl pres pH<2), Metals (HNO3, pH<2)
	11/14/17	1640		X	MW-01	9	2	1	1	1	4		
	11/14/17	1640		X	MW-01D	9	2	1	1	1	4		
	11/15/17	1050		X	MW-4A	9	2	1	1	1	4		
	11/15/17	1150		X	MW-05	9	2	1	1	1	4		
	11/15/17	1525		X	MW-03	9	2	1	1	1	4		
	11/15/17	1535		X	MW-06	10	2	1	1	1	5		extra 40 ml VOA vial for VOC
	11/14/17			X	Trips VOA's	4					4		Trip Blanks

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
	11/16/17 1028				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature) ESAT	Date / Time	Remarks	
			11/16/17 10:28		

Remarks:
17110029 $PCBW
17110029 $METW_PE
17110029 $DMETW_PE
17110029 VOAMW
17110029 TSS

Distribution: Original Accompanies Shipment; Copy to Coordinator Field Files

United States Environmental Protection Agency
Office of Environmental Measurement & Evaluation
11 Technology Drive
North Chelmsford, MA 01863-2431

Laboratory Report

January 03, 2018

Chris Smith - Mail Code OSRR07-1
Jerry Keefe - EIA / OEME
US EPA New England Region 1

Project Number: 17110029
Project: New Bedford Harbor- New Bedford, MA
Analysis:VOAs in Water
EPA Chemist: Joseph Montanaro

Date Samples Received by the Laboratory: 11/16/2017

Analytical Procedure:

All samples were received and logged in by the laboratory according to the USEPA New England Laboratory SOP for Sample Log-in.

Sample preparation and analysis was done following the EPA Region I SOP, EIASOP-VOAGCMS9.

Samples were analyzed by GC/MS. Samples were introduced to the GC via a Tekmar pre-concentrator and an Archon autosampler. The analysis SOP is based on US EPA Method 8260B, method 5030B, rev 2.0 SW-846, Rev 2.0,1996. Method 624, 40CFR Part 136 Appendix A, July 1, 1992, and USEPA CLP SOW for Organic Analysis OLM04.2, 1999.

Data were reviewed in accordance with the internal verification procedures described in the EPA New England Quality Manual for NERL.

Results relate only to the items tested or to the samples as received by the Laboratory. This analytical report shall not be reproduced except in full, without written approval of the laboratory.

If you have any questions please call me at 617-918-8340 .

Sincerely,

Digitally signed by DANIEL BOUDREAU
DN: c=US, o=U.S. Government, ou=USEPA, ou=Staff, cn=DANIEL BOUDREAU, dnQualifier=0000001239
Date: 2018.01.03 11:08:15 -05'00'

17110029$VOAMW

Qualifiers:

RL = Reporting limit
ND = Not Detected above Reporting limit
NA = Not Applicable due to high sample dilutions or sample interferences
NC = Not calculated since analyte concentration is ND.
J = Estimated value
J1 = Estimated value due to MS recovery outside accceptance criteria
J2 = Estimated value due to LFB result outside acceptance criteria
J3 = Estimated value due to RPD result outside acceptance criteria
J4 = Estimated value due to LCS result outside acceptance criteria
E = Estimated value exceeds the calibration range
L = Estimated value is below the calibration range
B = Analyte is associated with the lab blank or trip blank contamination. Values are qualified when the observed concentration of the contamination in the sample extract is less than 10 times the concentration in the blank.
R = No recovery was calculated since the analyte concentration is greater than four times the spike level.
P = The confirmation value exceeded 35% difference and is less than 100%. The lower value is reported.
C = The identification has been confirmed by GC/MS.
A = Suspected Aldol condensation product.
N = Tentatively identified compound.

New Bedford Harbor- New Bedford, MA

VOAs in Water

Client Sample ID:	MW-7A	Lab Sample ID:	AB71235
Date of Collection:	11/14/2017	Matrix:	GW
Date of Preparation:	11/16/2017	Amount Prepared:	5 mL
Date of Analysis:	11/16/2017	Percent Solids:	N/A
Dry Weight Prepared:	N/A	Extract Dilution:	1
Wet Weight Prepared:	N/A	pH:	<2
Volume Extracted:	5 mL	GPC Factor:	N/A
Final Volume:	N/A		

CAS Number	Compound	Concentration ug/L	RL ug/L	Qualifier
74-87-3	Chloromethane	ND	1.0	
75-01-4	Vinyl Chloride	ND	1.0	
74-83-9	Bromomethane	ND	1.0	
75-00-3	Chloroethane	ND	1.0	
75-69-4	Trichlorofluoromethane	ND	1.0	
60-29-7	Ethyl Ether	ND	1.0	
67-64-1	2-Propanone (acetone)	ND	1.0	
76-13-1	1,1,2-Trichloro-1,2,2-Trifluoroetha	ND	1.0	
75-35-4	1,1-Dichloroethylene	ND	1.0	
75-15-0	Carbon Disulfide	ND	1.0	
75-71-8	Dichlorodifluoromethane	ND	1.0	
75-09-2	Methylene Chloride	ND	1.0	
107-13-1	Acrylonitrile	ND	1.0	
1634-04-4	Methyl-t-Butyl Ether	ND	1.0	
156-60-5	Trans-1,2-Dichloroethylene	ND	1.0	
75-34-3	1,1-dichloroethane	ND	1.0	
108-05-4	Vinyl Acetate	ND	1.0	
78-93-3	2-Butanone (MEK)	ND	1.0	
594-20-7	2,2-Dichloropropane	ND	1.0	
156-59-2	cis-1,2-Dichloroethylene	ND	1.0	
67-66-3	Chloroform	ND	1.0	
74-97-5	Bromochloromethane	ND	1.0	
109-99-9	Tetrahydrofuran	ND	1.0	
71-55-6	1,1,1-Trichloroethane	ND	1.0	
107-06-2	1,2-Dichloroethane	ND	1.0	
56-23-5	Carbon tetrachloride	ND	1.0	
71-43-2	Benzene	ND	1.0	
10061-01-5	c-1,3-dichloropropene	ND	1.0	
108-88-3	Toluene	ND	1.0	
10061-02-6	t-1,3-Dichloropropene	ND	1.0	
79-00-5	1,1,2-Trichloroethane	ND	1.0	
124-48-1	Dibromochloromethane	ND	1.0	
108-90-7	Chlorobenzene	ND	1.0	
563-58-6	1,1-Dichloropropene	ND	1.0	
79-01-6	Trichloroethylene	ND	1.0	
78-87-5	1,2-Dichloropropane	ND	1.0	
75-27-4	Bromodichloromethane	ND	1.0	
74-95-3	Dibromomethane	ND	1.0	
108-10-1	4-Methyl-2-Pentanone(MIBK)	ND	1.0	
142-28-9	1,3-Dichloropropane	ND	1.0	
127-18-4	Tetrachloroethylene	ND	1.0	
106-93-4	1,2-Dibromoethane	ND	1.0	

New Bedford Harbor- New Bedford, MA

VOAs in Water

Client Sample ID:	MW-7A	Lab Sample ID:	AB71235
Date of Collection:	11/14/2017	Matrix:	GW
Date of Preparation:	11/16/2017	Amount Prepared:	5 mL
Date of Analysis:	11/16/2017	Percent Solids:	N/A
Dry Weight Prepared:	N/A	Extract Dilution:	1
Wet Weight Prepared:	N/A	pH:	<2
Volume Extracted:	5 mL	GPC Factor:	N/A
Final Volume:	N/A		

CAS Number	Compound	Concentration ug/L	RL ug/L	Qualifier
591-78-6	2-Hexanone	ND	1.0	
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0	
100-41-4	Ethylbenzene	ND	1.0	
108-38-3/106-42-3	M/P Xylene	ND	2.0	
95-47-6	Ortho Xylene	ND	1.0	
100-42-5	Styrene	ND	1.0	
75-25-2	Bromoform	ND	1.0	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	
98-82-8	Isopropylbenzene	ND	1.0	
108-86-1	Bromobenzene	ND	1.0	
96-18-4	1,2,3-Trichloropropane	ND	1.0	
103-65-1	N-Propylbenzene	ND	1.0	
95-49-8	2-Chlorotoluene	ND	1.0	
106-43-4	4-Chlorotoluene	ND	1.0	
98-06-6	Tert-Butylbenzene	ND	1.0	
108-67-8	1,3,5-Trimethylbenzene	ND	1.0	
95-63-6	1,2,4-Trimethylbenzene	ND	1.0	
135-98-8	Sec-Butylbenzene	ND	1.0	
541-73-1	1,3-Dichlorobenzene	ND	1.0	
99-87-6	Para-Isopropyltoluene	ND	1.0	
106-46-7	1,4-Dichlorobenzene	ND	1.0	
95-50-1	1,2-Dichlorobenzene	ND	1.0	
104-51-8	N-Butylbenzene	ND	1.0	
96-12-8	1,2-Dibromo-3-Chloropropane	ND	1.0	
120-82-1	1,2,4-Trichlorobenzene	ND	1.0	
87-68-3	Hexachlorobutadiene	ND	1.0	
91-20-3	Naphthalene	ND	1.0	
87-61-6	1,2,3-Trichlorobenzene	ND	1.0	

Surrogate Compounds	Recoveries (%)	QC Ranges
1,2-Dichloroethane-D4	105	74 - 136
Toluene-D8	97	85 - 118
1,4-Bromofluorobenzene	91	78 - 111

New Bedford Harbor- New Bedford, MA

Laboratory Blank for $VOAMW

Client Sample ID:	N/A	Lab Sample ID:	N/A
Date of Collection:	N/A	Matrix:	GW
Date of Preparation:	11/16/2017	Amount Prepared:	5.0 mL
Date of Analysis:	11/16/2017	Percent Solids:	N/A
Dry Weight Prepared:	N/A	Extract Dilution:	1
Wet Weight Prepared:	N/A	pH:	~6
Volume Extracted:	5.0 mL	GPC Factor:	N/A
Final Volume:	N/A		

CAS Number	Compound	Concentration ug/L	RL ug/L	Qualifier
74-87-3	Chloromethane	ND	1.0	
75-01-4	Vinyl Chloride	ND	1.0	
74-83-9	Bromomethane	ND	1.0	
75-00-3	Chloroethane	ND	1.0	
75-69-4	Trichlorofluoromethane	ND	1.0	
60-29-7	Ethyl Ether	ND	1.0	
67-64-1	2-Propanone (acetone)	ND	1.0	
76-13-1	1,1,2-Trichloro-1,2,2-Trifluoroetha	ND	1.0	
75-35-4	1,1-Dichloroethylene	ND	1.0	
75-15-0	Carbon Disulfide	ND	1.0	
75-71-8	Dichlorodifluoromethane	ND	1.0	
75-09-2	Methylene Chloride	ND	1.0	
107-13-1	Acrylonitrile	ND	1.0	
1634-04-4	Methyl-t-Butyl Ether	ND	1.0	
156-60-5	Trans-1,2-Dichloroethylene	ND	1.0	
75-34-3	1,1-dichloroethane	ND	1.0	
108-05-4	Vinyl Acetate	ND	1.0	
78-93-3	2-Butanone (MEK)	ND	1.0	
594-20-7	2,2-Dichloropropane	ND	1.0	
156-59-2	cis-1,2-Dichloroethylene	ND	1.0	
67-66-3	Chloroform	ND	1.0	
74-97-5	Bromochloromethane	ND	1.0	
109-99-9	Tetrahydrofuran	ND	1.0	
71-55-6	1,1,1-Trichloroethane	ND	1.0	
107-06-2	1,2-Dichloroethane	ND	1.0	
56-23-5	Carbon tetrachloride	ND	1.0	
71-43-2	Benzene	ND	1.0	
10061-01-5	c-1,3-dichloropropene	ND	1.0	
108-88-3	Toluene	ND	1.0	
10061-02-6	t-1,3-Dichloropropene	ND	1.0	
79-00-5	1,1,2-Trichloroethane	ND	1.0	
124-48-1	Dibromochloromethane	ND	1.0	
108-90-7	Chlorobenzene	ND	1.0	
563-58-6	1,1-Dichloropropene	ND	1.0	
79-01-6	Trichloroethylene	ND	1.0	
78-87-5	1,2-Dichloropropane	ND	1.0	
75-27-4	Bromodichloromethane	ND	1.0	
74-95-3	Dibromomethane	ND	1.0	
108-10-1	4-Methyl-2-Pentanone(MIBK)	ND	1.0	
142-28-9	1,3-Dichloropropane	ND	1.0	
127-18-4	Tetrachloroethylene	ND	1.0	
106-93-4	1,2-Dibromoethane	ND	1.0	

New Bedford Harbor- New Bedford, MA

Laboratory Blank for $VOAMW

Client Sample ID:	N/A	Lab Sample ID:	N/A
Date of Collection:	N/A	Matrix:	GW
Date of Preparation:	11/16/2017	Amount Prepared:	5.0 mL
Date of Analysis:	11/16/2017	Percent Solids:	N/A
Dry Weight Prepared:	N/A	Extract Dilution:	1
Wet Weight Prepared:	N/A	pH:	~6
Volume Extracted:	5.0 mL	GPC Factor:	N/A
Final Volume:	N/A		

CAS Number	Compound	Concentration ug/L	RL ug/L	Qualifier
591-78-6	2-Hexanone	ND	1.0	
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0	
100-41-4	Ethylbenzene	ND	1.0	
108-38-3/106-42-3	M/P Xylene	ND	2.0	
95-47-6	Ortho Xylene	ND	1.0	
100-42-5	Styrene	ND	1.0	
75-25-2	Bromoform	ND	1.0	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	
98-82-8	Isopropylbenzene	ND	1.0	
108-86-1	Bromobenzene	ND	1.0	
96-18-4	1,2,3-Trichloropropane	ND	1.0	
103-65-1	N-Propylbenzene	ND	1.0	
95-49-8	2-Chlorotoluene	ND	1.0	
106-43-4	4-Chlorotoluene	ND	1.0	
98-06-6	Tert-Butylbenzene	ND	1.0	
108-67-8	1,3,5-Trimethylbenzene	ND	1.0	
95-63-6	1,2,4-Trimethylbenzene	ND	1.0	
135-98-8	Sec-Butylbenzene	ND	1.0	
541-73-1	1,3-Dichlorobenzene	ND	1.0	
99-87-6	Para-Isopropyltoluene	ND	1.0	
106-46-7	1,4-Dichlorobenzene	ND	1.0	
95-50-1	1,2-Dichlorobenzene	ND	1.0	
104-51-8	N-Butylbenzene	ND	1.0	
96-12-8	1,2-Dibromo-3-Chloropropane	ND	1.0	
120-82-1	1,2,4-Trichlorobenzene	ND	1.0	
87-68-3	Hexachlorobutadiene	ND	1.0	
91-20-3	Naphthalene	ND	1.0	
87-61-6	1,2,3-Trichlorobenzene	ND	1.0	

Surrogate Compounds	Recoveries (%)	QC Ranges
1,2-Dichloroethane-D4	107	74 - 136
Toluene-D8	99	85 - 118
1,4-Bromofluorobenzene	94	78 - 111

Comments: Laboratory blank is associated with all samples in this project.

New Bedford Harbor- New Bedford, MA

VOAs in Water

Client Sample ID:	MW-01	Lab Sample ID:	AB71236
Date of Collection:	11/14/2017	Matrix:	GW
Date of Preparation:	11/16/2017	Amount Prepared:	5 mL
Date of Analysis:	11/16/2017	Percent Solids:	N/A
Dry Weight Prepared:	N/A	Extract Dilution:	1
Wet Weight Prepared:	N/A	pH:	<2
Volume Extracted:	5 mL	GPC Factor:	N/A
Final Volume:	N/A		

CAS Number	Compound	Concentration ug/L	RL ug/L	Qualifier
74-87-3	Chloromethane	ND	1.0	
75-01-4	Vinyl Chloride	ND	1.0	
74-83-9	Bromomethane	ND	1.0	
75-00-3	Chloroethane	ND	1.0	
75-69-4	Trichlorofluoromethane	ND	1.0	
60-29-7	Ethyl Ether	ND	1.0	
67-64-1	2-Propanone (acetone)	ND	1.0	
76-13-1	1,1,2-Trichloro-1,2,2-Trifluoroetha	ND	1.0	
75-35-4	1,1-Dichloroethylene	ND	1.0	
75-15-0	Carbon Disulfide	ND	1.0	
75-71-8	Dichlorodifluoromethane	ND	1.0	
75-09-2	Methylene Chloride	ND	1.0	
107-13-1	Acrylonitrile	ND	1.0	
1634-04-4	Methyl-t-Butyl Ether	ND	1.0	
156-60-5	Trans-1,2-Dichloroethylene	ND	1.0	
75-34-3	1,1-dichloroethane	ND	1.0	
108-05-4	Vinyl Acetate	ND	1.0	
78-93-3	2-Butanone (MEK)	ND	1.0	
594-20-7	2,2-Dichloropropane	ND	1.0	
156-59-2	cis-1,2-Dichloroethylene	ND	1.0	
67-66-3	Chloroform	ND	1.0	
74-97-5	Bromochloromethane	ND	1.0	
109-99-9	Tetrahydrofuran	ND	1.0	
71-55-6	1,1,1-Trichloroethane	ND	1.0	
107-06-2	1,2-Dichloroethane	ND	1.0	
56-23-5	Carbon tetrachloride	ND	1.0	
71-43-2	Benzene	ND	1.0	
10061-01-5	c-1,3-dichloropropene	ND	1.0	
108-88-3	Toluene	ND	1.0	
10061-02-6	t-1,3-Dichloropropene	ND	1.0	
79-00-5	1,1,2-Trichloroethane	ND	1.0	
124-48-1	Dibromochloromethane	ND	1.0	
108-90-7	Chlorobenzene	ND	1.0	
563-58-6	1,1-Dichloropropene	ND	1.0	
79-01-6	Trichloroethylene	ND	1.0	
78-87-5	1,2-Dichloropropane	ND	1.0	
75-27-4	Bromodichloromethane	ND	1.0	
74-95-3	Dibromomethane	ND	1.0	
108-10-1	4-Methyl-2-Pentanone(MIBK)	ND	1.0	
142-28-9	1,3-Dichloropropane	ND	1.0	
127-18-4	Tetrachloroethylene	ND	1.0	
106-93-4	1,2-Dibromoethane	ND	1.0	

New Bedford Harbor- New Bedford, MA

VOAs in Water

Client Sample ID:	MW-01	Lab Sample ID:	AB71236
Date of Collection:	11/14/2017	Matrix:	GW
Date of Preparation:	11/16/2017	Amount Prepared:	5 mL
Date of Analysis:	11/16/2017	Percent Solids:	N/A
Dry Weight Prepared:	N/A	Extract Dilution:	1
Wet Weight Prepared:	N/A	pH:	<2
Volume Extracted:	5 mL	GPC Factor:	N/A
Final Volume:	N/A		

CAS Number	Compound	Concentration ug/L	RL ug/L	Qualifier
591-78-6	2-Hexanone	ND	1.0	
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0	
100-41-4	Ethylbenzene	ND	1.0	
108-38-3/106-42-3	M/P Xylene	ND	2.0	
95-47-6	Ortho Xylene	ND	1.0	
100-42-5	Styrene	ND	1.0	
75-25-2	Bromoform	ND	1.0	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	
98-82-8	Isopropylbenzene	ND	1.0	
108-86-1	Bromobenzene	ND	1.0	
96-18-4	1,2,3-Trichloropropane	ND	1.0	
103-65-1	N-Propylbenzene	ND	1.0	
95-49-8	2-Chlorotoluene	ND	1.0	
106-43-4	4-Chlorotoluene	ND	1.0	
98-06-6	Tert-Butylbenzene	ND	1.0	
108-67-8	1,3,5-Trimethylbenzene	ND	1.0	
95-63-6	1,2,4-Trimethylbenzene	ND	1.0	
135-98-8	Sec-Butylbenzene	ND	1.0	
541-73-1	1,3-Dichlorobenzene	ND	1.0	
99-87-6	Para-Isopropyltoluene	ND	1.0	
106-46-7	1,4-Dichlorobenzene	ND	1.0	
95-50-1	1,2-Dichlorobenzene	ND	1.0	
104-51-8	N-Butylbenzene	ND	1.0	
96-12-8	1,2-Dibromo-3-Chloropropane	ND	1.0	
120-82-1	1,2,4-Trichlorobenzene	ND	1.0	
87-68-3	Hexachlorobutadiene	ND	1.0	
91-20-3	Naphthalene	ND	1.0	
87-61-6	1,2,3-Trichlorobenzene	ND	1.0	

Surrogate Compounds	Recoveries (%)	QC Ranges
1,2-Dichloroethane-D4	107	74 - 136
Toluene-D8	99	85 - 118
1,4-Bromofluorobenzene	93	78 - 111

New Bedford Harbor- New Bedford, MA

VOAs in Water

Client Sample ID:	MW-01D	Lab Sample ID:	AB71237
Date of Collection:	11/14/2017	Matrix:	GW
Date of Preparation:	11/16/2017	Amount Prepared:	5 mL
Date of Analysis:	11/16/2017	Percent Solids:	N/A
Dry Weight Prepared:	N/A	Extract Dilution:	1
Wet Weight Prepared:	N/A	pH:	<2
Volume Extracted:	5 mL	GPC Factor:	N/A
Final Volume:	N/A		

CAS Number	Compound	Concentration ug/L	RL ug/L	Qualifier
74-87-3	Chloromethane	ND	1.0	
75-01-4	Vinyl Chloride	ND	1.0	
74-83-9	Bromomethane	ND	1.0	
75-00-3	Chloroethane	ND	1.0	
75-69-4	Trichlorofluoromethane	ND	1.0	
60-29-7	Ethyl Ether	ND	1.0	
67-64-1	2-Propanone (acetone)	ND	1.0	
76-13-1	1,1,2-Trichloro-1,2,2-Trifluoroetha	ND	1.0	
75-35-4	1,1-Dichloroethylene	ND	1.0	
75-15-0	Carbon Disulfide	ND	1.0	
75-71-8	Dichlorodifluoromethane	ND	1.0	
75-09-2	Methylene Chloride	ND	1.0	
107-13-1	Acrylonitrile	ND	1.0	
1634-04-4	Methyl-t-Butyl Ether	ND	1.0	
156-60-5	Trans-1,2-Dichloroethylene	ND	1.0	
75-34-3	1,1-dichloroethane	ND	1.0	
108-05-4	Vinyl Acetate	ND	1.0	
78-93-3	2-Butanone (MEK)	ND	1.0	
594-20-7	2,2-Dichloropropane	ND	1.0	
156-59-2	cis-1,2-Dichloroethylene	ND	1.0	
67-66-3	Chloroform	ND	1.0	
74-97-5	Bromochloromethane	ND	1.0	
109-99-9	Tetrahydrofuran	ND	1.0	
71-55-6	1,1,1-Trichloroethane	ND	1.0	
107-06-2	1,2-Dichloroethane	ND	1.0	
56-23-5	Carbon tetrachloride	ND	1.0	
71-43-2	Benzene	ND	1.0	
10061-01-5	c-1,3-dichloropropene	ND	1.0	
108-88-3	Toluene	ND	1.0	
10061-02-6	t-1,3-Dichloropropene	ND	1.0	
79-00-5	1,1,2-Trichloroethane	ND	1.0	
124-48-1	Dibromochloromethane	ND	1.0	
108-90-7	Chlorobenzene	ND	1.0	
563-58-6	1,1-Dichloropropene	ND	1.0	
79-01-6	Trichloroethylene	ND	1.0	
78-87-5	1,2-Dichloropropane	ND	1.0	
75-27-4	Bromodichloromethane	ND	1.0	
74-95-3	Dibromomethane	ND	1.0	
108-10-1	4-Methyl-2-Pentanone(MIBK)	ND	1.0	
142-28-9	1,3-Dichloropropane	ND	1.0	
127-18-4	Tetrachloroethylene	ND	1.0	
106-93-4	1,2-Dibromoethane	ND	1.0	

New Bedford Harbor- New Bedford, MA

VOAs in Water

Client Sample ID:	MW-01D	Lab Sample ID:	AB71237
Date of Collection:	11/14/2017	Matrix:	GW
Date of Preparation:	11/16/2017	Amount Prepared:	5 mL
Date of Analysis:	11/16/2017	Percent Solids:	N/A
Dry Weight Prepared:	N/A	Extract Dilution:	1
Wet Weight Prepared:	N/A	pH:	<2
Volume Extracted:	5 mL	GPC Factor:	N/A
Final Volume:	N/A		

CAS Number	Compound	Concentration ug/L	RL ug/L	Qualifier
591-78-6	2-Hexanone	ND	1.0	
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0	
100-41-4	Ethylbenzene	ND	1.0	
108-38-3/106-42-3	M/P Xylene	ND	2.0	
95-47-6	Ortho Xylene	ND	1.0	
100-42-5	Styrene	ND	1.0	
75-25-2	Bromoform	ND	1.0	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	
98-82-8	Isopropylbenzene	ND	1.0	
108-86-1	Bromobenzene	ND	1.0	
96-18-4	1,2,3-Trichloropropane	ND	1.0	
103-65-1	N-Propylbenzene	ND	1.0	
95-49-8	2-Chlorotoluene	ND	1.0	
106-43-4	4-Chlorotoluene	ND	1.0	
98-06-6	Tert-Butylbenzene	ND	1.0	
108-67-8	1,3,5-Trimethylbenzene	ND	1.0	
95-63-6	1,2,4-Trimethylbenzene	ND	1.0	
135-98-8	Sec-Butylbenzene	ND	1.0	
541-73-1	1,3-Dichlorobenzene	ND	1.0	
99-87-6	Para-Isopropyltoluene	ND	1.0	
106-46-7	1,4-Dichlorobenzene	ND	1.0	
95-50-1	1,2-Dichlorobenzene	ND	1.0	
104-51-8	N-Butylbenzene	ND	1.0	
96-12-8	1,2-Dibromo-3-Chloropropane	ND	1.0	
120-82-1	1,2,4-Trichlorobenzene	ND	1.0	
87-68-3	Hexachlorobutadiene	ND	1.0	
91-20-3	Naphthalene	ND	1.0	
87-61-6	1,2,3-Trichlorobenzene	ND	1.0	

Surrogate Compounds	Recoveries (%)	QC Ranges
1,2-Dichloroethane-D4	107	74 - 136
Toluene-D8	99	85 - 118
1,4-Bromofluorobenzene	90	78 - 111

New Bedford Harbor- New Bedford, MA

VOAs in Water

Client Sample ID:	MW-4A	Lab Sample ID:	AB71238
Date of Collection:	11/15/2017	Matrix:	GW
Date of Preparation:	11/16/2017	Amount Prepared:	5 mL
Date of Analysis:	11/16/2017	Percent Solids:	N/A
Dry Weight Prepared:	N/A	Extract Dilution:	1
Wet Weight Prepared:	N/A	pH:	<2
Volume Extracted:	5 mL	GPC Factor:	N/A
Final Volume:	N/A		

CAS Number	Compound	Concentration ug/L	RL ug/L	Qualifier
74-87-3	Chloromethane	ND	1.0	
75-01-4	Vinyl Chloride	ND	1.0	
74-83-9	Bromomethane	ND	1.0	
75-00-3	Chloroethane	ND	1.0	
75-69-4	Trichlorofluoromethane	ND	1.0	
60-29-7	Ethyl Ether	ND	1.0	
67-64-1	2-Propanone (acetone)	ND	1.0	
76-13-1	1,1,2-Trichloro-1,2,2-Trifluoroetha	ND	1.0	
75-35-4	1,1-Dichloroethylene	ND	1.0	
75-15-0	Carbon Disulfide	ND	1.0	
75-71-8	Dichlorodifluoromethane	ND	1.0	
75-09-2	Methylene Chloride	ND	1.0	
107-13-1	Acrylonitrile	ND	1.0	
1634-04-4	Methyl-t-Butyl Ether	ND	1.0	
156-60-5	Trans-1,2-Dichloroethylene	ND	1.0	
75-34-3	1,1-dichloroethane	ND	1.0	
108-05-4	Vinyl Acetate	ND	1.0	
78-93-3	2-Butanone (MEK)	ND	1.0	
594-20-7	2,2-Dichloropropane	ND	1.0	
156-59-2	cis-1,2-Dichloroethylene	ND	1.0	
67-66-3	Chloroform	ND	1.0	
74-97-5	Bromochloromethane	ND	1.0	
109-99-9	Tetrahydrofuran	ND	1.0	
71-55-6	1,1,1-Trichloroethane	ND	1.0	
107-06-2	1,2-Dichloroethane	ND	1.0	
56-23-5	Carbon tetrachloride	ND	1.0	
71-43-2	Benzene	ND	1.0	
10061-01-5	c-1,3-dichloropropene	ND	1.0	
108-88-3	Toluene	ND	1.0	
10061-02-6	t-1,3-Dichloropropene	ND	1.0	
79-00-5	1,1,2-Trichloroethane	ND	1.0	
124-48-1	Dibromochloromethane	ND	1.0	
108-90-7	Chlorobenzene	ND	1.0	
563-58-6	1,1-Dichloropropene	ND	1.0	
79-01-6	Trichloroethylene	ND	1.0	
78-87-5	1,2-Dichloropropane	ND	1.0	
75-27-4	Bromodichloromethane	ND	1.0	
74-95-3	Dibromomethane	ND	1.0	
108-10-1	4-Methyl-2-Pentanone(MIBK)	ND	1.0	
142-28-9	1,3-Dichloropropane	ND	1.0	
127-18-4	Tetrachloroethylene	ND	1.0	
106-93-4	1,2-Dibromoethane	ND	1.0	

New Bedford Harbor- New Bedford, MA

VOAs in Water

Client Sample ID:	MW-4A	Lab Sample ID:	AB71238
Date of Collection:	11/15/2017	Matrix:	GW
Date of Preparation:	11/16/2017	Amount Prepared:	5 mL
Date of Analysis:	11/16/2017	Percent Solids:	N/A
Dry Weight Prepared:	N/A	Extract Dilution:	1
Wet Weight Prepared:	N/A	pH:	<2
Volume Extracted:	5 mL	GPC Factor:	N/A
Final Volume:	N/A		

CAS Number	Compound	Concentration ug/L	RL ug/L	Qualifier
591-78-6	2-Hexanone	ND	1.0	
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0	
100-41-4	Ethylbenzene	ND	1.0	
108-38-3/106-42-3	M/P Xylene	ND	2.0	
95-47-6	Ortho Xylene	ND	1.0	
100-42-5	Styrene	ND	1.0	
75-25-2	Bromoform	ND	1.0	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	
98-82-8	Isopropylbenzene	ND	1.0	
108-86-1	Bromobenzene	ND	1.0	
96-18-4	1,2,3-Trichloropropane	ND	1.0	
103-65-1	N-Propylbenzene	ND	1.0	
95-49-8	2-Chlorotoluene	ND	1.0	
106-43-4	4-Chlorotoluene	ND	1.0	
98-06-6	Tert-Butylbenzene	ND	1.0	
108-67-8	1,3,5-Trimethylbenzene	ND	1.0	
95-63-6	1,2,4-Trimethylbenzene	ND	1.0	
135-98-8	Sec-Butylbenzene	ND	1.0	
541-73-1	1,3-Dichlorobenzene	ND	1.0	
99-87-6	Para-Isopropyltoluene	ND	1.0	
106-46-7	1,4-Dichlorobenzene	ND	1.0	
95-50-1	1,2-Dichlorobenzene	ND	1.0	
104-51-8	N-Butylbenzene	ND	1.0	
96-12-8	1,2-Dibromo-3-Chloropropane	ND	1.0	
120-82-1	1,2,4-Trichlorobenzene	ND	1.0	
87-68-3	Hexachlorobutadiene	ND	1.0	
91-20-3	Naphthalene	ND	1.0	
87-61-6	1,2,3-Trichlorobenzene	ND	1.0	

Surrogate Compounds	Recoveries (%)	QC Ranges
1,2-Dichloroethane-D4	109	74 - 136
Toluene-D8	97	85 - 118
1,4-Bromofluorobenzene	92	78 - 111

New Bedford Harbor- New Bedford, MA

VOAs in Water

Client Sample ID:	MW-05	Lab Sample ID:	AB71239
Date of Collection:	11/15/2017	Matrix:	GW
Date of Preparation:	11/16/2017	Amount Prepared:	5 mL
Date of Analysis:	11/16/2017	Percent Solids:	N/A
Dry Weight Prepared:	N/A	Extract Dilution:	1
Wet Weight Prepared:	N/A	pH:	<2
Volume Extracted:	5 mL	GPC Factor:	N/A
Final Volume:	N/A		

CAS Number	Compound	Concentration ug/L	RL ug/L	Qualifier
74-87-3	Chloromethane	ND	1.0	
75-01-4	Vinyl Chloride	ND	1.0	
74-83-9	Bromomethane	ND	1.0	
75-00-3	Chloroethane	ND	1.0	
75-69-4	Trichlorofluoromethane	ND	1.0	
60-29-7	Ethyl Ether	ND	1.0	
67-64-1	2-Propanone (acetone)	ND	1.0	
76-13-1	1,1,2-Trichloro-1,2,2-Trifluoroetha	ND	1.0	
75-35-4	1,1-Dichloroethylene	ND	1.0	
75-15-0	Carbon Disulfide	ND	1.0	
75-71-8	Dichlorodifluoromethane	ND	1.0	
75-09-2	Methylene Chloride	ND	1.0	
107-13-1	Acrylonitrile	ND	1.0	
1634-04-4	Methyl-t-Butyl Ether	ND	1.0	
156-60-5	Trans-1,2-Dichloroethylene	ND	1.0	
75-34-3	1,1-dichloroethane	ND	1.0	
108-05-4	Vinyl Acetate	ND	1.0	
78-93-3	2-Butanone (MEK)	ND	1.0	
594-20-7	2,2-Dichloropropane	ND	1.0	
156-59-2	cis-1,2-Dichloroethylene	ND	1.0	
67-66-3	Chloroform	ND	1.0	
74-97-5	Bromochloromethane	ND	1.0	
109-99-9	Tetrahydrofuran	ND	1.0	
71-55-6	1,1,1-Trichloroethane	ND	1.0	
107-06-2	1,2-Dichloroethane	ND	1.0	
56-23-5	Carbon tetrachloride	ND	1.0	
71-43-2	Benzene	ND	1.0	
10061-01-5	c-1,3-dichloropropene	ND	1.0	
108-88-3	Toluene	ND	1.0	
10061-02-6	t-1,3-Dichloropropene	ND	1.0	
79-00-5	1,1,2-Trichloroethane	ND	1.0	
124-48-1	Dibromochloromethane	ND	1.0	
108-90-7	Chlorobenzene	ND	1.0	
563-58-6	1,1-Dichloropropene	ND	1.0	
79-01-6	Trichloroethylene	ND	1.0	
78-87-5	1,2-Dichloropropane	ND	1.0	
75-27-4	Bromodichloromethane	ND	1.0	
74-95-3	Dibromomethane	ND	1.0	
108-10-1	4-Methyl-2-Pentanone(MIBK)	ND	1.0	
142-28-9	1,3-Dichloropropane	ND	1.0	
127-18-4	Tetrachloroethylene	ND	1.0	
106-93-4	1,2-Dibromoethane	ND	1.0	

New Bedford Harbor- New Bedford, MA

VOAs in Water

Client Sample ID:	MW-05	Lab Sample ID:	AB71239
Date of Collection:	11/15/2017	Matrix:	GW
Date of Preparation:	11/16/2017	Amount Prepared:	5 mL
Date of Analysis:	11/16/2017	Percent Solids:	N/A
Dry Weight Prepared:	N/A	Extract Dilution:	1
Wet Weight Prepared:	N/A	pH:	<2
Volume Extracted:	5 mL	GPC Factor:	N/A
Final Volume:	N/A		

CAS Number	Compound	Concentration ug/L	RL ug/L	Qualifier
591-78-6	2-Hexanone	ND	1.0	
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0	
100-41-4	Ethylbenzene	ND	1.0	
108-38-3/106-42-3	M/P Xylene	ND	2.0	
95-47-6	Ortho Xylene	ND	1.0	
100-42-5	Styrene	ND	1.0	
75-25-2	Bromoform	ND	1.0	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	
98-82-8	Isopropylbenzene	ND	1.0	
108-86-1	Bromobenzene	ND	1.0	
96-18-4	1,2,3-Trichloropropane	ND	1.0	
103-65-1	N-Propylbenzene	ND	1.0	
95-49-8	2-Chlorotoluene	ND	1.0	
106-43-4	4-Chlorotoluene	ND	1.0	
98-06-6	Tert-Butylbenzene	ND	1.0	
108-67-8	1,3,5-Trimethylbenzene	ND	1.0	
95-63-6	1,2,4-Trimethylbenzene	ND	1.0	
135-98-8	Sec-Butylbenzene	ND	1.0	
541-73-1	1,3-Dichlorobenzene	ND	1.0	
99-87-6	Para-Isopropyltoluene	ND	1.0	
106-46-7	1,4-Dichlorobenzene	ND	1.0	
95-50-1	1,2-Dichlorobenzene	ND	1.0	
104-51-8	N-Butylbenzene	ND	1.0	
96-12-8	1,2-Dibromo-3-Chloropropane	ND	1.0	
120-82-1	1,2,4-Trichlorobenzene	ND	1.0	
87-68-3	Hexachlorobutadiene	ND	1.0	
91-20-3	Naphthalene	ND	1.0	
87-61-6	1,2,3-Trichlorobenzene	ND	1.0	

Surrogate Compounds	Recoveries (%)	QC Ranges
1,2-Dichloroethane-D4	109	74 - 136
Toluene-D8	98	85 - 118
1,4-Bromofluorobenzene	90	78 - 111

New Bedford Harbor- New Bedford, MA

VOAs in Water

Client Sample ID:	MW-03	Lab Sample ID:	AB71240
Date of Collection:	11/15/2017	Matrix:	GW
Date of Preparation:	11/16/2017	Amount Prepared:	5 mL
Date of Analysis:	11/16/2017	Percent Solids:	N/A
Dry Weight Prepared:	N/A	Extract Dilution:	1
Wet Weight Prepared:	N/A	pH:	<2
Volume Extracted:	5 mL	GPC Factor:	N/A
Final Volume:	N/A		

CAS Number	Compound	Concentration ug/L	RL ug/L	Qualifier
74-87-3	Chloromethane	ND	1.0	
75-01-4	Vinyl Chloride	ND	1.0	
74-83-9	Bromomethane	ND	1.0	
75-00-3	Chloroethane	ND	1.0	
75-69-4	Trichlorofluoromethane	ND	1.0	
60-29-7	Ethyl Ether	ND	1.0	
67-64-1	2-Propanone (acetone)	ND	1.0	
76-13-1	1,1,2-Trichloro-1,2,2-Trifluoroetha	ND	1.0	
75-35-4	1,1-Dichloroethylene	ND	1.0	
75-15-0	Carbon Disulfide	ND	1.0	
75-71-8	Dichlorodifluoromethane	ND	1.0	
75-09-2	Methylene Chloride	ND	1.0	
107-13-1	Acrylonitrile	ND	1.0	
1634-04-4	Methyl-t-Butyl Ether	ND	1.0	
156-60-5	Trans-1,2-Dichloroethylene	ND	1.0	
75-34-3	1,1-dichloroethane	ND	1.0	
108-05-4	Vinyl Acetate	ND	1.0	
78-93-3	2-Butanone (MEK)	ND	1.0	
594-20-7	2,2-Dichloropropane	ND	1.0	
156-59-2	cis-1,2-Dichloroethylene	ND	1.0	
67-66-3	Chloroform	ND	1.0	
74-97-5	Bromochloromethane	ND	1.0	
109-99-9	Tetrahydrofuran	ND	1.0	
71-55-6	1,1,1-Trichloroethane	ND	1.0	
107-06-2	1,2-Dichloroethane	ND	1.0	
56-23-5	Carbon tetrachloride	ND	1.0	
71-43-2	Benzene	ND	1.0	
10061-01-5	c-1,3-dichloropropene	ND	1.0	
108-88-3	Toluene	ND	1.0	
10061-02-6	t-1,3-Dichloropropene	ND	1.0	
79-00-5	1,1,2-Trichloroethane	ND	1.0	
124-48-1	Dibromochloromethane	ND	1.0	
108-90-7	Chlorobenzene	ND	1.0	
563-58-6	1,1-Dichloropropene	ND	1.0	
79-01-6	Trichloroethylene	ND	1.0	
78-87-5	1,2-Dichloropropane	ND	1.0	
75-27-4	Bromodichloromethane	ND	1.0	
74-95-3	Dibromomethane	ND	1.0	
108-10-1	4-Methyl-2-Pentanone(MIBK)	ND	1.0	
142-28-9	1,3-Dichloropropane	ND	1.0	
127-18-4	Tetrachloroethylene	ND	1.0	
106-93-4	1,2-Dibromoethane	ND	1.0	

New Bedford Harbor- New Bedford, MA

VOAs in Water

Client Sample ID:	MW-03	Lab Sample ID:	AB71240
Date of Collection:	11/15/2017	Matrix:	GW
Date of Preparation:	11/16/2017	Amount Prepared:	5 mL
Date of Analysis:	11/16/2017	Percent Solids:	N/A
Dry Weight Prepared:	N/A	Extract Dilution:	1
Wet Weight Prepared:	N/A	pH:	<2
Volume Extracted:	5 mL	GPC Factor:	N/A
Final Volume:	N/A		

CAS Number	Compound	Concentration ug/L	RL ug/L	Qualifier
591-78-6	2-Hexanone	ND	1.0	
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0	
100-41-4	Ethylbenzene	ND	1.0	
108-38-3/106-42-3	M/P Xylene	ND	2.0	
95-47-6	Ortho Xylene	ND	1.0	
100-42-5	Styrene	ND	1.0	
75-25-2	Bromoform	ND	1.0	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	
98-82-8	Isopropylbenzene	ND	1.0	
108-86-1	Bromobenzene	ND	1.0	
96-18-4	1,2,3-Trichloropropane	ND	1.0	
103-65-1	N-Propylbenzene	ND	1.0	
95-49-8	2-Chlorotoluene	ND	1.0	
106-43-4	4-Chlorotoluene	ND	1.0	
98-06-6	Tert-Butylbenzene	ND	1.0	
108-67-8	1,3,5-Trimethylbenzene	ND	1.0	
95-63-6	1,2,4-Trimethylbenzene	ND	1.0	
135-98-8	Sec-Butylbenzene	ND	1.0	
541-73-1	1,3-Dichlorobenzene	ND	1.0	
99-87-6	Para-Isopropyltoluene	ND	1.0	
106-46-7	1,4-Dichlorobenzene	ND	1.0	
95-50-1	1,2-Dichlorobenzene	ND	1.0	
104-51-8	N-Butylbenzene	ND	1.0	
96-12-8	1,2-Dibromo-3-Chloropropane	ND	1.0	
120-82-1	1,2,4-Trichlorobenzene	ND	1.0	
87-68-3	Hexachlorobutadiene	ND	1.0	
91-20-3	Naphthalene	ND	1.0	
87-61-6	1,2,3-Trichlorobenzene	ND	1.0	

Surrogate Compounds	Recoveries (%)	QC Ranges
1,2-Dichloroethane-D4	109	74 - 136
Toluene-D8	97	85 - 118
1,4-Bromofluorobenzene	90	78 - 111

New Bedford Harbor- New Bedford, MA

VOAs in Water

Client Sample ID:	MW-06	Lab Sample ID:	AB71241
Date of Collection:	11/15/2017	Matrix:	GW
Date of Preparation:	11/16/2017	Amount Prepared:	5 mL
Date of Analysis:	11/16/2017	Percent Solids:	N/A
Dry Weight Prepared:	N/A	Extract Dilution:	1
Wet Weight Prepared:	N/A	pH:	<2
Volume Extracted:	5 mL	GPC Factor:	N/A
Final Volume:	N/A		

CAS Number	Compound	Concentration ug/L	RL ug/L	Qualifier
74-87-3	Chloromethane	ND	1.0	
75-01-4	Vinyl Chloride	ND	1.0	
74-83-9	Bromomethane	ND	1.0	
75-00-3	Chloroethane	ND	1.0	
75-69-4	Trichlorofluoromethane	ND	1.0	
60-29-7	Ethyl Ether	ND	1.0	
67-64-1	2-Propanone (acetone)	ND	1.0	
76-13-1	1,1,2-Trichloro-1,2,2-Trifluoroetha	ND	1.0	
75-35-4	1,1-Dichloroethylene	ND	1.0	
75-15-0	Carbon Disulfide	ND	1.0	
75-71-8	Dichlorodifluoromethane	ND	1.0	
75-09-2	Methylene Chloride	ND	1.0	
107-13-1	Acrylonitrile	ND	1.0	
1634-04-4	Methyl-t-Butyl Ether	ND	1.0	
156-60-5	Trans-1,2-Dichloroethylene	ND	1.0	
75-34-3	1,1-dichloroethane	ND	1.0	
108-05-4	Vinyl Acetate	ND	1.0	
78-93-3	2-Butanone (MEK)	ND	1.0	
594-20-7	2,2-Dichloropropane	ND	1.0	
156-59-2	cis-1,2-Dichloroethylene	ND	1.0	
67-66-3	Chloroform	ND	1.0	
74-97-5	Bromochloromethane	ND	1.0	
109-99-9	Tetrahydrofuran	ND	1.0	
71-55-6	1,1,1-Trichloroethane	ND	1.0	
107-06-2	1,2-Dichloroethane	ND	1.0	
56-23-5	Carbon tetrachloride	ND	1.0	
71-43-2	Benzene	ND	1.0	
10061-01-5	c-1,3-dichloropropene	ND	1.0	
108-88-3	Toluene	ND	1.0	
10061-02-6	t-1,3-Dichloropropene	ND	1.0	
79-00-5	1,1,2-Trichloroethane	ND	1.0	
124-48-1	Dibromochloromethane	ND	1.0	
108-90-7	Chlorobenzene	ND	1.0	
563-58-6	1,1-Dichloropropene	ND	1.0	
79-01-6	Trichloroethylene	ND	1.0	
78-87-5	1,2-Dichloropropane	ND	1.0	
75-27-4	Bromodichloromethane	ND	1.0	
74-95-3	Dibromomethane	ND	1.0	
108-10-1	4-Methyl-2-Pentanone(MIBK)	ND	1.0	
142-28-9	1,3-Dichloropropane	ND	1.0	
127-18-4	Tetrachloroethylene	ND	1.0	
106-93-4	1,2-Dibromoethane	ND	1.0	

New Bedford Harbor- New Bedford, MA

VOAs in Water

Client Sample ID:	MW-06	Lab Sample ID:	AB71241
Date of Collection:	11/15/2017	Matrix:	GW
Date of Preparation:	11/16/2017	Amount Prepared:	5 mL
Date of Analysis:	11/16/2017	Percent Solids:	N/A
Dry Weight Prepared:	N/A	Extract Dilution:	1
Wet Weight Prepared:	N/A	pH:	<2
Volume Extracted:	5 mL	GPC Factor:	N/A
Final Volume:	N/A		

CAS Number	Compound	Concentration ug/L	RL ug/L	Qualifier
591-78-6	2-Hexanone	ND	1.0	
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0	
100-41-4	Ethylbenzene	ND	1.0	
108-38-3/106-42-3	M/P Xylene	ND	2.0	
95-47-6	Ortho Xylene	ND	1.0	
100-42-5	Styrene	ND	1.0	
75-25-2	Bromoform	ND	1.0	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	
98-82-8	Isopropylbenzene	ND	1.0	
108-86-1	Bromobenzene	ND	1.0	
96-18-4	1,2,3-Trichloropropane	ND	1.0	
103-65-1	N-Propylbenzene	ND	1.0	
95-49-8	2-Chlorotoluene	ND	1.0	
106-43-4	4-Chlorotoluene	ND	1.0	
98-06-6	Tert-Butylbenzene	ND	1.0	
108-67-8	1,3,5-Trimethylbenzene	ND	1.0	
95-63-6	1,2,4-Trimethylbenzene	ND	1.0	
135-98-8	Sec-Butylbenzene	ND	1.0	
541-73-1	1,3-Dichlorobenzene	ND	1.0	
99-87-6	Para-Isopropyltoluene	ND	1.0	
106-46-7	1,4-Dichlorobenzene	ND	1.0	
95-50-1	1,2-Dichlorobenzene	ND	1.0	
104-51-8	N-Butylbenzene	ND	1.0	
96-12-8	1,2-Dibromo-3-Chloropropane	ND	1.0	
120-82-1	1,2,4-Trichlorobenzene	ND	1.0	
87-68-3	Hexachlorobutadiene	ND	1.0	
91-20-3	Naphthalene	ND	1.0	
87-61-6	1,2,3-Trichlorobenzene	ND	1.0	

Surrogate Compounds	Recoveries (%)	QC Ranges
1,2-Dichloroethane-D4	112	74 - 136
Toluene-D8	96	85 - 118
1,4-Bromofluorobenzene	89	78 - 111

New Bedford Harbor- New Bedford, MA

VOAs in Water

Client Sample ID:	Trip Voa's	Lab Sample ID:	AB71242
Date of Collection:	11/14/2017	Matrix:	GW
Date of Preparation:	11/16/2017	Amount Prepared:	5 mL
Date of Analysis:	11/16/2017	Percent Solids:	N/A
Dry Weight Prepared:	N/A	Extract Dilution:	1
Wet Weight Prepared:	N/A	pH:	<2
Volume Extracted:	5 mL	GPC Factor:	N/A
Final Volume:	N/A		

CAS Number	Compound	Concentration ug/L	RL ug/L	Qualifier
74-87-3	Chloromethane	ND	1.0	
75-01-4	Vinyl Chloride	ND	1.0	
74-83-9	Bromomethane	ND	1.0	
75-00-3	Chloroethane	ND	1.0	
75-69-4	Trichlorofluoromethane	ND	1.0	
60-29-7	Ethyl Ether	ND	1.0	
67-64-1	2-Propanone (acetone)	ND	1.0	
76-13-1	1,1,2-Trichloro-1,2,2-Trifluoroetha	ND	1.0	
75-35-4	1,1-Dichloroethylene	ND	1.0	
75-15-0	Carbon Disulfide	ND	1.0	
75-71-8	Dichlorodifluoromethane	ND	1.0	
75-09-2	Methylene Chloride	ND	1.0	
107-13-1	Acrylonitrile	ND	1.0	
1634-04-4	Methyl-t-Butyl Ether	ND	1.0	
156-60-5	Trans-1,2-Dichloroethylene	ND	1.0	
75-34-3	1,1-dichloroethane	ND	1.0	
108-05-4	Vinyl Acetate	ND	1.0	
78-93-3	2-Butanone (MEK)	ND	1.0	
594-20-7	2,2-Dichloropropane	ND	1.0	
156-59-2	cis-1,2-Dichloroethylene	ND	1.0	
67-66-3	Chloroform	ND	1.0	
74-97-5	Bromochloromethane	ND	1.0	
109-99-9	Tetrahydrofuran	ND	1.0	
71-55-6	1,1,1-Trichloroethane	ND	1.0	
107-06-2	1,2-Dichloroethane	ND	1.0	
56-23-5	Carbon tetrachloride	ND	1.0	
71-43-2	Benzene	ND	1.0	
10061-01-5	c-1,3-dichloropropene	ND	1.0	
108-88-3	Toluene	ND	1.0	
10061-02-6	t-1,3-Dichloropropene	ND	1.0	
79-00-5	1,1,2-Trichloroethane	ND	1.0	
124-48-1	Dibromochloromethane	ND	1.0	
108-90-7	Chlorobenzene	ND	1.0	
563-58-6	1,1-Dichloropropene	ND	1.0	
79-01-6	Trichloroethylene	ND	1.0	
78-87-5	1,2-Dichloropropane	ND	1.0	
75-27-4	Bromodichloromethane	ND	1.0	
74-95-3	Dibromomethane	ND	1.0	
108-10-1	4-Methyl-2-Pentanone(MIBK)	ND	1.0	
142-28-9	1,3-Dichloropropane	ND	1.0	
127-18-4	Tetrachloroethylene	ND	1.0	
106-93-4	1,2-Dibromoethane	ND	1.0	

New Bedford Harbor- New Bedford, MA

VOAs in Water

Client Sample ID:	Trip Voa's	Lab Sample ID:	AB71242
Date of Collection:	11/14/2017	Matrix:	GW
Date of Preparation:	11/16/2017	Amount Prepared:	5 mL
Date of Analysis:	11/16/2017	Percent Solids:	N/A
Dry Weight Prepared:	N/A	Extract Dilution:	1
Wet Weight Prepared:	N/A	pH:	<2
Volume Extracted:	5 mL	GPC Factor:	N/A
Final Volume:	N/A		

CAS Number	Compound	Concentration ug/L	RL ug/L	Qualifier
591-78-6	2-Hexanone	ND	1.0	
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0	
100-41-4	Ethylbenzene	ND	1.0	
108-38-3/106-42-3	M/P Xylene	ND	2.0	
95-47-6	Ortho Xylene	ND	1.0	
100-42-5	Styrene	ND	1.0	
75-25-2	Bromoform	ND	1.0	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	
98-82-8	Isopropylbenzene	ND	1.0	
108-86-1	Bromobenzene	ND	1.0	
96-18-4	1,2,3-Trichloropropane	ND	1.0	
103-65-1	N-Propylbenzene	ND	1.0	
95-49-8	2-Chlorotoluene	ND	1.0	
106-43-4	4-Chlorotoluene	ND	1.0	
98-06-6	Tert-Butylbenzene	ND	1.0	
108-67-8	1,3,5-Trimethylbenzene	ND	1.0	
95-63-6	1,2,4-Trimethylbenzene	ND	1.0	
135-98-8	Sec-Butylbenzene	ND	1.0	
541-73-1	1,3-Dichlorobenzene	ND	1.0	
99-87-6	Para-Isopropyltoluene	ND	1.0	
106-46-7	1,4-Dichlorobenzene	ND	1.0	
95-50-1	1,2-Dichlorobenzene	ND	1.0	
104-51-8	N-Butylbenzene	ND	1.0	
96-12-8	1,2-Dibromo-3-Chloropropane	ND	1.0	
120-82-1	1,2,4-Trichlorobenzene	ND	1.0	
87-68-3	Hexachlorobutadiene	ND	1.0	
91-20-3	Naphthalene	ND	1.0	
87-61-6	1,2,3-Trichlorobenzene	ND	1.0	

Surrogate Compounds	Recoveries (%)	QC Ranges
1,2-Dichloroethane-D4	112	74 - 136
Toluene-D8	96	85 - 118
1,4-Bromofluorobenzene	89	78 - 111

New Bedford Harbor- New Bedford, MA

MATRIX SPIKE (MS) RECOVERY

Sample ID: AB71235

PARAMETER	SPIKE ADDED ug/L	SAMPLE CONCENTRATION ug/L	MS CONCENTRATION ug/L	MS % REC	QC LIMITS (% REC)
1,1,1,2-Tetrachloroethane	20.0	ND	21.0	105	67 - 129
1,1,1-Trichloroethane	20.0	ND	22.0	110	75 - 139
1,1,2,2-Tetrachloroethane	20.0	ND	21.0	105	50 - 142
1,1,2-Trichloro-1,2,2-Trifluoroetha	20.0	ND	21.0	105	55 - 135
1,1,2-Trichloroethane	20.0	ND	21.0	105	62 - 142
1,1-Dichloroethylene	20.0	ND	21.0	105	80 - 138
1,1-Dichloropropene	20.0	ND	21.0	105	73 - 131
1,1-dichloroethane	20.0	ND	22.0	110	61 - 152
1,2,3-Trichlorobenzene	20.0	ND	20.0	100	49 - 143
1,2,3-Trichloropropane	20.0	ND	21.0	105	53 - 135
1,2,4-Trichlorobenzene	20.0	ND	21.0	105	63 - 131
1,2,4-Trimethylbenzene	20.0	ND	21.0	105	79 - 142
1,2-Dibromo-3-Chloropropane	20.0	ND	20.0	100	28 - 122
1,2-Dibromoethane	20.0	ND	21.0	105	53 - 139
1,2-Dichlorobenzene	20.0	ND	20.0	100	74 - 129
1,2-Dichloroethane	20.0	ND	21.0	105	61 - 142
1,2-Dichloropropane	20.0	ND	21.0	105	71 - 126
1,3,5-Trimethylbenzene	20.0	ND	22.0	110	77 - 140
1,3-Dichlorobenzene	20.0	ND	20.0	100	78 - 127
1,3-Dichloropropane	20.0	ND	21.0	105	63 - 130
1,4-Dichlorobenzene	20.0	ND	19.0	95	72 - 131
2,2-Dichloropropane	20.0	ND	20.0	100	50 - 139
2-Butanone (MEK)	20.0	ND	19.0	95	29 - 163
2-Chlorotoluene	20.0	ND	21.0	105	74 - 134
2-Hexanone	20.0	ND	19.0	95	36 - 141
2-Propanone (acetone)	20.0	ND	15.0	75	29 - 164
4-Chlorotoluene	20.0	ND	21.0	105	68 - 141
4-Methyl-2-Pentanone(MIBK)	20.0	ND	19.0	95	35 - 139
Acrylonitrile	20.0	ND	23.0	115	42 - 150
Benzene	20.0	ND	21.0	105	78 - 134
Bromobenzene	20.0	ND	20.0	100	76 - 126
Bromochloromethane	20.0	ND	21.0	105	62 - 140
Bromodichloromethane	20.0	ND	21.0	105	62 - 133
Bromoform	20.0	ND	20.0	100	31 - 133
Bromomethane	20.0	ND	20.0	100	58 - 148
Carbon Disulfide	20.0	ND	22.0	110	66 - 135
Carbon tetrachloride	20.0	ND	21.0	105	62 - 146
Chlorobenzene	20.0	ND	21.0	105	74 - 139
Chloroethane	20.0	ND	21.0	105	65 - 145
Chloroform	20.0	ND	21.0	105	60 - 144
Chloromethane	20.0	ND	21.0	105	58 - 134
Dibromochloromethane	20.0	ND	21.0	105	34 - 140
Dibromomethane	20.0	ND	21.0	105	67 - 125
Dichlorodifluoromethane	20.0	ND	20.0	100	30 - 132
Ethyl Ether	20.0	ND	23.0	115	58 - 145
Ethylbenzene	20.0	ND	21.0	105	73 - 143
Hexachlorobutadiene	20.0	ND	19.0	95	56 - 144

New Bedford Harbor- New Bedford, MA

MATRIX SPIKE (MS) RECOVERY

Sample ID: AB71235

PARAMETER	SPIKE ADDED ug/L	SAMPLE CONCENTRATION ug/L	MS CONCENTRATION ug/L	MS % REC	QC LIMITS (% REC)
Isopropylbenzene	20.0	ND	22.0	110	73 - 139
M/P Xylene	40.0	ND	43.0	108	79 - 136
Methyl-t-Butyl Ether	20.0	ND	22.0	110	50 - 144
Methylene Chloride	20.0	ND	22.0	110	70 - 144
N-Butylbenzene	20.0	ND	22.0	110	68 - 143
N-Propylbenzene	20.0	ND	22.0	110	72 - 149
Naphthalene	20.0	ND	19.0	95	33 - 154
Ortho Xylene	20.0	ND	22.0	110	80 - 129
Para-Isopropyltoluene	20.0	ND	21.0	105	71 - 140
Sec-Butylbenzene	20.0	ND	22.0	110	75 - 148
Styrene	20.0	ND	20.0	100	61 - 148
Tert-Butylbenzene	20.0	ND	22.0	110	71 - 139
Tetrachloroethylene	20.0	ND	19.0	95	45 - 145
Tetrahydrofuran	20.0	ND	24.0	120	37 - 143
Toluene	20.0	ND	21.0	105	77 - 142
Trans-1,2-Dichloroethylene	20.0	ND	21.0	105	79 - 139
Trichloroethylene	20.0	ND	20.0	100	65 - 143
Trichlorofluoromethane	20.0	ND	21.0	105	58 - 161
Vinyl Acetate	20.0	ND	18.0	90	22 - 173
Vinyl Chloride	20.0	ND	19.0	95	68 - 139
c-1,3-dichloropropene	20.0	ND	19.0	95	51 - 144
cis-1,2-Dichloroethylene	20.0	ND	22.0	110	59 - 154
t-1,3-Dichloropropene	20.0	ND	19.0	95	47 - 145

New Bedford Harbor- New Bedford, MA

MATRIX SPIKE DUPLICATE (MSD) RECOVERY

Sample ID:AB71235

PARAMETER	MSD SPIKE ADDED	MSD CONCENTRATION ug/L	MSD % REC	RPD %	QC LIMITS RPD
1,1,1,2-Tetrachloroethane	20.0	20.0	100	4.88	40
1,1,1-Trichloroethane	20.0	21.0	105	4.65	16
1,1,2,2-Tetrachloroethane	20.0	21.0	105	0.00	40
1,1,2-Trichloro-1,2,2-Trifluoroetha	20.0	20.0	100	4.88	40
1,1,2-Trichloroethane	20.0	21.0	105	0.00	40
1,1-Dichloroethylene	20.0	20.0	100	4.88	35
1,1-Dichloropropene	20.0	21.0	105	0.00	40
1,1-dichloroethane	20.0	21.0	105	4.65	40
1,2,3-Trichlorobenzene	20.0	21.0	105	4.88	40
1,2,3-Trichloropropane	20.0	21.0	105	0.00	40
1,2,4-Trichlorobenzene	20.0	21.0	105	0.00	40
1,2,4-Trimethylbenzene	20.0	21.0	105	0.00	40
1,2-Dibromo-3-Chloropropane	20.0	19.0	95	5.13	40
1,2-Dibromoethane	20.0	21.0	105	0.00	40
1,2-Dichlorobenzene	20.0	20.0	100	0.00	40
1,2-Dichloroethane	20.0	21.0	105	0.00	23
1,2-Dichloropropane	20.0	21.0	105	0.00	40
1,3,5-Trimethylbenzene	20.0	21.0	105	4.65	40
1,3-Dichlorobenzene	20.0	20.0	100	0.00	40
1,3-Dichloropropane	20.0	21.0	105	0.00	40
1,4-Dichlorobenzene	20.0	19.0	95	0.00	21
2,2-Dichloropropane	20.0	20.0	100	0.00	40
2-Butanone (MEK)	20.0	20.0	100	5.13	40
2-Chlorotoluene	20.0	20.0	100	4.88	40
2-Hexanone	20.0	19.0	95	0.00	40
2-Propanone (acetone)	20.0	14.0	70	6.90	40
4-Chlorotoluene	20.0	20.0	100	4.88	40
4-Methyl-2-Pentanone(MIBK)	20.0	20.0	100	5.13	40
Acrylonitrile	20.0	23.0	115	0.00	40
Benzene	20.0	20.0	100	4.88	14
Bromobenzene	20.0	19.0	95	5.13	40
Bromochloromethane	20.0	20.0	100	4.88	40
Bromodichloromethane	20.0	21.0	105	0.00	21
Bromoform	20.0	20.0	100	0.00	40
Bromomethane	20.0	19.0	95	5.13	40
Carbon Disulfide	20.0	21.0	105	4.65	40
Carbon tetrachloride	20.0	21.0	105	0.00	19
Chlorobenzene	20.0	20.0	100	4.88	40
Chloroethane	20.0	19.0	95	10.0	40
Chloroform	20.0	21.0	105	0.00	16
Chloromethane	20.0	20.0	100	4.88	40
Dibromochloromethane	20.0	21.0	105	0.00	36
Dibromomethane	20.0	20.0	100	4.88	40
Dichlorodifluoromethane	20.0	19.0	95	5.13	40
Ethyl Ether	20.0	23.0	115	0.00	40
Ethylbenzene	20.0	21.0	105	0.00	40
Hexachlorobutadiene	20.0	19.0	95	0.00	40
Isopropylbenzene	20.0	21.0	105	4.65	40

New Bedford Harbor- New Bedford, MA

MATRIX SPIKE DUPLICATE (MSD) RECOVERY

Sample ID:AB71235

PARAMETER	MSD SPIKE ADDED	MSD CONCENTRATION ug/L	MSD % REC	RPD %	QC LIMITS RPD
M/P Xylene	40.0	41.0	102	5.71	40
Methyl-t-Butyl Ether	20.0	22.0	110	0.00	40
Methylene Chloride	20.0	21.0	105	4.65	40
N-Butylbenzene	20.0	21.0	105	4.65	40
N-Propylbenzene	20.0	21.0	105	4.65	40
Naphthalene	20.0	20.0	100	5.13	40
Ortho Xylene	20.0	21.0	105	4.65	40
Para-Isopropyltoluene	20.0	20.0	100	4.88	40
Sec-Butylbenzene	20.0	21.0	105	4.65	40
Styrene	20.0	20.0	100	0.00	40
Tert-Butylbenzene	20.0	21.0	105	4.65	40
Tetrachloroethylene	20.0	18.0	90	5.41	40
Tetrahydrofuran	20.0	24.0	120	0.00	40
Toluene	20.0	20.0	100	4.88	40
Trans-1,2-Dichloroethylene	20.0	20.0	100	4.88	40
Trichloroethylene	20.0	20.0	100	0.00	22
Trichlorofluoromethane	20.0	20.0	100	4.88	40
Vinyl Acetate	20.0	19.0	95	5.41	40
Vinyl Chloride	20.0	18.0	90	5.41	19
c-1,3-dichloropropene	20.0	19.0	95	0.00	40
cis-1,2-Dichloroethylene	20.0	21.0	105	4.65	40
t-1,3-Dichloropropene	20.0	19.0	95	0.00	40

New Bedford Harbor- New Bedford, MA

Laboratory Duplicate Results

Sample ID: AB71235

PARAMETER	SAMPLE RESULT ug/L	SAMPLE DUPLICATE RESULT ug/L	PRECISION RPD %	QC LIMITS
1,1,1,2-Tetrachloroethane	ND	ND	NC	30
1,1,1-Trichloroethane	ND	ND	NC	30
1,1,2,2-Tetrachloroethane	ND	ND	NC	30
1,1,2-Trichloro-1,2,2-Trifluoroetha	ND	ND	NC	30
1,1,2-Trichloroethane	ND	ND	NC	30
1,1-Dichloroethylene	ND	ND	NC	30
1,1-Dichloropropene	ND	ND	NC	30
1,1-dichloroethane	ND	ND	NC	30
1,2,3-Trichlorobenzene	ND	ND	NC	30
1,2,3-Trichloropropane	ND	ND	NC	30
1,2,4-Trichlorobenzene	ND	ND	NC	30
1,2,4-Trimethylbenzene	ND	ND	NC	30
1,2-Dibromo-3-Chloropropane	ND	ND	NC	30
1,2-Dibromoethane	ND	ND	NC	30
1,2-Dichlorobenzene	ND	ND	NC	30
1,2-Dichloroethane	ND	ND	NC	30
1,2-Dichloropropane	ND	ND	NC	30
1,3,5-Trimethylbenzene	ND	ND	NC	30
1,3-Dichlorobenzene	ND	ND	NC	30
1,3-Dichloropropane	ND	ND	NC	30
1,4-Dichlorobenzene	ND	ND	NC	30
2,2-Dichloropropane	ND	ND	NC	30
2-Butanone (MEK)	ND	ND	NC	30
2-Chlorotoluene	ND	ND	NC	30
2-Hexanone	ND	ND	NC	30
2-Propanone (acetone)	ND	ND	NC	30
4-Chlorotoluene	ND	ND	NC	30
4-Methyl-2-Pentanone(MIBK)	ND	ND	NC	30
Acrylonitrile	ND	ND	NC	30
Benzene	ND	ND	NC	30
Bromobenzene	ND	ND	NC	30
Bromochloromethane	ND	ND	NC	30
Bromodichloromethane	ND	ND	NC	30
Bromoform	ND	ND	NC	30
Bromomethane	ND	ND	NC	30
Carbon Disulfide	ND	ND	NC	30
Carbon tetrachloride	ND	ND	NC	30
Chlorobenzene	ND	ND	NC	30
Chloroethane	ND	ND	NC	30
Chloroform	ND	ND	NC	30
Chloromethane	ND	ND	NC	30
Dibromochloromethane	ND	ND	NC	30
Dibromomethane	ND	ND	NC	30
Dichlorodifluoromethane	ND	ND	NC	30
Ethyl Ether	ND	ND	NC	30
Ethylbenzene	ND	ND	NC	30
Hexachlorobutadiene	ND	ND	NC	30
Isopropylbenzene	ND	ND	NC	30
M/P Xylene	ND	ND	NC	30
Methyl-t-Butyl Ether	ND	ND	NC	30

New Bedford Harbor- New Bedford, MA

Laboratory Duplicate Results

Sample ID: AB71235

PARAMETER	SAMPLE RESULT ug/L	SAMPLE DUPLICATE RESULT ug/L	PRECISION RPD %	QC LIMITS
Methylene Chloride	ND	ND	NC	30
N-Butylbenzene	ND	ND	NC	30
N-Propylbenzene	ND	ND	NC	30
Naphthalene	ND	ND	NC	30
Ortho Xylene	ND	ND	NC	30
Para-Isopropyltoluene	ND	ND	NC	30
Sec-Butylbenzene	ND	ND	NC	30
Styrene	ND	ND	NC	30
Tert-Butylbenzene	ND	ND	NC	30
Tetrachloroethylene	ND	ND	NC	30
Tetrahydrofuran	ND	ND	NC	30
Toluene	ND	ND	NC	30
Trans-1,2-Dichloroethylene	ND	ND	NC	30
Trichloroethylene	ND	ND	NC	30
Trichlorofluoromethane	ND	ND	NC	30
Vinyl Acetate	ND	ND	NC	30
Vinyl Chloride	ND	ND	NC	30
c-1,3-dichloropropene	ND	ND	NC	30
cis-1,2-Dichloroethylene	ND	ND	NC	30
t-1,3-Dichloropropene	ND	ND	NC	30

New Bedford Harbor- New Bedford, MA

Laboratory Fortified Blank (LFB) Results

PARAMETER	LFB AMOUNT SPIKED ug/mL	LFB RESULT ug/mL	LFB RECOVERY %	QC LIMITS %
1,1,1,2-Tetrachloroethane	20	20.0	100	79 - 136
1,1,1-Trichloroethane	20	20.0	100	75 - 146
1,1,2,2-Tetrachloroethane	20	20.0	100	62 - 141
1,1,2-Trichloro-1,2,2-Trifluoroeth	20	20.0	100	56 - 130
1,1,2-Trichloroethane	20	20.0	100	75 - 138
1,1-Dichloroethylene	20	20.0	100	75 - 136
1,1-Dichloropropene	20	20.0	100	77 - 137
1,1-dichloroethane	20	20.0	100	76 - 142
1,2,3-Trichlorobenzene	20	19.0	95	64 - 143
1,2,3-Trichloropropane	20	19.0	95	66 - 133
1,2,4-Trichlorobenzene	20	20.0	100	80 - 131
1,2,4-Trimethylbenzene	20	21.0	105	74 - 155
1,2-Dibromo-3-Chloropropane	20	18.0	90	37 - 139
1,2-Dibromoethane	20	20.0	100	72 - 135
1,2-Dichlorobenzene	20	19.0	95	85 - 128
1,2-Dichloroethane	20	20.0	100	74 - 138
1,2-Dichloropropane	20	20.0	100	83 - 124
1,3,5-Trimethylbenzene	20	21.0	105	80 - 145
1,3-Dichlorobenzene	20	20.0	100	84 - 130
1,3-Dichloropropane	20	20.0	100	77 - 129
1,4-Dichlorobenzene	20	19.0	95	82 - 128
2,2-Dichloropropane	20	19.0	95	32 - 171
2-Butanone (MEK)	20	23.0	115	38 - 179
2-Chlorotoluene	20	20.0	100	78 - 134
2-Hexanone	20	19.0	95	45 - 158
2-Propanone (acetone)	20	22.0	110	14 - 209
4-Chlorotoluene	20	20.0	100	75 - 144
4-Methyl-2-Pentanone(MIBK)	20	19.0	95	40 - 144
Acrylonitrile	20	22.0	110	52 - 154
Benzene	20	20.0	100	83 - 130
Bromobenzene	20	19.0	95	85 - 126
Bromochloromethane	20	19.0	95	69 - 137
Bromodichloromethane	20	20.0	100	70 - 143
Bromoform	20	19.0	95	51 - 136
Bromomethane	20	18.0	90	65 - 140
Carbon Disulfide	20	21.0	105	68 - 140
Carbon tetrachloride	20	21.0	105	70 - 144
Chlorobenzene	20	20.0	100	84 - 131
Chloroethane	20	20.0	100	70 - 134
Chloroform	20	20.0	100	76 - 141
Chloromethane	20	19.0	95	63 - 123
Dibromochloromethane	20	20.0	100	39 - 154
Dibromomethane	20	20.0	100	79 - 124
Dichlorodifluoromethane	20	19.0	95	37 - 117
Ethyl Ether	20	22.0	110	67 - 140
Ethylbenzene	20	20.0	100	81 - 133
Hexachlorobutadiene	20	18.0	90	68 - 146
Isopropylbenzene	20	21.0	105	78 - 137
M/P Xylene	40	42.0	105	68 - 155
Methyl-t-Butyl Ether	20	21.0	105	63 - 144
Methylene Chloride	20	20.0	100	75 - 140
N-Butylbenzene	20	20.0	100	69 - 147
N-Propylbenzene	20	21.0	105	76 - 138

New Bedford Harbor- New Bedford, MA

Laboratory Fortified Blank (LFB) Results

PARAMETER	LFB AMOUNT SPIKED ug/mL	LFB RESULT ug/mL	LFB RECOVERY %	QC LIMITS %
Naphthalene	20	19.0	95	53 - 155
Ortho Xylene	20	21.0	105	85 - 135
Para-Isopropyltoluene	20	20.0	100	77 - 141
Sec-Butylbenzene	20	21.0	105	80 - 141
Styrene	20	20.0	100	82 - 139
Tert-Butylbenzene	20	21.0	105	75 - 144
Tetrachloroethylene	20	19.0	95	32 - 173
Tetrahydrofuran	20	22.0	110	47 - 149
Toluene	20	20.0	100	85 - 134
Trans-1,2-Dichloroethylene	20	20.0	100	80 - 138
Trichloroethylene	20	20.0	100	76 - 135
Trichlorofluoromethane	20	20.0	100	60 - 149
Vinyl Acetate	20	17.0	85	38 - 187
Vinyl Chloride	20	19.0	95	66 - 133
c-1,3-dichloropropene	20	19.0	95	68 - 149
cis-1,2-Dichloroethylene	20	20.0	100	76 - 143
t-1,3-Dichloropropene	20	19.0	95	62 - 160

Comments:

New Bedford Harbor- New Bedford, MA

LABORATORY FORTIFIED DUPLICATE (LFB Dup) RECOVERY

COMPOUND	LFB Dup CONCENTRATION ug/L	LFB Dup RECOVERY %	RPD %	QC LIMITS RPD
1,1,1,2-Tetrachloroethane	21	105	5	50
1,1,1-Trichloroethane	21	105	5	50
1,1,2,2-Tetrachloroethane	22	110	10	50
1,1,2-Trichloro-1,2,2-Trifluoroetha	20	100	0	50
1,1,2-Trichloroethane	21	105	5	50
1,1-Dichloroethylene	21	105	5	52
1,1-Dichloropropene	21	105	5	50
1,1-dichloroethane	21	105	5	50
1,2,3-Trichlorobenzene	24	120	23	50
1,2,3-Trichloropropane	21	105	10	50
1,2,4-Trichlorobenzene	23	115	14	50
1,2,4-Trimethylbenzene	21	105	0	50
1,2-Dibromo-3-Chloropropane	20	100	11	50
1,2-Dibromoethane	21	105	5	50
1,2-Dichlorobenzene	20	100	5	50
1,2-Dichloroethane	21	105	5	50
1,2-Dichloropropane	21	105	5	50
1,3,5-Trimethylbenzene	22	110	5	50
1,3-Dichlorobenzene	20	100	0	50
1,3-Dichloropropane	21	105	5	50
1,4-Dichlorobenzene	19	95	0	50
2,2-Dichloropropane	21	105	10	50
2-Butanone (MEK)	26	130	12	50
2-Chlorotoluene	20	100	0	50
2-Hexanone	22	110	15	50
2-Propanone (acetone)	24	120	9	50
4-Chlorotoluene	21	105	5	50
4-Methyl-2-Pentanone(MIBK)	20	100	5	50
Acrylonitrile	24	120	9	50
Benzene	21	105	5	50
Bromobenzene	20	100	5	50
Bromochloromethane	20	100	5	50
Bromodichloromethane	21	105	5	50
Bromoform	20	100	5	50
Bromomethane	18	90	0	50
Carbon Disulfide	21	105	0	50
Carbon tetrachloride	21	105	0	50
Chlorobenzene	21	105	5	34
Chloroethane	20	100	0	50
Chloroform	21	105	5	50
Chloromethane	21	105	10	50
Dibromochloromethane	21	105	5	50
Dibromomethane	21	105	5	50
Dichlorodifluoromethane	19	95	0	50
Ethyl Ether	23	115	4	50
Ethylbenzene	21	105	5	50
Hexachlorobutadiene	21	105	15	50
Isopropylbenzene	22	110	5	50
M/P Xylene	43	108	2	50
Methyl-t-Butyl Ether	22	110	5	50
Methylene Chloride	21	105	5	50

New Bedford Harbor- New Bedford, MA

LABORATORY FORTIFIED DUPLICATE (LFB Dup) RECOVERY

COMPOUND	LFB Dup CONCENTRATION ug/L	LFB Dup RECOVERY %	RPD %	QC LIMITS RPD
N-Butylbenzene	22	110	10	50
N-Propylbenzene	22	110	5	50
Naphthalene	22	110	15	50
Ortho Xylene	22	110	5	50
Para-Isopropyltoluene	21	105	5	50
Sec-Butylbenzene	22	110	5	50
Styrene	20	100	0	50
Tert-Butylbenzene	22	110	5	50
Tetrachloroethylene	19	95	0	50
Tetrahydrofuran	25	125	13	50
Toluene	21	105	5	50
Trans-1,2-Dichloroethylene	21	105	5	50
Trichloroethylene	20	100	0	27
Trichlorofluoromethane	21	105	5	50
Vinyl Acetate	19	95	11	50
Vinyl Chloride	19	95	0	50
c-1,3-dichloropropene	20	100	5	50
cis-1,2-Dichloroethylene	21	105	5	50
t-1,3-Dichloropropene	20	100	5	50

Samples in Batch: AB71235, AB71236, AB71237, AB71238, AB71239, AB71240, AB71241, AB71242

ENVIRONMENTAL PROTECTION AGENCY

REGION 1

CHAIN OF CUSTODY RECORD

PROJ. NO.	PROJECT NAME
17110029	New Bedford Harbor - Groundwater

SAMPLERS: (Signature) W. Semmes

STA. NO.	DATE	TIME	COMP.	GRAB	STATION LOCATION	NO. OF CONTAINERS	PCB's ($PCBW) 2-1L	Metals (Total) 1-250mL	Metals (Dissolved) 1-250mL	TSS (1L)	VOA (4 VOA vial) 40mL		REMARKS
	11/14/17	1355		X	MW-7A	9	2	1	1	1	4		VOA (HCl pres pH<2), Metals (HNO3, pH<2)
	11/14/17	1640		X	MW-01	9	2	1	1	1	4		
	11/14/17	1640		X	MW-01D	9	2	1	1	1	4		
	11/15/17	1050		X	MW-4A	9	2	1	1	1	4		
	11/15/17	1150		X	MW-05	9	2	1	1	1	4		
	11/15/17	1525		X	MW-03	9	2	1	1	1	4		
	11/15/17	1535		X	MW-06	10	2	1	1	1	5		extra 40 ml VOA vial for VOC
	11/14/17			X	Trips VOA's	4					4		Trip Blanks

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
	11/16/17 1028				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature) ESAT	Date / Time	Remarks	
			11/16/17 10:28		

Remarks:
17110029 $PCBW
17110029 $METW_PE
17110029 $DMETW_PE
17110029 VOAMW
17110029 TSS

Distribution: Original Accompanies Shipment; Copy to Coordinator Field Files