VERTEX®

The Vertex Companies, Inc.
One Congress Street, 10th Floor
Boston, MA 02114
PHONE 617.275.5407 | FAX 617.830.0298
www.vertexeng.com

September 26, 2017

Ms. Shauna Little
U.S. Environmental Protection Agency
Office of Ecosystem Protection
EPA/OEP RGP Applications Coordinator
5 Post Office Square – Suite 100 (OEP06-01)
Boston, MA 02109-3912

RE: Bulfinch WPB1 Owner LLC
Remediation General Permit
Boston, Massachusetts
Remediation General Permit (RGP) Notice of Intent

Dear Ms. Little,

The Vertex Companies, Inc. (VERTEX) is pleased to submit this Notice of Intent (NOI) for a National Pollutant Discharge Elimination System (NPDES) General Permit For the discharge of water under a Massachusetts Remediation General Permit (RGP) (MAG910000) on behalf of Bulfinch WPB1 Owner, LLC for the Site identified as One Congress Street located in Boston, Massachusetts (the "Site"). The general Site locus is shown on Figure 1. This RGP is to include the Site as shown on Figure 2. The NOI is attached.

A NPDES General Permit had been issued for this discharge on November 16, 2016, Permit No. MAG070431. As a requirement of the General Permit the discharge was subject to the 2010 NPDES RGP Discharge limits. This NOI is being submitted to officially transfer the water discharge regulatory framework from the NPDES General Permit to the NPDES RGP as requested by the United States Department of Environmental Protection (USEPA).

General Facility/Site Information

The site is located in an urban area of Boston, Massachusetts. According to the Boston South 2015 USGS Topographic Map, the Site is located in a densely developed urban area in downtown Boston, Massachusetts. Per the City of Boston Assessor's information, the Site is currently occupied by an 11 story, 1,355,000 square-foot building. Congress Street bisects the building into two sections, which are connected by floors 10 and 11. The first floor of the building consists of retail space, building maintenance, storage areas, an open-air parking garage, and a lobby that provides access to the office space sections of the building. The northeastern portion of the Site contains a surface Massachusetts Bay Transportation Authority (MBTA) bus station and access to the Haymarket MBTA subway station, which partially underlies the Site. Floors two through nine of the building are occupied by an open-air parking garage with vehicle access from New Chardon Street (northwest of the building) and Sudbury Street (northeast of the building) and egress from Bowker Street (south of the building). Floors 10 to 11 of the building contain commercial office space.

The Site is bounded to the northwest by New Chardon Street, beyond which are multiple commercial, government, and residential buildings. The Site is bounded to the northeast by the Rose Kennedy Greenway, beyond which is US Interstate Highway 93. The Site is bounded to the southeast by Sudbury Street, beyond which are a mixed-use parking garage and commercial building, and the John F. Kennedy Federal building. The Site is bordered to the southwest by Bowker Street and the Boston Police Department.

According to the Bureau of Waste Site Cleanup (BWSC) Map (attached), the Site is not located in a medium or high yield aquifer, Zone II, Interim Wellhead Protection Areas (IWPA) Zone A, Public Water Supply (PWS) Protection Area, or within 500 feet of the Site, respectively. Public or private drinking water wells were not identified at or within 500 feet of the Site. Estimated rare wetland, vernal pools, freshwater/saltwater wetlands, protected open spaces, or ACEC were not identified at the Site. A review of the City of Boston online mapping did not identify the area as a designated aquifer. The closest surface water body is Boston Harbor, located approximately 0.4 miles east of the Site.

APPLICABLE REGULATORY STANDARDS

Soil at the Site is considered RCS-1 with respect to the reporting requirements under the Massachusetts Contingency Plan (MCP) at 310 CMR 40.000. The RCS-1 standard is applicable based upon the presence of mixed use buildings that include residential units within 500 feet of the Site. Groundwater is considered RCGW-2 with respect to reporting requirements and GW-2/GW-3 with respect to cleanup criteria under the MCP, since it is not a current or potential source of drinking water.

Applicant/Operator

The applicant for the Notice of Intent-Remediation General Permit is:

Tishman Construction Corporation of Massachusetts
One Federal Street, Floor #9
Boston, MA 02110
Attention: Peter Sheehan

Site Owner

WP-B1 Bulfinch WPB1 Owner LLC
c/o The HYM Investment Group LLC
One Congress Street, 11th Floor
Boston, MA 02114

Summary of Subsurface Conditions

Results of subsurface investigations indicate that the subsurface soil across the Site consists of fill that is generally described as loose to dense, dark brown and gray coarse to fine sand with varying amounts of gravel, silt, ash, wood, and brick fragments. The urban fill generally ranges in thickness from 5 to

10 feet. Underlying the fill are native materials consisting of varying thickness of sand, silt and clay (locally known as the Boston Blue Clay) intermixed with horizons of fine sand and silt partings.

Fourteen soil samples were collected from the Site to evaluate soil conditions and analyzed for Volatile Organic Compounds (VOCs), polychlorinated biphenyls (PCBs), semivolatile organic compounds (SVOCs), metals, as well as general chemistry. No VOCs or PCBs were identified above applicable MCP Reportable Concentrations (RC) or the RCRA characteristic waste standards presented in 40 CFR 261. With regard to metals and SVOCs, with the exception of total lead in two samples and benzo(a)pyrene in one soil sample, metals and SVOCs were not detected above the MCP reportable concentrations. Total lead was detected in soil collected from boring VES-305 (0-5') at a concentration of 500 milligrams per kilogram (mg/kg) and in soil collected from boring VES-306 (0-5') at a concentration of 400 mg/kg, which exceed the applicable MCP RC of 200 mg/kg. Benzo(a)pyrene was detected in soil collected from boring VES-307 (0-8') at a concentration of 4 mg/kg, which exceeds the applicable MCP RC of 2 mg/kg. The soil samples collected from VES-305, 306 and 307 were observed to contain coal ash in the urban fill, which is considered to be an anthropogenic condition[1] and not reportable. Therefore the lead and benzo(a)pyrene are exempt from reporting under the MCP [310 CMR 40.0317(9)]. Although exempt from reporting, excavation, handling, and management of historic fill soil must be conducted as appropriate for soils containing the identified chemicals.

Groundwater is located at a depth of approximately 10 feet below existing grade within the Project Area. The majority of the water discharge from the Project Area will be municipal water used as part of the installation of pile grouting operation for the construction of the building. VERTEX estimates that municipal water will account for approximately 90% of the discharge from the Project Area.

Receiving Waters Information

The discharge location for the RGP is the Boston Water and Sewer Commission (BWSC) catch basin No. 143 located to the south of Site. Based upon a map of the BWSC subsurface utilities the discharge location will be Outfall No. 49 to the Charles River a Class B Waterbody.

Based on correspondence from Ms. Catherine Vakalopoulos of the MassDEP, the 7-day consecutive low flow discharge (7Q10) is calculated at 18.87 MGD. With a design flow of 100 gallons per minute (GPM) the dilution factor was calculated to be 132.

Applicable Standards

USEPA uses two standards to evaluate and calculate the effluent discharge standards. These are the technology-based effluent limitation, (TBEL) and the water quality-based effluent limitation (WQBEL) and are published in the RGP. In order to identify the applicable criteria (TBEL or WQBEL), USEPA developed a calculator spreadsheet. The calculation evaluates the water quality

[1] In accordance with 310 CMR 40.0006 (Anthropogenic Background definition (b)). Anthropogenic Background (b) is defined in the 310 CMR 40.0006 as levels of oil and hazardous material that would exist in the absence of the disposal site of concern attributed to Historic Fill.

of the receiving waters and the site contaminants, the dewatering system effluent flow rate, and stream flow rate to select analyte specific criteria.

On September 15, 2017, a grab water sample was collected from the Charles River at the location of Outfall 049. The water sample was submitted to Contest Analytical of East Longmeadow, Massachusetts for laboratory analysis of hardness, ammonia, and nitrogen as required by the RGP. In addition, pH and temperature were measured in the field. Representative groundwater samples were also collected from within the Site and are discussed under the Summary of Water Analytical Testing and Results section of this letter. Based upon the calculation, the select TBEL or WQBEL limits are the applicable discharge standards. A summary of the laboratory analytical data, the USEPA calculation sheets, and the laboratory analytical report are attached.

Summary of Water Analytical Testing and Results

Because a permit had been historically issued for the discharge of water from the project this NOI is being submitted using the water discharge data already existing for the project. Certain parameters (e.g., pH, temperature, etc.) were collected using field instrumentation at the time of sampling. None of the analyzed compounds exceed applicable MCP regulatory criteria Results of the water sampling and analyses are summarized in Table 1 and laboratory reports are included as an attachment..

Treatment System Information

The system will consist of a construction dewatering pump(s) as well as recirculated municipal water used in the installation of building subsurface support system. Water will be pumped from a municipal source to the Project Area. Water will be used as part of the installation of piles and subsequent grouting of those piles per the civil engineering specifications. Water used as part of the construction project will be recirculated on-site and used until a subsurface structural element is installed. Once complete, the resulting water will flow through a series of holding tanks, and through a series of filters (number will vary with the quantity of water being pumped) to remove suspended sediment.

Untreated water will in holding tanks to provide adequate storage while waiting for discharge. The maximum combined dewatering-effluent treatment system design-flow capacity will not exceed 100 GPM. Influent and effluent samples will be collected from the system as required. If the samples indicate additional treatment may be necessary, a Notice of Change (NOC) will be submitted prior to discharge. If a high concentration of fine particulates are detected in the samples, then precipitation/coagulation /flocculation treatment measures may be applied.

The proposed water treatment systems will be equipped with required fixtures, freeze protection, floats, switches, flow totalizer, and alarms to continuously operate the dewatering system. Sampling ports for influent and effluent will be installed. A schematic diagram of the proposed water treatment system is provided in Figure 3 and the connection location, storm water lines, and discharge location are shown on Figure 2.

The operator will notify and provide a municipality dewatering permit for its discharge, as needed.

Endangered Species Act Eligibility

Correspondence from the U.S. Fish and Wildlife Service (FWS) is attached. According to the FWS, there is one threatened species that should be evaluated within the Project Area, the Red Knot bird (*Calidris canutus rufa*). However, the FWS letter documentation indicates that there are no critical habitats identified within the Project Area.

National Historic Preservation Act Eligibility

A search for historic properties within the Site vicinity was performed on the National Register of Historic Places website. No listings were found for the Site; however, several listings were found within the vicinity of the Site. Historic Site information is attached.

Based on the location of the proposed discharge, the listed nearby historic properties will not be adversely impacted.

Best Management Practices Plan (BMPP)

A BMPP will be maintained onsite during dewatering activities and personnel will adhere to the guidance provided.

We trust that the above satisfies your present requirements. Please do not hesitate to contact us should you have any questions or require additional information.

Sincerely,

The Vertex Companies, Inc.

Elizabeth Phelps
Assistant Project Manager

Jesse Freeman, PE
Senior Project Manager

Jessica Fox, PE
Vice President of Operations – Environmental

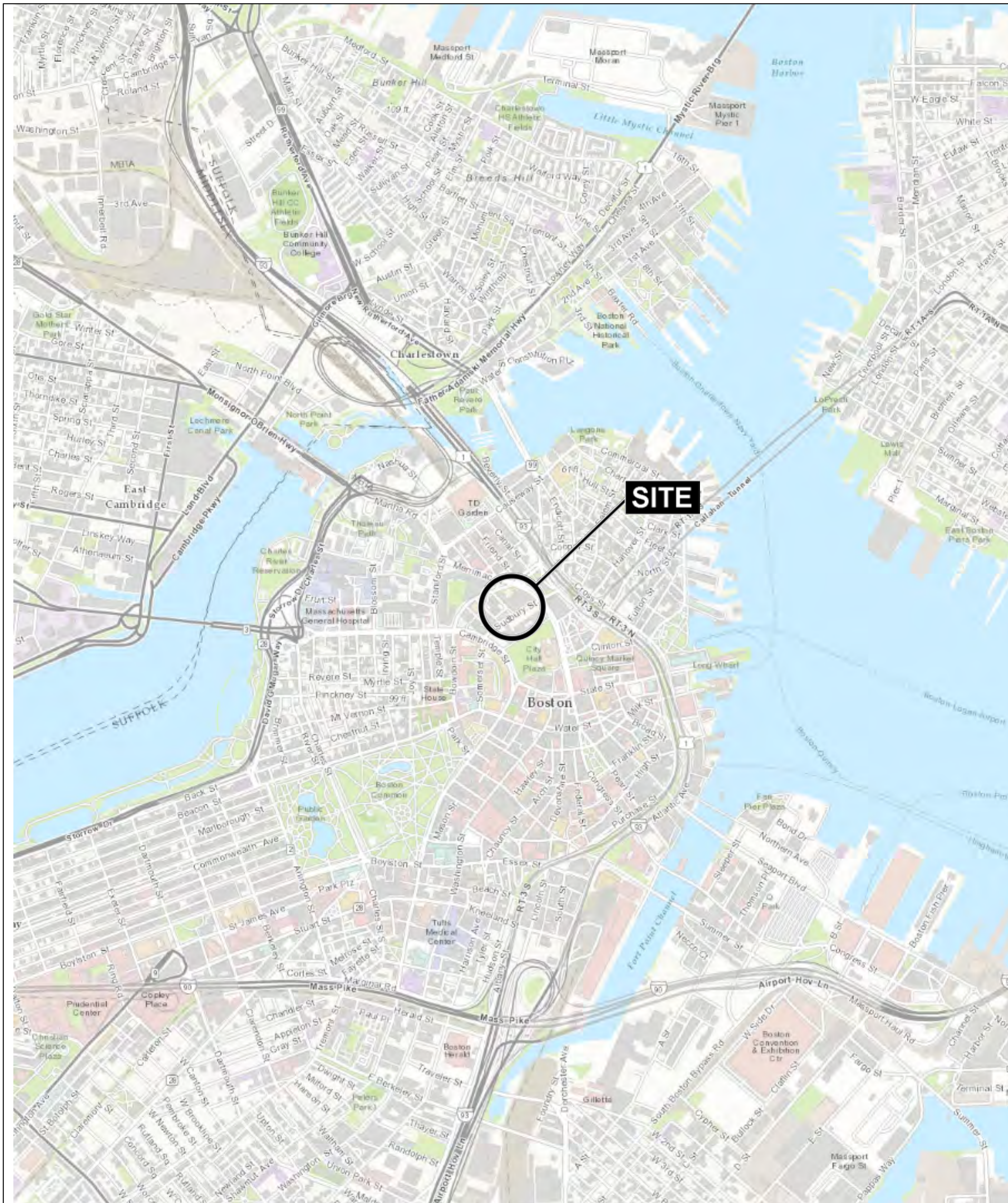
Attachments:

Figure 1: Site Locus
Figure 2: Site Plan and Outfall Location
Figure 3: Proposed Treatment System Schematic

Notice of Intent
Summary of NPDES Groundwater Analytical Results
USEPA WQBEL Calculation Sheet
Correspondence from the U.S. Fish and Wildlife Service
National Register of Historic Places and Massachusetts Historical Commission Documentation
Laboratory Analytical Reports

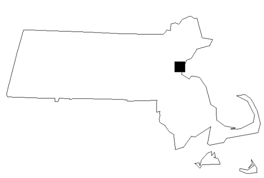
cc: Massachusetts Department of Environmental Protection
City of Boston Public Works

FIGURES



MAP SOURCE: ESRI

SITE COORDINATES: 42°21'44"N, 71°3'35"W



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;OVERNMENT CENTER GARAGE - ENABLING PHASE
0 SUDBURY STREET
OSTON, MASSACHUSETTS

PROJECT LOCUS

APPROXIMATE SCALE: 1 IN = 2000 FT
AUGUST 2016

FIGURE 1

40181-030_1_LOCUS.PDF

Storm Drain Outfall
No. 49

PROPOSED
DISCHARGE ROUTE

SITE

Catch Basin
No. 143

CHARLES RIVER

NORTH WASHINGTON ST

LEONARD P. ZAKIM BRIDGE

NASHUA ST

JOHN F FITZGERALD EXPRESS RAMP

MARTHA RD

THOREAU PATH

BLOSSOM ST

WM CARDINAL O'CONNELL WY

CAMBRIDGE ST

PARKMAN ST

NEW CHARDON ST

NEW SUDBURY ST

BOWKER ST

CAUSEWAY ST

BEVERLY ST

LOVEJOY PL

LEGENDS WY

RED AUERBACH WY

LOMASNEY WY

BILLERICA ST

AMY CT

HAVERHILL ST

CANAL ST

PORTLAND ST

FRIEND ST

LANCASTER ST

MERRIMAC ST

ANTHONY RIP VALENTI WY

MEDFORD ST

NORTH WASHINGTON ST

ENDICOTT ST

ENDICOTT CT

LYNN ST

POND STREET PL

THACHER CT

NORTH ST

HUEL ST

LAFAYETTE AV

MARKET ST

CONGRESS ST

MARSHALL ST

STILLMAN PL

BULFINCH PL

BRATTLE WY

HAWKINS ST

COOLIDGE AV

TEMPLE ST

RIDGEWAY LN

HANCOCK ST

BOWDOIN ST

SOMERSET ST

SCOLLY SQ

LYNDE ST

JOY ST

SMITH CT

PRIVATE RD

SOUTH RUSSELL ST

IRVING ST

GARDEN ST

ANDERSON ST

CHAMPNEY PL

ROLLINS PL

EMERSON PL

STANIFORD ST

NORTH ANDERSON ST

CHARLES RIVER DAM

BOSTON & MAINE

SPAULDING REHABILITATION HOSPITAL

TD BANKNORTH GARDEN

THOMAS P. "TIP" O'NEILL FEDERAL BUILDING

ERICH LINDEMANN MENTAL HEALTH CENTER

DEPARTMENT OF EMPLOYMENT SECURITY

BOSTON PUBLIC LIBRARY BRANCH

BOSTON CITY HALL

CITY HALL PLAZA

JOHN F. KENNEDY FEDERAL BUILDING

POLICE STATION

US POST OFFICE

CENTER PLAZA

PETER FANEUIL SCHOOL

FIRE STATION

AMY LOWELL HOUSE

WHITTIER PLACE

HAWTHORNE PLACE

LONGFELLOW PLACE

BOSTON SYNAGOGUE

PARKING GARAGE

PARKING

BOSTON WATER AND SEWER

N
W E
S

100 50 0 100 200 300 Feet

1 inch = 100 feet

Government Center Garage - Enabling Phase
50 Sudbury Street, Boston

Proposed Construction Dewatering
Discharge Route

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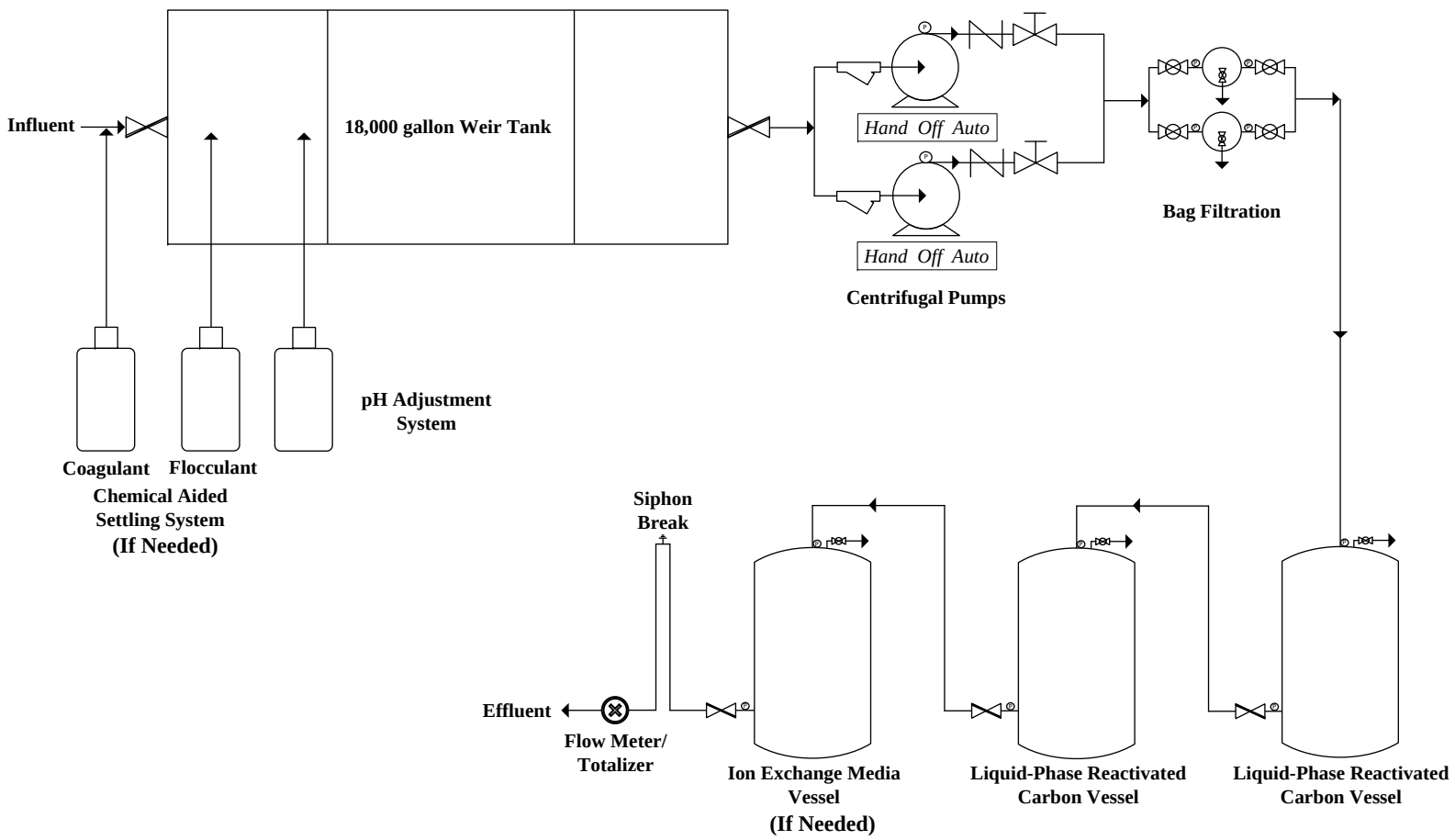
Figure 2



Notes:

1.) Figure is not to scale
2.) System rated for 125 GPM
3.) Sampling ports located on all treatment system components

Key:
Piping/Hose

Lockwood Remediation Technologies, LLC
89 Crawford Street
Leominster, MA 01453
Office: 774-450-7177

DESIGNED BY: LRT **DRAWN BY:** B. Watkins

CHECKED BY: **DATE:**

Water Treatment System Schematic

Government Center Garage - Enabling Phase
50 Sudbury Street, Boston

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Figure 3

NOTICE OF INTENT

II. Suggested Format for the Remediation General Permit Notice of Intent (NOI)

A. General site information:

<table>
<tr><td rowspan="2">1. Name of site:
Government Center Garage</td><td colspan="3">Site address:
Street: One Congress Street</td></tr>
<tr><td>City: Boston</td><td>State: MA</td><td>Zip: 02109</td></tr>
<tr><td rowspan="4">2. Site owner
WP-B1 Bulfinch WPB1 Owner LLC

Owner is (check one): ☐ Federal ☐ State/Tribal ■ Private
☐ Other; if so, specify:</td><td colspan="3">Contact Person: Paul Crisalli, Director of Operations</td></tr>
<tr><td>Telephone: 617-248-8905</td><td colspan="2">Email: pcrisalli@hyminvestments.com</td></tr>
<tr><td colspan="3">Mailing address:
Street: 50 Sudbury Street</td></tr>
<tr><td>City: Boston</td><td>State: MA</td><td>Zip: 02114</td></tr>
<tr><td rowspan="4">3. Site operator, if different than owner
Tishman Construction Corporation of Massachusetts</td><td colspan="3">Contact Person: Ken Felton</td></tr>
<tr><td>Telephone: 617-549-3557</td><td colspan="2">Email: Ken.felton@aecom.com</td></tr>
<tr><td colspan="3">Mailing address:
Street: One Federal Street, Floor #9</td></tr>
<tr><td>City: Boston</td><td>State: MA</td><td>Zip: 02110</td></tr>
<tr><td>4. NPDES permit number assigned by EPA:
MAG910000

NPDES permit is (check all that apply: ■ RGP ☐ DGP ☐ CGP
☐ MSGP ☐ Individual NPDES permit ☐ Other; if so, specify:</td><td colspan="3">5. Other regulatory program(s) that apply to the site (check all that apply):
☐ MA Chapter 21e; list RTN(s):

☐ NH Groundwater Management Permit or Groundwater Release Detection Permit:

☐ CERCLA
☐ UIC Program
☐ POTW Pretreatment
☐ CWA Section 404</td></tr>
</table>

B. Receiving water information:

1. Name of receiving water(s):	Waterbody identification of receiving water(s):	Classification of receiving water(s):
Charles River	MA72-38	Class B

Receiving water is (check any that apply): ☐ Outstanding Resource Water ☐ Ocean Sanctuary ☐ territorial sea ☐ Wild and Scenic River

2. Has the operator attached a location map in accordance with the instructions in B, above? (check one): ■ Yes ☐ No

Are sensitive receptors present near the site? (check one): ☐ Yes ■ No
If yes, specify:

3. Indicate if the receiving water(s) is listed in the State's Integrated List of Waters (i.e., CWA Section 303(d)). Include which designated uses are impaired, and any pollutants indicated. Also, indicate if a final TMDL is available for any of the indicated pollutants. For more information, contact the appropriate State as noted in Part 4.6 of the RGP.

4. Indicate the seven day-ten-year low flow (7Q10) of the receiving water determined in accordance with the instructions in Appendix V for sites located in Massachusetts and Appendix VI for sites located in New Hampshire.	18.87 MGD
5. Indicate the requested dilution factor for the calculation of water quality-based effluent limitations (WQBELs) determined in accordance with the instructions in Appendix V for sites in Massachusetts and Appendix VI for sites in New Hampshire.	132

6. Has the operator received confirmation from the appropriate State for the 7Q10and dilution factor indicated? (check one): ■ Yes ☐ No
If yes, indicate date confirmation received: 9/14/2017

7. Has the operator attached a summary of receiving water sampling results as required in Part 4.2 of the RGP in accordance with the instruction in Appendix VIII? (check one): ■ Yes ☐ No

C. Source water information:

1. Source water(s) is (check any that apply):

☐ Contaminated groundwater Has the operator attached a summary of influent sampling results as required in Part 4.2 of the RGP in accordance with the instruction in Appendix VIII? (check one): ■ Yes ☐ No	☐ Contaminated surface water Has the operator attached a summary of influent sampling results as required in Part 4.2 of the RGP in accordance with the instruction in Appendix VIII? (check one): ☐ Yes ☐ No	☐ The receiving water ☐ A surface water other than the receiving water; if so, indicate waterbody:	■ Potable water; if so, indicate municipality or origin: Boston ☐ Other; if so, specify:

2. Source water contaminants: Sediment	
a. For source waters that are contaminated groundwater or contaminated surface water, indicate are any contaminants present that are not included in the RGP? (check one): ☐ Yes ☐ No If yes, indicate the contaminant(s) and the maximum concentration present in accordance with the instructions in Appendix VIII.	b. For a source water that is a surface water other than the receiving water, potable water or other, indicate any contaminants present at the maximum concentration in accordance with the instructions in Appendix VIII? (check one): ☐ Yes ■ No
3. Has the source water been previously chlorinated or otherwise contains residual chlorine? (check one): ■ Yes ☐ No	

D. Discharge information

1.The discharge(s) is a(n) (check any that apply): ■ Existing discharge ☐ New discharge ☐ New source	
Outfall(s): BWSC Storm Drain Outfall No. 49	Outfall location(s): (Latitude, Longitude) 42°22' 02.79" N 71°04' 04.95" W
Discharges enter the receiving water(s) via (check any that apply): ☐ Direct discharge to the receiving water ■ Indirect discharge, if so, specify: Stormwater Drain ☐ A private storm sewer system ■ A municipal storm sewer system If the discharge enters the receiving water via a private or municipal storm sewer system: Has notification been provided to the owner of this system? (check one): ■ Yes ☐ No Has the operator has received permission from the owner to use such system for discharges? (check one): ■ Yes ☐ No, if so, explain, with an estimated timeframe for obtaining permission: Has the operator attached a summary of any additional requirements the owner of this system has specified? (check one): ☐ Yes ■ No	
Provide the expected start and end dates of discharge(s) (month/year): October 2017 to October 2018 Indicate if the discharge is expected to occur over a duration of: ☐ less than 12 months ■ 12 months or more ☐ is an emergency discharge	
Has the operator attached a site plan in accordance with the instructions in D, above? (check one): ■ Yes ☐ No	

<table>
<tr><td>2. Activity Category: (check all that apply)</td><td colspan="2">3. Contamination Type Category: (check all that apply)</td></tr>
<tr><td rowspan="4">☐ I – Petroleum-Related Site Remediation
☐ II – Non-Petroleum-Related Site Remediation
■ III – Contaminated Site Dewatering
☐ IV – Dewatering of Pipelines and Tanks
☐ V – Aquifer Pump Testing
☐ VI – Well Development/Rehabilitation
☐ VII – Collection Structure Dewatering/Remediation
☐ VIII – Dredge-Related Dewatering</td><td colspan="2">a. If Activity Category I or II: (check all that apply)

☐ A. Inorganics
☐ B. Non-Halogenated Volatile Organic Compounds
☐ C. Halogenated Volatile Organic Compounds
☐ D. Non-Halogenated Semi-Volatile Organic Compounds
☐ E. Halogenated Semi-Volatile Organic Compounds
☐ F. Fuels Parameters</td></tr>
<tr><td colspan="2">b. If Activity Category III, IV, V, VI, VII or VIII: (check either G or H)</td></tr>
<tr><td>■ G. Sites with Known Contamination</td><td>☐ H. Sites with Unknown Contamination</td></tr>
<tr><td>c. If Category III-G, IV-G, V-G, VI-G, VII-G or VIII-G: (check all that apply)

■ A. Inorganics
☐ B. Non-Halogenated Volatile Organic Compounds
☐ C. Halogenated Volatile Organic Compounds
☐ D. Non-Halogenated Semi-Volatile Organic Compounds
☐ E. Halogenated Semi-Volatile Organic Compounds
■ F. Fuels Parameters</td><td>d. If Category III-H, IV-H, V-H, VI-H, VII-H or VIII-H Contamination Type Categories A through F apply</td></tr>
</table>

4. Influent and Effluent Characteristics

Parameter	Known or believed absent	Known or believed present	# of samples	Test method (#)	Detection limit (µg/l)	Influent		Effluent Limitations	
						Daily maximum (µg/l)	Daily average (µg/l)	TBEL	WQBEL
A. Inorganics									
Ammonia		✔				0.43	0.42	Report mg/L	---
Chloride								Report µg/l	---
Total Residual Chlorine		✔	1			280	141.05	0.2 mg/L	1452
Total Suspended Solids		✔	1			178	178	30 mg/L	---
Antimony	✔		1	6020A	10	0	0	206 µg/L	84507
Arsenic	✔		1	6010C	10	0	0	104 µg/L	1320
Cadmium	✔		1	6010C	1	0	0	10.2 µg/L	9.19
Chromium III	✔		1	6010C	20	0	0	323 µg/L	2536.8
Chromium VI	✔		1	6010C	20	0	0	323 µg/L	1509.8
Copper		✔	1			55.6	55.6	242 µg/L	1.9
Iron		✔	1			6910	6910	5,000 µg/L	132025
Lead		✔	1	6010C		10	10	160 µg/L	.31
Mercury	✔		1	7471A	0.2	0	0	0.739 µg/L	119.61
Nickel	✔		1	6020A	20	0	0	1,450 µg/L	1461.4
Selenium	✔		1	6010C	10	0	0	235.8 µg/L	358.8
Silver	✔		1	6020A	0.5	0	0	35.1 µg/L	21.4
Zinc	✔		1		50	0	0	420 µg/L	3348.7
Cyanide	✔		1		5	0	0	178 mg/L	686.6
B. Non-Halogenated VOCs									
Total BTEX	✔		1	8260C		0	0	100 µg/L	---
Benzene	✔		1	8260C	1	0	0	5.0 µg/L	---
1,4 Dioxane	✔							200 µg/L	---
Acetone	✔		1			0	0	7.97 mg/L	---
Phenol		✔	1	8260C		14.5	14.5	1,080 µg/L	39613

Parameter	Known or believed absent	Known or believed present	# of samples	Test method (#)	Detection limit (µg/l)	Influent		Effluent Limitations	
						Daily maximum (µg/l)	Daily average (µg/l)	TBEL	WQBEL
C. Halogenated VOCs									
Carbon Tetrachloride	✔							4.4 µg/L	211.3
1,2 Dichlorobenzene	✔		1	8260C	1	0	0	600 µg/L	---
1,3 Dichlorobenzene	✔		1	8260C	1	0	0	320 µg/L	---
1,4 Dichlorobenzene	✔		1	8260C	1	1	0	5.0 µg/L	---
Total dichlorobenzene	✔		1	8260C	1	0	0	763 µg/L in NH	---
1,1 Dichloroethane	✔		1	8260C	1	0	0	70 µg/L	---
1,2 Dichloroethane	✔		1	8260C	1	0	0	5.0 µg/L	---
1,1 Dichloroethylene	✔							3.2 µg/L	---
Ethylene Dibromide	✔							0.05 µg/L	---
Methylene Chloride	✔		1	8260C	4	0	0	4.6 µg/L	---
1,1,1 Trichloroethane	✔		1	8260C	1	0	0	200 µg/L	---
1,1,2 Trichloroethane	✔							5.0 µg/L	---
Trichloroethylene	✔		1	8260C	1	0	0	5.0 µg/L	---
Tetrachloroethylene	✔		1	8260C	1	0	0	5.0 µg/L	435.7
cis-1,2 Dichloroethylene	✔		1	8260C	1	0	0	70 µg/L	---
Vinyl Chloride	✔		1	8260C	1	0	0	2.0 µg/L	---
D. Non-Halogenated SVOCs									
Total Phthalates	✔		1	8070D		241.7	241.7	190 µg/L	
Diethylhexyl phthalate	✔		1	8070D		0	0	101 µg/L	290.5
Total Group I PAHs	✔		1	EPA-04-1		0	0	1.0 µg/L	---
Benzo(a)anthracene	✔		1	EPA-04-1		0	0	As Total PAHs	0.5018
Benzo(a)pyrene	✔		1	EPA-04-1		0	0		0.5018
Benzo(b)fluoranthene	✔		1	EPA-04-1		0	0		0.5018
Benzo(k)fluoranthene	✔		1	EPA-04-1		0	0		0.5018
Chrysene	✔		1	EPA-04-1		0	0		0.5018
Dibenzo(a,h)anthracene	✔		1	EPA-04-1		0	0		0.5018
Indeno(1,2,3-cd)pyrene	✔		1	EPA-04-1		0	0		0.5018

Parameter	Known or believed absent	Known or believed present	# of samples	Test method (#)	Detection limit (µg/l)	Influent		Effluent Limitations	
						Daily maximum (µg/l)	Daily average (µg/l)	TBEL	WQBEL
Total Group II PAHs	✔		1	EPA-04-1		0	0	100 µg/L	---
Naphthalene	✔		1	EPA-04-1	3.88	0	0	20 µg/L	---
E. Halogenated SVOCs									
Total PCBs	✔		1	8082A	0.09	0	0	0.000064 µg/L	---
Pentachlorophenol	✔		1	8082A	17.5	0	0	1.0 µg/L	---
F. Fuels Parameters									
Total Petroleum Hydrocarbons		✔		EPA-04-1		169	169	5.0 mg/L	---
Ethanol	✔							Report mg/L	---
Methyl-tert-Butyl Ether	✔		1	8260C	2	0	0	70 µg/L	2641
tert-Butyl Alcohol	✔							120 µg/L in MA 40 µg/L in NH	---
tert-Amyl Methyl Ether	✔							90 µg/L in MA 140 µg/L in NH	---
Other (i.e., pH, temperature, hardness, salinity, LC_{50}, additional pollutants present); if so, specify:									
Temperature	✔		1	Field		23.37	23.37		
pH	✔		1	Field		11.76	10.6		
Hardness			2			16	8.5		

E. Treatment system information

1. Indicate the type(s) of treatment that will be applied to effluent prior to discharge: (check all that apply)

☐ Adsorption/Absorption ☐ Advanced Oxidation Processes ☐ Air Stripping ☐ Granulated Activated Carbon ("GAC")/Liquid Phase Carbon Adsorption

☐ Ion Exchange ■ Precipitation/Coagulation/Flocculation ■ Separation/Filtration ☐ Other; if so, specify:

2. Provide a written description of all treatment system(s) or processes that will be applied to the effluent prior to discharge.

The treatment system will consist of a construction dewatering pump that will pump water to a settling tank. The water will then be pumped through at least one set of in-line three canister bag filters. Treated water may be stored in holding tanks to provide adequate storage while waiting for discharge. Treated water will be pumped to a stormwater drain located at the project site which is connected to a subsurface drainage structure that discharges to the Charles River at Outfall BOS-049.

Identify each major treatment component (check any that apply):

■ Fractionation tanks☐ Equalization tank ☐ Oil/water separator ☐ Mechanical filter ☐ Media filter

☐ Chemical feed tank ☐ Air stripping unit ☐ Bag filter ■ Other; if so, specify: In-line settling tank

Indicate if either of the following will occur (check any that apply):

☐ Chlorination ☐ De-chlorination

3. Provide the **design flow capacity** in gallons per minute (gpm) of the most limiting component. Indicate the most limiting component: 100 Is use of a flow meter feasible? (check one): ■ Yes ☐ No, if so, provide justification:	
Provide the proposed maximum effluent flow in gpm.	100
Provide the average effluent flow in gpm.	100
If Activity Category IV applies, indicate the estimated total volume of water that will be discharged:	

4. Has the operator attached a schematic of flow in accordance with the instructions in E, above? (check one): ■ Yes ☐ No

F. Chemical and additive information

1. Indicate the type(s) of chemical or additive that will be applied to effluent prior to discharge or that may otherwise be present in the discharge(s): (check all that apply)

☐ Algaecides/biocides ☐ Antifoams ☐ Coagulants ☐ Corrosion/scale inhibitors ☐ Disinfectants ☐ Flocculants ☐ Neutralizing agents ☐ Oxidants ☐ Oxygen ☐ scavengers ☐ pH conditioners ☐ Bioremedial agents, including microbes ☐ Chlorine or chemicals containing chlorine ☐ Other; if so, specify:

2. Provide the following information for each chemical/additive, using attachments, if necessary:
NA
a. Product name, chemical formula, and manufacturer of the chemical/additive;
b. Purpose or use of the chemical/additive or remedial agent;
c. Material Safety Data Sheet (MSDS) and Chemical Abstracts Service (CAS) Registry number for each chemical/additive;
d. The frequency (hourly, daily, etc.), duration (hours, days), quantity (maximum and average), and method of application for the chemical/additive;
e. Any material compatibility risks for storage and/or use including the control measures used to minimize such risks; and
f. If available, the vendor's reported aquatic toxicity (NOAEL and/or LC50 in percent for aquatic organism(s)).

3. Has the operator attached an explanation which demonstrates that the addition of such chemicals/additives may be authorized under this general permit in accordance with the instructions in F, above? (check one): ☐ Yes ■ No; if no, has the operator attached data that demonstrates each of the 126 priority pollutants in CWA Section 307(a) and 40 CFR Part 423.15(j)(1) are non-detect in discharges with the addition of the proposed chemical/additive?
(check one): ■ Yes ☐ No

G. Endangered Species Act eligibility determination

1. Indicate under which criterion the discharge(s) is eligible for coverage under this general permit:

☐ **FWS Criterion A**: No endangered or threatened species or critical habitat are in proximity to the discharges or related activities or come in contact with the "action area".

■ **FWS Criterion B**: Formal or informal consultation with the FWS under section 7 of the ESA resulted in either a no jeopardy opinion (formal consultation) or a written concurrence by FWS on a finding that the discharges and related activities are "not likely to adversely affect" listed species or critical habitat (informal consultation). Has the operator completed consultation with FWS? (check one): ■ Yes ☐ No; if no, is consultation underway? (check one): ☐ Yes ☐ No

☐ **FWS Criterion C**: Using the best scientific and commercial data available, the effect of the discharges and related activities on listed species and critical habitat have been evaluated. Based on those evaluations, a determination is made by EPA, or by the operator and affirmed by EPA, that the discharges and related activities will have "no effect" on any federally threatened or endangered listed species or designated critical habitat under the jurisdiction of the FWS. This determination was made by: (check one) ☐ the operator ☐ EPA ☐ Other; if so, specify:

☐ **NMFS Criterion**: A determination made by EPA is affirmed by the operator that the discharges and related activities will have "no effect" or are "not likely to adversely affect" any federally threatened or endangered listed species or critical habitat under the jurisdiction of NMFS and will not result in any take of listed species. Has the operator previously completed consultation with NMFS? (check one): ☐ Yes ☐ No

2. Has the operator attached supporting documentation of ESA eligibility in accordance with the instructions in Appendix I, and G, above? (check one): ■ Yes ☐ No

Does the supporting documentation include any written concurrence or finding provided by the Services? (check one): ☐ Yes ☐ No; if yes, attach.

H. National Historic Preservation Act eligibility determination

1. Indicate under which criterion the discharge(s) is eligible for coverage under this general permit:

☐ **Criterion A**: No historic properties are present. The discharges and discharge-related activities (e.g., BMPs) do not have the potential to cause effects on historic properties.

■ **Criterion B**: Historic properties are present. Discharges and discharge related activities do not have the potential to cause effects on historic properties.

☐ **Criterion C**: Historic properties are present. The discharges and discharge-related activities have the potential to have an effect or will have an adverse effect on historic properties.

2. Has the operator attached supporting documentation of NHPA eligibility in accordance with the instructions in H, above? (check one): ■ Yes ☐ No

Does the supporting documentation include any written agreement with the State Historic Preservation Officer (SHPO), Tribal Historic Preservation Officer (TPHO), or other tribal representative that outlines measures the operator will carry out to mitigate or prevent any adverse effects on historic properties? (check one): ☐ Yes ■ No

I. Supplemental information

Describe any supplemental information being provided with the NOI. Include attachments if required or otherwise necessary.

Has the operator attached data, including any laboratory case narrative and chain of custody used to support the application? (check one): ■ Yes ☐ No

Has the operator attached the certification requirement for the Best Management Practices Plan (BMPP)? (check one): ■ Yes ☐ No

J. Certification requirement

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I have no personal knowledge that the information submitted is other than true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

BMPP certification statement: A BMPP meeting the requirements of this general permit will be developed and implemented upon initiation of discharge.	
Notification provided to the appropriate State, including a copy of this NOI, if required.	Check one: Yes ■ No ☐
Notification provided to the municipality in which the discharge is located, including a copy of this NOI, if requested.	Check one: Yes ■ No ☐
Notification provided to the owner of a private or municipal storm sewer system, if such system is used for site discharges, including a copy of this NOI, if requested.	Check one: Yes ☐ No ☐ NA ■
Permission obtained from the owner of a private or municipal storm sewer system, if such system is used for site discharges. If yes, attach additional conditions. If no, attach explanation and timeframe for obtaining permission.	Check one: Yes ☐ No ☐ NA ■
Notification provided to the owner/operator of the area associated with activities covered by an additional discharge permit(s). Additional discharge permit is (check one): ☐ RGP ☐ DGP ■ CGP ☐ MSGP ☐ Individual NPDES permit ☐ Other; if so, specify:	Check one: Yes ■ No ☐ NA ☐
Signature: Paul Crisalli	Date: 9/26/2017
Print Name and Title: Paul Crisalli, Owners Representative	

SUMMARY OF GROUNDWATER ANALYTICAL RESULTS

TABLE 1
SUMMARY OF NPDES ANALYTICAL DATA
ONE CONGRESS STREET
BOSTON, MASSACHUSETTS
VERTEX PROJECT NO. 27026

Sample Designation	CAS Number	MassDEP RCGW-2	MassDEP GW-3	USEPA RGP Effluent TBEL/WGBEL Limitations	Units	NPDES-T2-100 Influent	Municipal FH Influent	MWRA Influent	BOS-049 Receiving Water
Laboratory Sample ID						1606245-01	17I0704-01		17I0704-02
Sample Date						06/09/2016	06/09/2016		9/15/2017
1 1,2-Dibromoethane / 1,2-Dibromo-3-chloropropane									
1,2-Dibromoethane	106-93-4	2	50,000	--	ug/L	ND(0.015)	---	---	ND(0.02)
Polychlorinated Biphenyls (PCB)									
Aroclor 1016	12674-11-2	5	10	--	ug/L	ND(0.09)	---	---	ND(0.1)
Aroclor 1221	11104-28-2	5	10	--	ug/L	ND(0.09)	---	---	ND(0.1)
Aroclor 1232	11141-16-5	5	10	--	ug/L	ND(0.09)	---	---	ND(0.1)
Aroclor 1242	53469-21-9	5	10	--	ug/L	ND(0.09)	---	---	ND(0.1)
Aroclor 1248	12672-29-6	5	10	--	ug/L	ND(0.09)	---	---	ND(0.1)
Aroclor 1254	11097-69-1	5	10	--	ug/L	ND(0.09)	---	---	ND(0.1)
Aroclor 1260	11096-82-5	5	10	--	ug/L	ND(0.09)	---	---	ND(0.1)
Aroclor 1262	37324-23-5	5	10	--	ug/L	ND(0.09)	---	---	ND(0.1)
Aroclor 1268	11100-14-4	5	10	--	ug/L	ND(0.09)	---	---	ND(0.1)
TOTAL PCBs	Multiple	5	10	0.000064	ug/L	ND(0.09)	---	---	ND(0.1)
Organochlorine Pesticides									
4,4´-DDD	72-54-8	50	50	--	ug/L	ND(0.05)	---	---	---
4,4´-DDE	72-55-9	400	400	--	ug/L	ND(0.05)	---	---	---
4,4´-DDT	50-29-3	1	1	--	ug/L	ND(0.05)	---	---	---
Aldrin	309-00-2	2	30	--	ug/L	ND(0.05)	---	---	---
alpha-BHC	319-84-6	5,000	--	--	ug/L	ND(0.05)	---	---	---
beta-BHC	319-85-7	1,000	--	--	ug/L	ND(0.05)	---	---	---
Chlordane (Total)	57-74-9	2	2	--	ug/L	ND(0.47)	---	---	---
delta-BHC	319-86-8	1,000		--	ug/L	ND(0.05)	---	---	---
Dieldrin	60-57-1	0.5	0.5	--	ug/L	ND(0.05)	---	---	---
Endosulfan I [2C]	959-98-8	2	2	--	ug/L	**0.12**	---	---	---
Endosulfan II	33213-65-9	2	2	--	ug/L	ND(0.05)	---	---	---
Endosulfan Sulfate	1031-07-8	--	--	--	ug/L	ND(0.05)	---	---	---
Endrin	72-20-8	5	5	--	ug/L	ND(0.05)	---	---	---
Endrin Aldehyde	7421-93-4	1,000		--	ug/L	ND(0.05)	---	---	---
gamma-BHC (Lindane)	58-89-9	4	4	--	ug/L	ND(0.05)	---	---	---
Heptachlor	76-44-8	1	1	--	ug/L	ND(0.05)	---	---	---
Heptachlor Epoxide	1024-57-3	2	2	--	ug/L	ND(0.05)	---	---	---
Methoxychlor	72-43-5	10	10	--	ug/L	ND(0.05)	---	---	---
Toxaphene	8001-35-2	1,000	--	--	ug/L	ND(1.21)	---	---	---
trans-Chlordane	5103-74-2	--	--	--	ug/L	---	---	---	---
Endrin ketone	53494-70-5	5	5	--	ug/L	---	---	---	---
Volatile Organic Compounds									
1,1,1,2-Tetrachloroethane	630-20-6	10	50,000	--	ug/L	---	---	---	---
1,1-Dichloropropene	563-58-6	--	--	--	ug/L	---	---	---	---
1,2,3-Trichlorobenzene	87-61-6	--	--	--	ug/L	---	---	---	---
1,2,3-Trichloropropane	96-18-4	10,000	--	--	ug/L	---	---	---	---
1,2,4-Trichlorobenzene	120-82-1	200	--	--	ug/L	---	---	---	---
1,2,4-Trimethylbenzene	95-63-6	100,000	--	--	ug/L	---	---	---	---
1,2-Dibromo-3-Chloropropane	96-12-8	1,000	--	--	ug/L	---	---	---	---
1,2-Dibromoethane	106-93-4	2	--	--	ug/L	---	---	---	ND(0.02)
1,2-Dichloroethene, Total	540-59-0	100	--	--	ug/L	---	---	---	---
1,3,5-Trimethylbenzene	108-67-8	1,000	--	--	ug/L	---	---	---	---
1,3-Dichloropropane	142-28-9	50,000	--	--	ug/L	---	---	---	---
1,3-Dichloropropene, Total	542-75-6	10	200	--	ug/L	---	---	---	---
1,4-Dioxane	123-91-1	6,000	50,000	200	ug/L	---	---	---	ND(50)
2,2-Dichloropropane	594-20-7	---		--	ug/L	---	---	---	---
2-Butanone	78-93-3	50,000	50,000	--	ug/L	---	---	---	---
2-Chlorotoluene		10,000		--	ug/L	---	---	---	---
2-Hexanone	591-78-6	10,000	--	--	ug/L	---	---	---	---
4-Chlorotoluene		10,000		--	ug/L	---	---	---	---
4-Isopropyltoluene			--	--	ug/L	---	---	---	---
4-Methyl-2-Pentanone	108-10-1	50,000	50,000	--	ug/L	---	---	---	---
Acetone	67-64-1	50,000	50,000	7,970	ug/L	---	---	---	ND(50)
Bromobenzene	108-86-1	10,000	--	--	ug/L	---	---	---	---
Bromochloromethane	74-97-5	---	--	--	ug/L	---	---	---	---
Carbon Disulfide	75-15-0	10,000	--	--	ug/L	---	---	---	---
Dibromomethane	74-95-3	50,000	--	--	ug/L	---	---	---	---
Dichlorodifluoromethane	75-71-8	100,000	--	--	ug/L	---	---	---	---
Diethyl Ether	60-29-7	10,000	--	--	ug/L	---	---	---	---
Di-isopropyl ether	108-20-3	10,000	--	--	ug/L	---	---	---	---
Ethyl tertiary-butyl ether	637-92-3	---	--	--	ug/L	---	---	---	---
Hexachlorobutadiene	87-68-3	50	3,000	--	ug/L	---	---	---	---
Isopropylbenzene	98-82-8	100,000	--	--	ug/L	---	---	---	---
Methyl tert-Butyl Ether	1634-04-4	5,000	50,000	70	ug/L	---	ND(2)	---	ND(2)
Naphthalene	91-20-3	700	20,000	--	ug/L	---	---	---	---
n-Butylbenzene	104-51-8	---	--	--	ug/L	---	---	---	---
n-Propylbenzene	103-65-1	10,000	--	--	ug/L	---	---	---	---
sec-Butylbenzene	135-98-8	---	--	--	ug/L	---	---	---	---
Styrene	100-42-5	100	6,000	--	ug/L	---	---	---	---
tert-Butylbenzene	98-06-6	10,000	--	--	ug/L	---	---	---	---
Tertiary-amyl methyl ether	994-05-8	---	--	90	ug/L	---	---	---	ND(0.5)
Tetrahydrofuran	109-99-9	50,000	--	--	ug/L	---	---	---	---
Xylene O	95-47-6	3,000	5,000	--	ug/L	---	---	---	ND(2)
Xylene P,M	179601-23-1	3,000	5,000	--	ug/L	---	---	---	ND(2)
Xylenes (Total)	Multiple	3,000	5,000	--	ug/L	---	---	---	ND(2)
1,1,1-Trichloroethane	71-55-6	4,000	20,000	200	ug/L	ND(1)	---	---	ND(2)
1,1,2,2-Tetrachloroethane	79-34-5	9	50,000	--	ug/L	ND(0.5)	---	---	---
1,1,2-Trichloroethane	79-00-5	900	50,000	5	ug/L	ND(1)	---	---	ND(2)
1,1-Dichloroethane	75-34-3	2,000	20,000	70	ug/L	ND(1)	---	---	ND(2)
1,1-Dichloroethene	75-35-4	80	30,000	3	ug/L	ND(1)	---	---	ND(2)
1,2-Dichlorobenzene	95-50-1	2,000	2,000	600	ug/L	ND(1)	---	---	ND(2)
1,2-Dichloroethane	107-06-2	5	20,000	5	ug/L	ND(1)	---	---	---
1,2-Dichloropropane	78-87-5	3	50,000	--	ug/L	ND(1)	---	---	---
1,3-Dichlorobenzene	541-73-1	6,000	50,000	320	ug/L	ND(1)	---	---	ND(2)
1,4-Dichlorobenzene	106-46-7	60	8,000	5	ug/L	ND(1)	---	---	ND(2)
2-Chloroethyl vinyl ether	110-75-8	50,000	--	--	ug/L	ND(10)	---	---	---
Acrolein - Screen	107-02-8	1,000	--	--	ug/L	ND(5)	---	---	---
Acrylonitrile - Screen	107-13-1	10,000	--	--	ug/L	ND(5)	---	---	---
Benzene	71-43-2	1,000	10,000	5	ug/L	ND(1)	---	---	ND(1)
Bromodichloromethane	75-27-4	6	50,000	--	ug/L	**1.2**	---	---	---
Bromoform	75-25-2	700	50,000	--	ug/L	ND(1)	---	---	---
Bromomethane	74-83-9	7	800	--	ug/L	ND(2)	---	---	---
Carbon Tetrachloride	56-23-5	2	5,000	4	ug/L	ND(1)	---	---	ND(2)
Chlorobenzene	108-90-7	200	1,000	--	ug/L	ND(1)	---	---	---
Chloroethane	75-00-3	10,000	--	--	ug/L	ND(2)	---	---	---
Chloroform	67-66-3	50	20,000	--	ug/L	**3.9**	---	---	---
Chloromethane	74-87-3	10,000	--	--	ug/L	ND(2)	---	---	---
cis-1,2-Dichloroethene	156-59-2	20	50,000	70	ug/L	ND(1)	---	---	ND(1)
cis-1,3-Dichloropropene	10061-01-5	5	--	--	ug/L	ND(0.4)	---	---	---
Dibromochloromethane	124-48-1	20	50,000	--	ug/L	ND(1)	---	---	---
Ethylbenzene	100-41-4	5,000	5,000	--	ug/L	ND(1)	---	---	ND(2)
Methylene Chloride	75-09-2	2,000	50,000	5	ug/L	ND(4)	---	---	ND(5)
Tetrachloroethene	127-18-4	50	30,000	5	ug/L	ND(1)	---	---	ND(2)
Toluene	108-88-3	40,000	40,000	--	ug/L	ND(1)	---	---	ND(1)
trans-1,2-Dichloroethene	156-60-5	80	50,000	--	ug/L	ND(1)	---	---	---
trans-1,3-Dichloropropene	10061-02-6	5	--	--	ug/L	ND(0.5)	---	---	---
Trichloroethene	79-01-6	5	5,000	5	ug/L	ND(1)	---	---	ND(2)
Trichlorofluoromethane	75-69-4	100,000	--	--	ug/L	ND(1)	---	---	---
Vinyl Chloride	75-01-4	2	50,000	2	ug/L	ND(1)	---	---	ND(2)

TABLE 1
SUMMARY OF NPDES ANALYTICAL DATA
ONE CONGRESS STREET
BOSTON, MASSACHUSETTS
VERTEX PROJECT NO. 27026

Sample Designation	CAS Number	MassDEP RCGW-2	MassDEP GW-3	USEPA RGP Effluent TBEL/WGBEL Limitations	Units	NPDES-T2-100 Influent	Municipal FH Influent	MWRA Influent	BOS-049 Receiving Water
Sample Type									
Laboratory Sample ID						1606245-01	17I0704-01		17I0704-02
Sample Date						06/09/2016	06/09/2016		9/15/2017
Semi-Volatile Organic Compounds									
1,2,4-Trichlorobenzene	120-82-1	200	50,000	--	ug/L	ND(9.7)	---	---	ND(5)
1,2-Dichlorobenzene	95-50-1	2,000	2,000	--	ug/L	ND(9.7)	---	---	ND(5)
1,3-Dichlorobenzene	541-73-1	6,000	50,000	--	ug/L	ND(9.7)	---	---	ND(5)
1,4-Dichlorobenzene	106-46-7	60	8,000	--	ug/L	ND(9.7)	---	---	ND(5)
2,4,5-Trichlorophenol	95-95-4	3,000	3,000	--	ug/L	ND(9.7)	---	---	---
2,4,6-Trichlorophenol	88-06-2	500	500	--	ug/L	ND(9.7)	---	---	ND(10)
2,4-Dichlorophenol	120-83-2	2,000	2,000	--	ug/L	ND(9.7)	---	---	ND(10)
2,4-Dimethylphenol	105-67-9	40,000	50,000	--	ug/L	ND(48.5)	---	---	ND(10)
2,4-Dinitrophenol	51-28-5	20,000	20,000	--	ug/L	ND(48.5)	---	---	ND(10)
2,4-Dinitrotoluene	121-14-2	20,000	50,000	--	ug/L	ND(9.7)	---	---	ND(10)
2,6-Dinitrotoluene	606-20-2	10,000	--	--	ug/L	ND(9.7)	---	---	ND(10)
2-Chloronaphthalene	91-58-7	100,000	--	--	ug/L	ND(9.7)	---	---	ND(10)
2-Chlorophenol	95-57-8	7,000	7,000	--	ug/L	ND(9.7)	---	---	ND(10)
2-Methylphenol	95-48-7	50,000	--	--	ug/L	ND(9.7)	---	---	ND(10)
2-Nitrophenol	88-75-5	10,000	--	--	ug/L	ND(9.7)	---	---	ND(10)
3,3´-Dichlorobenzidine	91-94-1	2,000	2,000	--	ug/L	ND(19.4)	---	---	ND(10)
3+4-Methylphenol	106-44-5	---	--	--	ug/L	ND(19.4)	---	---	ND(10)
4-Bromophenyl-phenylether	101-55-3	10,000	--	--	ug/L	ND(9.7)	---	---	ND(10)
4-Chloroaniline	106-47-8	300	300	--	ug/L	ND(19.4)	---	---	---
4-Nitrophenol	100-02-7	10,000	--	--	ug/L	ND(48.5)	---	---	ND(10)
Acetophenone	98-86-2	100,000	--	--	ug/L	ND(9.7)	---	---	---
Aniline	62-53-3	100,000	--	--	ug/L	ND(9.7)	---	---	---
Azobenzene	103-33-3	5,000	--	--	ug/L	ND(19.4)	---	---	ND(10)
bis(2-Chloroethoxy)methane	111-91-1	50,000	--	--	ug/L	ND(9.7)	---	---	---
bis(2-Chloroethyl)ether	111-44-4	30	50,000	--	ug/L	ND(9.7)	---	---	ND(10)
bis(2-chloroisopropyl)Ether	39638-32-9	100	50,000	--	ug/L	ND(9.7)	---	---	ND(10)
bis(2-Ethylhexyl)phthalate	117-81-7	50,000	50,000	--	ug/L	**230**	---	---	ND(10)
Butylbenzylphthalate	85-68-7	10,000	--	--	ug/L	**11.7**	---	---	ND(10)
Dibenzofuran	132-64-9	10,000	--	--	ug/L	ND(9.7)	---	---	---
Diethylphthalate	84-66-2	9,000	9,000	--	ug/L	ND(9.7)	---	---	ND(10)
Dimethylphthalate	131-11-3	50,000	50,000	--	ug/L	ND(9.7)	---	---	ND(10)
Di-n-butylphthalate	84-74-2	5,000	--	--	ug/L	ND(9.7)	---	---	ND(10)
Di-n-octylphthalate	117-84-0	100,000	--	--	ug/L	ND(9.7)	---	---	ND(10)
Total phthalates	Multiple	--	--	190	ug/L	**241.7**			ND
Hexachlorobutadiene	87-68-3	50	3,000	--	ug/L	ND(9.7)	---	---	ND(10)
Hexachloroethane	67-72-1	100	50,000	--	ug/L	ND(4.9)	---	---	ND(10)
Isophorone	78-59-1	10,000	--	--	ug/L	ND(9.7)	---	---	ND(10)
Nitrobenzene	98-95-3	50,000	--	--	ug/L	ND(9.7)	---	---	ND(10)
N-Nitrosodimethylamine	62-75-9	NA	NA	--	ug/L	ND(9.7)	---	---	ND(10)
Phenol	108-95-2	2,000	2,000	1,080	ug/L	**14.5**	---	---	ND(10)
2-Methylnaphthalene	91-57-6	2,000	20,000	--	ug/L	ND(3.88)	---	---	ND(10)
Acenaphthene	83-32-9	6,000	10,000	--	ug/L	ND(3.88)	---	---	ND(5)
Acenaphthylene	208-96-8	40	40	--	ug/L	ND(3.88)	---	---	ND(5)
Anthracene	120-12-7	30	30	--	ug/L	ND(3.88)	---	---	ND(5)
Benzo(a)anthracene	56-55-3	1,000	1,000	1	ug/L	ND(0.97)	---	---	ND(0.05)
Benzo(a)pyrene	50-32-8	500	500	1	ug/L	ND(0.97)	---	---	ND(0.1)
Benzo(b)fluoranthene	205-99-2	400	400	1	ug/L	ND(0.97)	---	---	ND(0.05)
Benzo(g,h,i)perylene	191-24-2	20	20	1	ug/L	ND(3.88)	---	---	ND(5)
Benzo(k)fluoranthene	207-08-9	100	100	1	ug/L	ND(0.97)	---	---	ND(0.2)
Chrysene	218-01-9	70	70	1	ug/L	ND(0.97)	---	---	ND(0.2)
Dibenzo(a,h)Anthracene	53-70-3	40	40	1	ug/L	ND(0.97)	---	---	ND(0.2)
Fluoranthene	206-44-0	200	200	--	ug/L	ND(3.88)	---	---	ND(5)
Fluorene	86-73-7	40	40	--	ug/L	ND(3.88)	---	---	ND(5)
Hexachlorobenzene	118-74-1	1	6,000	--	ug/L	ND(3.88)	---	---	ND(10)
Indeno(1,2,3-cd)Pyrene	193-39-5	100	100	--	ug/L	ND(0.97)	---	---	ND(0.2)
Naphthalene	91-20-3	700	20,000	20	ug/L	ND(3.88)	---	---	ND(5)
Pentachlorophenol	87-86-5	200	200	1	ug/L	ND(17.5)	---	---	ND(1)
Phenanthrene	85-01-8	10,000	10,000	--	ug/L	ND(3.88)	---	---	ND(5)
Pyrene	129-00-0	20	20	--	ug/L	ND(3.88)	---	---	ND(5)
Group II PAHs	Multiple	---	---	100		ND	---	---	ND
Classical Chemistry									
Hexavalent Chromium	18540-29-9	300	300	--	ug/L	ND(10)	---	---	ND(0.004)
Phenols	PHEN	--	--	--	ug/L	ND(100)	---	---	---
Total Cyanide (LL)	57-12-5	30	30	--	ug/L	ND(5)	---	---	ND(0.005)
Total Petroleum Hydrocarbon	Multiple	5	--	5	mg/L	**169**	---	---	---
Total Residual Chlorine	--	--	--	0.2	ug/L	**280**	2.1	---	0.028
Total Suspended Solids	TSS	--	--	30	mg/L	**178**	---	---	17
Corrosivity (pH)		--	--	--		---	9.37	---	7.66
Ammonia		--	--	Report	mg/L	---	---	0.42	0.063
Reactive Cyanide		--	--	--		---	---	---	---
Reactive Sulfide		--	--	--		---	---	---	---
Conductivity		--	--	--		---	---	---	---
Gasoline Range Organics		--	--	--		---	---	---	---
Diesel Range Organics		--	--	--		---	---	---	---
% Solids		--	--	--		---	---	---	---
Total Metals									
Antimony	7440-36-0	--	8000	206	ug/L	ND(10)	---	---	ND(1)
Arsenic	7440-38-2	--	900	104	ug/L	ND(10)	---	---	ND(1)
Cadmium	7440-43-9	--	4	10.2	ug/L	ND(1)	---	---	ND(0.2)
Chromium	7440-47-3	--	300	323	ug/L	ND(20)	---	---	ND(10)
Chromium III	16065-83-1	--	---	323	ug/L	ND(20)	---	---	ND(0.01)
Copper	7440-50-8	--	---	1.9*	ug/L	**55.6**	---	---	6.2
Iron	7439-89-6	--	---	5,000	ug/L	**6,910**	---	---	0.13
Lead	7439-92-1	--	10	0.31*	ug/L	**10**	---	---	1.5
Mercury	7439-97-6	--	20	0.739	ug/L	ND(0.2)	---	---	ND(0.0001)
Nickel	7440-02-0	--	200	1,450	ug/L	ND(20)	---	---	ND(5)
Selenium	7782-49-2	--	100	235.8	ug/L	ND(10)	---	---	2.3
Silver	7440-22-4	--	7	21.4	ug/L	ND(0.5)	---	---	ND(0.2)
Zinc	7440-66-6	--	900	420	ug/L	ND(50)	---	---	ND(20)
Hardness				--	mg/L	ND(2)	16	---	---
Corrosivity									
pH	Field Measured	--	--	6.5 to 8.5	Standard Units	11.76	9.37†	---	7.66†

Notes
1. CAS Number = Chemical Abstract Service Number.
2. Regulatory criteria are established under the Massachusetts Contingency Plan (MCP).
3. MassDEP = Massachusetts Department of Environmental Protection.
4. - = No standard, or sample was not analyzed for specific analyte.
5. ND = Not Detected above the laboratory reporting limit shown in parenthesis.
6. µg/L = micrograms per liter.
7. mg/L = milligrams per liter.
8. mg CaCO3/L = milligrams of calcium carbonate per liter.
9. SU = Standard Units.
10. † = Field Measured.
11. TBEL = Technology-Based Effluent Limitation
12. WQBEL - Water Quality-based Effluent Limitation
13. * = Calculated WQBEL value
14. MWRA water quality data obtained from http://www.mwra.state.ma.us/monthly/wqupdate/qual3wq.htm. The result was calculated by averaging the available monthly data for 2017 (January - June 2017)

USEPA WQBEL CALCULATION SHEET

VERTEX®

Enter number values in green boxes below

Enter values in the units specified

↓

18.87	Q_R = Enter upstream flow in **MGD**
0.144	Q_P = Enter discharge flow in **MGD**
0	Downstream 7Q10

Enter a dilution factor, if other than zero

↓

132

Enter values in the units specified

↓

16	C_d = Enter influent hardness in **mg/L** $CaCO_3$
16	C_s = Enter receiving water hardness in **mg/L** $CaCO_3$

Enter **receiving water** concentrations in the units specified

↓

7.66	pH in **Standard Units**
22.99	Temperature in **^oC**
0.063	Ammonia in **mg/L**
16	Hardness in **mg/L** $CaCO_3$
0	Salinity in **ppt**
0	Antimony in **µg/L**
0	Arsenic in **µg/L**
0	Cadmium in **µg/L**
0	Chromium III in **µg/L**
0	Chromium VI in **µg/L**
6.2	Copper in **µg/L**
0.13	Iron in **µg/L**
1.5	Lead in **µg/L**
0	Mercury in **µg/L**
0	Nickel in **µg/L**
2.3	Selenium in **µg/L**
0	Silver in **µg/L**
0	Zinc in **µg/L**

Enter **influent** concentrations in the units specified

↓

2.1	TRC in **µg/L**
0.42	Ammonia in **mg/L**
0	Antimony in **µg/L**
0	Arsenic in **µg/L**
0	Cadmium in **µg/L**
0	Chromium III in **µg/L**
0	Chromium VI in **µg/L**
55.6	Copper in **µg/L**
6910	Iron in **µg/L**
10	Lead in **µg/L**
0	Mercury in **µg/L**
0	Nickel in **µg/L**
0	Selenium in **µg/L**
0	Silver in **µg/L**
0	Zinc in **µg/L**
0	Cyanide in **µg/L**
14.5	Phenol in **µg/L**
0	Carbon Tetrachloride in **µg/L**
0	Tetrachloroethylene in **µg/L**
241.7	Total Phthalates in **µg/L**
0	Diethylhexylphthalate in **µg/L**
0	Benzo(a)anthracene in **µg/L**
0	Benzo(a)pyrene in **µg/L**
0	Benzo(b)fluoranthene in **µg/L**
0	Benzo(k)fluoranthene in **µg/L**
0	Chrysene in **µg/L**
0	Dibenzo(a,h)anthracene in **µg/L**
0	Indeno(1,2,3-cd)pyrene in **µg/L**
0	Methyl-tert butyl ether in **µg/L**

Notes:

Freshwater: Q_R equal to the 7Q10; enter alternate Q_R if approved by the State; enter 0 if no dilution factor
Saltwater (estuarine and marine): enter Q_R if approved by the State; enter 0 if no entry
Discharge flow is equal to the design flow or 1 MGD, whichever is less
Downstream 7Q10 an optional entry for Q_R; leave 0 if no entry

Saltwater (estuarine and marine): only if approved by the State
Leave 0 if no entry

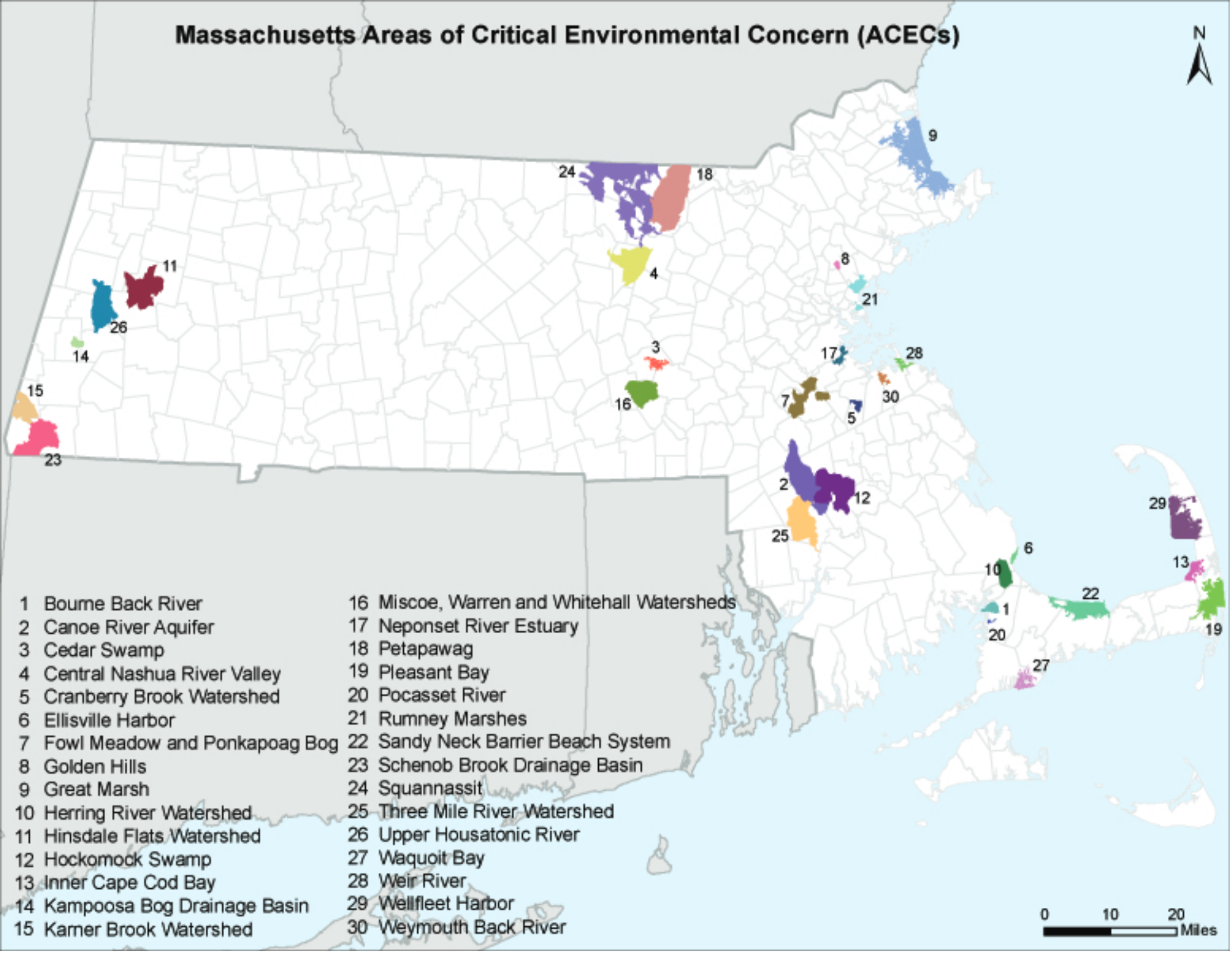
pH, temperature, and ammonia required for all discharges
Hardness required for freshwater
Salinity required for saltwater (estuarine and marine)
Metals required for all discharges if present and if dilution factor is > 1
Enter 0 if non-detect or testing not required

if >1 sample, enter maximum
if >10 samples, may enter 95th percentile
Enter 0 if non-detect or testing not required

Dilution Factor	132.0					
A. Inorganics	TBEL applies if bolded		WQBEL applies if bolded		Compliance Level applies if shown	
Ammonia	**Report**	mg/L	---			
Chloride	**Report**	µg/L	---			
Total Residual Chlorine	**0.2**	mg/L	1452	µg/L	---	µg/L
Total Suspended Solids	**30**	mg/L	---			
Antimony	**206**	µg/L	84507	µg/L		
Arsenic	**104**	µg/L	1320	µg/L		
Cadmium	**10.2**	µg/L	9.1920	µg/L		
Chromium III	**323**	µg/L	2536.8	µg/L		
Chromium VI	**323**	µg/L	1509.8	µg/L		
Copper	242	µg/L	**1.9**	µg/L		
Iron	**5000**	µg/L	132025	µg/L		
Lead	160	µg/L	**0.31**	µg/L		
Mercury	**0.739**	µg/L	119.61	µg/L		
Nickel	**1450**	µg/L	1461.4	µg/L		
Selenium	**235.8**	µg/L	358.8	µg/L		
Silver	**35.1**	µg/L	21.4	µg/L		
Zinc	**420**	µg/L	3348.7	µg/L		
Cyanide	**178**	mg/L	686.6	µg/L	---	µg/L
B. Non-Halogenated VOCs						
Total BTEX	**100**	µg/L	---			
Benzene	**5.0**	µg/L	---			
1,4 Dioxane	**200**	µg/L	---			
Acetone	**7970**	µg/L	---			
Phenol	**1,080**	µg/L	39613	µg/L		
C. Halogenated VOCs						
Carbon Tetrachloride	**4.4**	µg/L	211.3	µg/L		
1,2 Dichlorobenzene	**600**	µg/L	---			
1,3 Dichlorobenzene	**320**	µg/L	---			
1,4 Dichlorobenzene	**5.0**	µg/L	---			
Total dichlorobenzene	**---**	µg/L	---			
1,1 Dichloroethane	**70**	µg/L	---			
1,2 Dichloroethane	**5.0**	µg/L	---			
1,1 Dichloroethylene	**3.2**	µg/L	---			
Ethylene Dibromide	**0.05**	µg/L	---			
Methylene Chloride	**4.6**	µg/L	---			
1,1,1 Trichloroethane	**200**	µg/L	---			
1,1,2 Trichloroethane	**5.0**	µg/L	---			
Trichloroethylene	**5.0**	µg/L	---			
Tetrachloroethylene	**5.0**	µg/L	435.7	µg/L		
cis-1,2 Dichloroethylene	**70**	µg/L	---			
Vinyl Chloride	**2.0**	µg/L	---			
D. Non-Halogenated SVOCs						
Total Phthalates	**190**	µg/L	---	µg/L		
Diethylhexyl phthalate	**101**	µg/L	290.5	µg/L		
Total Group I Polycyclic Aromatic Hydrocarbons	**1.0**	µg/L	---			
Benzo(a)anthracene	**1.0**	µg/L	0.5018	µg/L	---	µg/L
Benzo(a)pyrene	**1.0**	µg/L	0.5018	µg/L	---	µg/L
Benzo(b)fluoranthene	**1.0**	µg/L	0.5018	µg/L	---	µg/L
Benzo(k)fluoranthene	**1.0**	µg/L	0.5018	µg/L	---	µg/L
Chrysene	**1.0**	µg/L	0.5018	µg/L	---	µg/L
Dibenzo(a,h)anthracene	**1.0**	µg/L	0.5018	µg/L	---	µg/L
Indeno(1,2,3-cd)pyrene	**1.0**	µg/L	0.5018	µg/L	---	µg/L
Total Group II Polycyclic Aromatic Hydrocarbons	**100**	µg/L	---			
Naphthalene	**20**	µg/L	---			
E. Halogenated SVOCs						
Total Polychlorinated Biphenyls	**0.000064**	µg/L	---		0.5	µg/L
Pentachlorophenol	**1.0**	µg/L	---			
F. Fuels Parameters						
Total Petroleum Hydrocarbons	**5.0**	mg/L	---			
Ethanol	**Report**	mg/L	---			
Methyl-tert-Butyl Ether	**70**	µg/L	2641	µg/L		
tert-Butyl Alcohol	**120**	µg/L	---			
tert-Amyl Methyl Ether	**90**	µg/L	---			

CORRESPONDENCE FROM THE U.S. FISH AND WILDLIFE SERVICE

Massachusetts Areas of Critical Environmental Concern (ACECs)



1 Bourne Back River
2 Canoe River Aquifer
3 Cedar Swamp
4 Central Nashua River Valley
5 Cranberry Brook Watershed
6 Ellisville Harbor
7 Fowl Meadow and Ponkapoag Bog
8 Golden Hills
9 Great Marsh
10 Herring River Watershed
11 Hinsdale Flats Watershed
12 Hockomock Swamp
13 Inner Cape Cod Bay
14 Kampoosa Bog Drainage Basin
15 Karner Brook Watershed
16 Miscoe, Warren and Whitehall Watersheds
17 Neponset River Estuary
18 Petapawag
19 Pleasant Bay
20 Pocasset River
21 Rumney Marshes
22 Sandy Neck Barrier Beach System
23 Schenob Brook Drainage Basin
24 Squannassit
25 Three Mile River Watershed
26 Upper Housatonic River
27 Waquoit Bay
28 Weir River
29 Wellfleet Harbor
30 Weymouth Back River

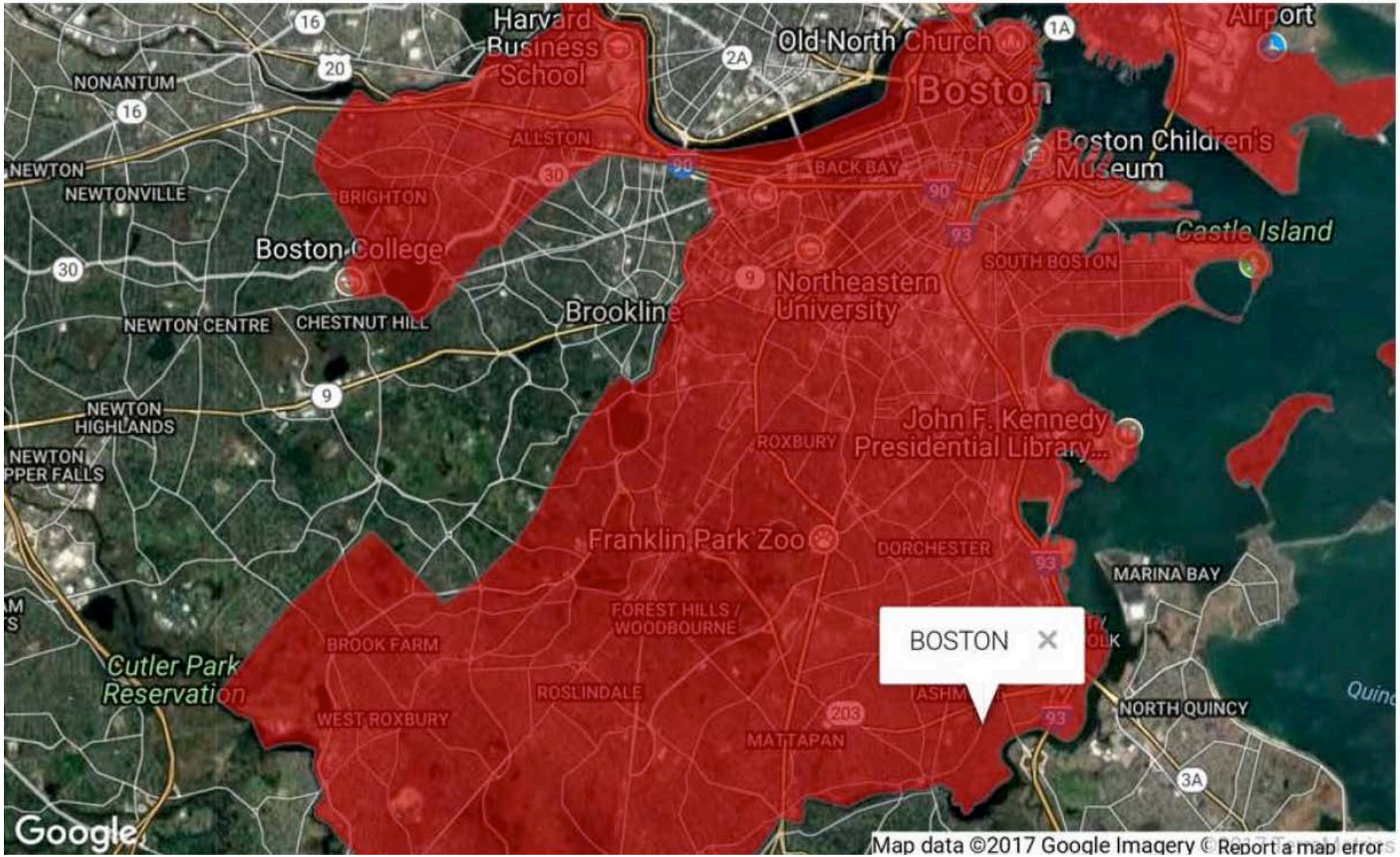
Town: BOSTON

or

Species (Common Name):

or

Species (Scientific Name):



September 13, 2017 Town Species Viewer
http://www.mass.gov/eea/agencies/dfg/dfw/natural-heritage/species-information-and-conservation/town-species-viewer.html

Town	Taxonomic Group	Scientific Name	Common Name	MESA Status	Federal Status	Most Recent Observation
BOSTON	Butterfly/Moth	Abagrotis nefascia	Coastal Heathland Cutworm	SC		2001
BOSTON	Bird	Accipiter striatus	Sharp-shinned Hawk	SC		1898
BOSTON	Vascular Plant	Ageratina aromatica	Lesser Snakeroot	E		1896
BOSTON	Amphibian	Ambystoma laterale	Blue-spotted Salamander	SC		2013
BOSTON	Bird	Ammodramus savannarum	Grasshopper Sparrow	T		1993
BOSTON	Butterfly/Moth	Apodrepanulatrix liberaria	New Jersey Tea Inchworm	E		Historic
BOSTON	Vascular Plant	Aristida purpurascens	Purple Needlegrass	T		1800s
BOSTON	Vascular Plant	Aristida tuberculosa	Seabeach Needlegrass	T		1877
BOSTON	Vascular Plant	Asclepias verticillata	Linear-leaved Milkweed	T		1878
BOSTON	Bird	Bartramia longicauda	Upland Sandpiper	E		1993
BOSTON	Vascular Plant	Boechera missouriensis	Green Rock-cress	T		1930
BOSTON	Vascular Plant	Carex striata	Walter's Sedge	E		Historic
BOSTON	Bird	Charadrius melodus	Piping Plover	T	T	2011
BOSTON	Beetle	Cicindela duodecimguttata	Twelve-spotted Tiger Beetle	SC		1910
BOSTON	Beetle	Cicindela purpurea	Cow Path Tiger Beetle	SC		1928
BOSTON	Beetle	Cicindela rufiventris hentzii	Eastern Red-bellied Tiger Beetle	T		1927
BOSTON	Vascular Plant	Desmodium cuspidatum	Large-bracted Tick-trefoil	T		1896
BOSTON	Vascular Plant	Eriophorum gracile	Slender Cottongrass	T		1885
BOSTON	Bird	Falco peregrinus	Peregrine Falcon	E		2014
BOSTON	Fish	Gasterosteus aculeatus	Threespine Stickleback	T		2014
BOSTON	Bird	Gavia immer	Common Loon	SC		1824
BOSTON	Vascular Plant	Houstonia longifolia	Long-leaved Bluet	E		1918
BOSTON	Vascular Plant	Liatris scariosa var. novae-angliae	New England Blazing Star	SC		1933
BOSTON	Mussel	Ligumia nasuta	Eastern Pondmussel	SC		1841
BOSTON	Vascular Plant	Linum medium var. texanum	Rigid Flax	T		1909
BOSTON	Vascular Plant	Lycopus rubellus	Gypsywort	E		1896
BOSTON	Butterfly/Moth	Metarranthis apiciaria	Barrens Metarranthis	E		1934
BOSTON	Vascular Plant	Myriophyllum alterniflorum	Alternate-flowered Water-milfoil	E		Historic
BOSTON	Vascular Plant	Ophioglossum pusillum	Adder's-tongue Fern	T		1884
BOSTON	Vascular Plant	Platanthera flava var. herbiola	Pale Green Orchis	T		1908
BOSTON	Bird	Pooecetes gramineus	Vesper Sparrow	T		1985
BOSTON	Butterfly/Moth	Pyrrhia aurantiago	Orange Sallow Moth	SC		1988
BOSTON	Vascular Plant	Ranunculus micranthus	Tiny-flowered Buttercup	E		1891
BOSTON	Vascular Plant	Rumex pallidus	Seabeach Dock	T		1984
BOSTON	Vascular Plant	Sanicula odorata	Long-styled Sanicle	T		Historic
BOSTON	Amphibian	Scaphiopus holbrookii	Eastern Spadefoot	T		1932
BOSTON	Vascular Plant	Scirpus longii	Long's Bulrush	T		1907
BOSTON	Vascular Plant	Setaria parviflora	Bristly Foxtail	SC		2001
BOSTON	Dragonfly/Damselfly	Somatochlora linearis	Mocha Emerald	SC		2009
BOSTON	Bird	Sterna hirundo	Common Tern	SC		2013
BOSTON	Bird	Sternula antillarum	Least Tern	SC		2013
BOSTON	Vascular Plant	Suaeda calceoliformis	American Sea-blite	SC		1909
BOSTON	Reptile	Terrapene carolina	Eastern Box Turtle	SC		1939
BOSTON	Bird	Tyto alba	Barn Owl	SC		1989
BOSTON	Bird	Vermivora chrysoptera	Golden-winged Warbler	E		Historic
BOSTON	Vascular Plant	Viola brittoniana	Britton's Violet	T		1909

MassDEP - Bureau of Waste Site Cleanup

Phase 1 Site Assessment Map: 500 feet & 0.5 Mile Radii

Site Information:
ONE CONGRESS STREET
ONE CONGRESS STREET BOSTON, MA

NAD83 UTM Meters:
4692059mN , 330402mE (Zone: 19)
June 22, 2016

The information shown is the best available at the date of printing. However, it may be incomplete. The responsible party and LSP are ultimately responsible for ascertaining the true conditions surrounding the site. Metadata for data layers shown on this map can be found at: http://www.mass.gov/mgis/.

MassDEP
Commonwealth of Massachusetts
Department of Environmental Protection

Roads: Limited Access, Divided, Other Hwy, Major Road, Minor Road, Track, Trail

Boundaries: Town, County, DEP Region; Train; Powerline; Pipeline; Aqueduct

Basins: Major, PWS; Streams: Perennial, Intermittent, Man Made Shore, Dam

Aquifers: Medium Yield, High Yield, EPA Sole Source

Non Potential Drinking Water Source Area: Medium, High (Yield)

PWS Protection Areas: Zone II, IWPA, Zone A

Hydrography: Open Water, PWS Reservoir, Tidal Flat

Wetlands: Freshwater, Saltwater, Cranberry Bog

FEMA 100yr Floodplain; Protected Open Space; ACEC

Est. Rare Wetland Wildlife Hab; Vernal Pool: Cert., Potential

Solid Waste Landfill; PWS: Com.GW,SW, Emerg., Non-Com.

FEDERALLY LISTED ENDANGERED AND THREATENED SPECIES IN MASSACHUSETTS

COUNTY	SPECIES	FEDERAL STATUS	GENERAL LOCATION/HABITAT	TOWNS
Barnstable	Piping Plover	Threatened	Coastal Beaches	All Towns
	Roseate Tern	Endangered	Coastal beaches and the Atlantic Ocean	All Towns
	Northeastern beach tiger beetle	Threatened	Coastal Beaches	Chatham
	Sandplain gerardia	Endangered	Open areas with sandy soils.	Sandwich and Falmouth.
	Northern Red-bellied Cooter	Endangered	Inland Ponds and Rivers	Bourne (north of the Cape Cod Canal)
	Red Knot[1]	Threatened	Coastal Beaches and Rocky Shores, sand and mud flats	Coastal Towns
	Northern Long-eared Bat	Threatened Final 4(d) Rule	Winter- mines and caves, Summer – wide variety of forested habitats	Statewide
Berkshire	Bog Turtle	Threatened	Wetlands	Egremont and Sheffield
	Northern Long-eared Bat	Threatened Final 4(d) Rule	Winter- mines and caves, Summer – wide variety of forested habitats	Statewide
Bristol	Piping Plover	Threatened	Coastal Beaches	Fairhaven, Dartmouth, Westport
	Roseate Tern	Endangered	Coastal beaches and the Atlantic Ocean	Fairhaven, New Bedford, Dartmouth, Westport
	Northern Red-bellied Cooter	Endangered	Inland Ponds and Rivers	Taunton
	Red Knot[1]	Threatened	Coastal Beaches and Rocky Shores, sand and mud flats	Coastal Towns
	Northern Long-eared Bat	Threatened Final 4(d) Rule	Winter- mines and caves, Summer – wide variety of forested habitats	Statewide
Dukes	Roseate Tern	Endangered	Coastal beaches and the Atlantic Ocean	All Towns
	Piping Plover	Threatened	Coastal Beaches	All Towns
	Northeastern beach tiger beetle	Threatened	Coastal Beaches	Aquinnah and Chilmark
	Sandplain gerardia	Endangered	Open areas with sandy soils.	West Tisbury
	Red Knot[1]	Threatened	Coastal Beaches and Rocky Shores, sand and mud flats	Coastal Towns
	Northern Long-eared Bat	Threatened Final 4(d) Rule	Winter- mines and caves, Summer – wide variety of forested habitats	Statewide

Updated 02/05/2016

FEDERALLY LISTED ENDANGERED AND THREATENED SPECIES IN MASSACHUSETTS

COUNTY	SPECIES	FEDERAL STATUS	GENERAL LOCATION/HABITAT	TOWNS
Essex	Small whorled Pogonia	Threatened	Forests with somewhat poorly drained soils and/or a seasonally high water table	Gloucester, Essex and Manchester
	Piping Plover	Threatened	Coastal Beaches	Gloucester, Essex, Ipswich, Rowley, Revere, Newbury, Newburyport and Salisbury
	Red Knot[1]	Threatened	Coastal Beaches and Rocky Shores, sand and mud flats	Coastal Towns
	Northern Long-eared Bat	Threatened Final 4(d) Rule	Winter- mines and caves, Summer – wide variety of forested habitats	Statewide
Franklin	Northeastern bulrush	Endangered	Wetlands	Montague, Warwick
	Dwarf wedgemussel	Endangered	Mill River	Whately
	Northern Long-eared Bat	Threatened Final 4(d) Rule	Winter- mines and caves, Summer – wide variety of forested habitats	Statewide
Hampshire	Small whorled Pogonia	Threatened	Forests with somewhat poorly drained soils and/or a seasonally high water table	Hadley
	Puritan tiger beetle	Threatened	Sandy beaches along the Connecticut River	Northampton and Hadley
	Dwarf wedgemussel	Endangered	Rivers and Streams.	Hatfield, Amherst and Northampton
	Northern Long-eared Bat	Threatened Final 4(d) Rule	Winter- mines and caves, Summer – wide variety of forested habitats	Statewide
Hampden	Small whorled Pogonia	Threatened	Forests with somewhat poorly drained soils and/or a seasonally high water table	Southwick
	Northern Long-eared Bat	Threatened Final 4(d) Rule	Winter- mines and caves, Summer – wide variety of forested habitats	Statewide
Middlesex	Small whorled Pogonia	Threatened	Forests with somewhat poorly drained soils and/or a seasonally high water table	Groton
	Northern Long-eared Bat	Threatened Final 4(d) Rule	Winter- mines and caves, Summer – wide variety of forested habitats	Statewide
Nantucket	Piping Plover	Threatened	Coastal Beaches	Nantucket
	Roseate Tern	Endangered	Coastal beaches and the Atlantic Ocean	Nantucket
	American burying beetle	Endangered	Upland grassy meadows	Nantucket
	Red Knot[1]	Threatened	Coastal Beaches and Rocky Shores, sand and mud flats	Coastal Towns
	Northern Long-eared Bat	Threatened Final 4(d) Rule	Winter- mines and caves, Summer – wide variety of forested habitats	Statewide

Updated 02/05/2016

FEDERALLY LISTED ENDANGERED AND THREATENED SPECIES IN MASSACHUSETTS

COUNTY	SPECIES	FEDERAL STATUS	GENERAL LOCATION/HABITAT	TOWNS
Plymouth	Piping Plover	Threatened	Coastal Beaches	Scituate, Marshfield, Duxbury, Plymouth, Wareham and Mattapoisett
	Northern Red-bellied Cooter	Endangered	Inland Ponds and Rivers	Kingston, Middleborough, Carver, Plymouth, Bourne, Wareham, Halifax, and Pembroke
	Roseate Tern	Endangered	Coastal beaches and the Atlantic Ocean	Plymouth, Marion, Wareham, and Mattapoisett.
	Red Knot[1]	Threatened	Coastal Beaches and Rocky Shores, sand and mud flats	Coastal Towns
	Northern Long-eared Bat	Threatened Final 4(d) Rule	Winter- mines and caves, Summer – wide variety of forested habitats	Statewide
Suffolk	Piping Plover	Threatened	Coastal Beaches	Revere, Winthrop
	Red Knot[1]	Threatened	Coastal Beaches and Rocky Shores, sand and mud flats	Coastal Towns
	Northern Long-eared Bat	Threatened Final 4(d) Rule	Winter- mines and caves, Summer – wide variety of forested habitats	Statewide
Worcester	Small whorled Pogonia	Threatened	Forests with somewhat poorly drained soils and/or a seasonally high water table	Leominster
	Northern Long-eared Bat	Threatened Final 4(d) Rule	Winter- mines and caves, Summer – wide variety of forested habitats	Statewide

[1]Migratory only, scattered along the coast in small numbers

-Eastern cougar and gray wolf are considered extirpated in Massachusetts.
-Endangered gray wolves are not known to be present in Massachusetts, but dispersing individuals from source populations in Canada may occur statewide.
-Critical habitat for the Northern Red-bellied Cooter is present in Plymouth County.

Updated 02/05/2016

United States Department of the Interior

FISH AND WILDLIFE SERVICE
New England Ecological Services Field Office
70 COMMERCIAL STREET, SUITE 300
CONCORD, NH 03301
PHONE: (603)223-2541 FAX: (603)223-0104
URL: www.fws.gov/newengland

Consultation Code: 05E1NE00-2016-SLI-1668 June 22, 2016
Event Code: 05E1NE00-2016-E-02416
Project Name: One Congress Street Development

Subject: List of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 *et seq.*), and projects affecting these species may require development of an eagle conservation plan (http://www.fws.gov/windenergy/eagle_guidance.html). Additionally, wind energy projects should follow the wind energy guidelines (http://www.fws.gov/windenergy/) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm; http://www.towerkill.com; and http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment

United States Department of Interior
Fish and Wildlife Service

Project name: One Congress Street Development

Official Species List

Provided by:

New England Ecological Services Field Office
70 COMMERCIAL STREET, SUITE 300
CONCORD, NH 03301
(603) 223-2541
http://www.fws.gov/newengland

Consultation Code: 05E1NE00-2016-SLI-1668
Event Code: 05E1NE00-2016-E-02416

Project Type: DEVELOPMENT

Project Name: One Congress Street Development
Project Description: Renovation of the existing 11 story garage. The garage has 9 floors of parking and 2 floors of office space. The renovations in question will be the relocation of access ramps and drive lanes to provide access around future proposed construction.

Please Note: The FWS office may have modified the Project Name and/or Project Description, so it may be different from what was submitted in your previous request. If the Consultation Code matches, the FWS considers this to be the same project. Contact the office in the 'Provided by' section of your previous Official Species list if you have any questions or concerns.

Project Location Map:

Project Coordinates: MULTIPOLYGON (((-71.05850011110306 42.36325099040383, -71.06033205986023 42.36236906043124, -71.05977684259415 42.36196277391919, -71.05794221162796 42.36285858264135, -71.05850011110306 42.36325099040383)))

Project Counties: Suffolk, MA

Endangered Species Act Species List

There are a total of 1 threatened or endangered species on your species list. Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species. Critical habitats listed under the **Has Critical Habitat** column may or may not lie within your project area. See the **Critical habitats within your project area** section further below for critical habitat that lies within your project. Please contact the designated FWS office if you have questions.

Birds	Status	Has Critical Habitat	Condition(s)
Red Knot *(Calidris canutus rufa)*	Threatened		

Critical habitats that lie within your project area

There are no critical habitats within your project area.

NATIONAL REGISTER OF HISTORIC PLACES AND MASSACHUSETTS HISTORICAL COMMISSION DOCUMENTATION

VERTEX®

Massachusetts Cultural Resource Information System

MACRIS

MACRIS Search Results

Search Criteria: Town(s): Boston; Place: Government Center; Resource Type(s): Area, Building, Burial Ground, Object, Structure;

Inv. No.	Property Name	Street	Town	Year
BOS.AV	Sears' Crescent and Sears' Block		Boston	
BOS.1508	McCormack, John W. State Office Building	1 Ashburton Pl	Boston	1975
BOS.1509	Massachusetts Teachers Association Building	20 Ashburton Pl	Boston	c 1965
BOS.1551	One Beacon Street	1 Beacon St	Boston	c 1969
BOS.1552	Lawyers Building	9 Beacon St	Boston	1922
BOS.1553	Boston Transit Commission Building	15 Beacon St	Boston	1903
BOS.1554	Hotel Bellevue	19-21B Beacon St	Boston	1899
BOS.1576	Beacon Hill Apartment House	126 Bowdoin St	Boston	c 1927
BOS.1577	Church of the New Jerusalem - Church On The Hill	140 Bowdoin St	Boston	1963
BOS.1578	Boston Society of the New Jerusalem Building	144 Bowdoin St	Boston	c 1925
BOS.1579	Way, Samuel A. Carriage House	146-150 Bowdoin St	Boston	1870
BOS.1904	Temporary Home for Women	40-50 Bowker St	Boston	1924
BOS.1582	Bradlee, James Bowdoin Building	50-54 Broad St	Boston	1853
BOS.917	Bowdoin Street Subway Station	Cambridge St	Boston	1916
BOS.918	Scollay Square Under Subway Station	Cambridge St	Boston	1916
BOS.922	Scollay Square - Government Center Subway Station	1 Cambridge St	Boston	1898
BOS.1575	New England Telephone and Telegraph Company	65 Cambridge St	Boston	1930
BOS.1616	Saltonstall, Leverett State Office Building	100 Cambridge St	Boston	1965
BOS.1618	Massachusetts Health, Welfare and Education Center	115 Cambridge St	Boston	r 1965
BOS.1645	One, Two and Three Center Plaza	1-3 Center Plaza	Boston	r 1965
BOS.1656	Kirstein Memorial Library	20 City Hall Ave	Boston	1930
BOS.1657	Boston City Hall	1 City Hall Sq	Boston	r 1965
BOS.1672	Sears' Crescent	38-68 Cornhill St	Boston	1816
BOS.1673	Sears' Block	70-72 Cornhill St	Boston	1848

Inv. No.	Property Name	Street	Town	Year
BOS.1674		38 Court Sq	Boston	1914
BOS.1678	Ames Building, The	1 Court St	Boston	c 1889
BOS.1671	Old Colony Trust Company	17 Court St	Boston	1923
BOS.1679	Old Colony Trust Company Building	17 Court St	Boston	1908
BOS.1680	City Bank and Trust Company Building	25 Court St	Boston	1967
BOS.1676	Boston City Hall Annex	26 Court St	Boston	1912
BOS.1677	Scollay Building	30-40 Court St	Boston	1914
BOS.1614	Capital Bank Building	30 Hawkins St	Boston	1972
BOS.948	Edison Electric Illuminating Substation	33 Hawkins St	Boston	1927
BOS.1783	Overseers of Public Welfare Building	35 Hawkins St	Boston	1924
BOS.1782	R. K. O. General Building	40 Hawkins St	Boston	1967
BOS.1901	Bulfinch Building	15 New Chardon St	Boston	1968
BOS.1902	Royal Globe Insurance Company	25 New Chardon St	Boston	1967
BOS.1903	Jewish Family and Children's Service	31 New Chardon St	Boston	1967
BOS.1617	Kennedy, John F. Federal Office Building	15 New Sudbury St	Boston	1966
BOS.2023	Boston District #1 Police Station	40 New Sudbury St	Boston	1968
BOS.2024	Government Center Parking Garage	50 New Sudbury St	Boston	1966
BOS.938	Choate, Rufus Statue	Pemberton Sq	Boston	1898
BOS.1573	Suffolk County Courthouse Addition	1 Pemberton Sq	Boston	c 1936
BOS.1945	Adams, John Courthouse	1 Pemberton Sq	Boston	r 1885
BOS.1675	Thompson's Spa	15 Pie Alley	Boston	1922
BOS.1970	Boston Five Cents Savings Bank	10 School St	Boston	c 1972
BOS.1974	Hunnewell, Horatio Hollis Building	13-15 School St	Boston	1888
BOS.1975	Codman, Martha C. Building	19-21 School St	Boston	1917
BOS.1976	Niles Building	23-29 School St	Boston	1915
BOS.932	Franklin, Benjamin Statue	41-45 School St	Boston	1855
BOS.936	Quincy, Josiah Statue	41-45 School St	Boston	1879
BOS.1977	Old City Hall	41-45 School St	Boston	1862
BOS.1979	Boston City Club	12-14 Somerset St	Boston	1913
BOS.1980	Metropolitan District Commission Building	20 Somerset St	Boston	1932
BOS.919	Devonshire - State Street Subway Station	State St	Boston	1904
BOS.2107	Old State House	State St	Boston	1712
BOS.803	King's Chapel Burying Ground	Tremont St	Boston	1630
BOS.2064	Hemenway Building	2-16 Tremont St	Boston	1883
BOS.2065	Kimball Building	18-28 Tremont St	Boston	1902
BOS.2067	King's Chapel	58 Tremont St	Boston	r 1750
BOS.2068	Tremont Building	67-81 Tremont St	Boston	1895
BOS.2106	One Washington Mall	1 Washington Mall	Boston	1972

Inv. No.	Property Name	Street	Town	Year
BOS.2124	Boston Company Building, The	197-235 Washington St	Boston	1968
BOS.1569	Boston Company Building	201 Washington St	Boston	1970
BOS.2125	Coffman's Washington Street Garage	227-245 Washington St	Boston	1966
BOS.2126	Cunningham, Andrew House	277-279 Washington St	Boston	r 1725
BOS.2127	Old Corner Bookstore, The	277-285 Washington St	Boston	1718

Massachusetts Cultural Resource Information System

MACRIS

MACRIS Search Results

Search Criteria: Town(s): Boston; Place: West End;

Inv. No.	Property Name	Street	Town	Year
BOS.CA	Charles River Basin Historic District		Boston	
BOS.4156		23-25 Anderson St	Boston	1910
BOS.4186	Holiday Inn	5 Blossom St	Boston	1967
BOS.4158	West End House	16-18 Blossom St	Boston	1929
BOS.4159	Winchell Elementary School	24 Blossom St	Boston	1884
BOS.4190	Pratt, Dr. John W. House	Cambridge St	Boston	1892
BOS.9034	Longfellow Bridge - West Boston Bridge	Cambridge St	Boston	c 1900
BOS.4160		106 Cambridge St	Boston	1925
BOS.4161		116-120 Cambridge St	Boston	1928
BOS.4162		122-128 Cambridge St	Boston	1925
BOS.4182	Old West Church	131 Cambridge St	Boston	1806
BOS.4163		138 Cambridge St	Boston	1901
BOS.4183	Otis, First Harrison Gray House	141 Cambridge St	Boston	1796
BOS.4164		148 Cambridge St	Boston	c 1850
BOS.4184	Boston Public Library - West End Branch	155 Cambridge St	Boston	1968
BOS.4165		156-172 Cambridge St	Boston	1926
BOS.4185	Charles River Plaza	161-209 Cambridge St	Boston	1965
BOS.4166	McGauley Building	180 Cambridge St	Boston	1910
BOS.4167	Boston Ladder Company #24 Fire House	200 Cambridge St	Boston	1964
BOS.4168		204 Cambridge St	Boston	c 1928
BOS.4169		210 Cambridge St	Boston	c 1860
BOS.4170	Puffer, Alvin D. Commercial Building	214-218 Cambridge St	Boston	1896
BOS.4171		222-224 Cambridge St	Boston	r 1865
BOS.4172		226-234 Cambridge St	Boston	r 1865
BOS.4173		236-240 Cambridge St	Boston	r 1865
BOS.4187	Exxon Gas Station	239 Cambridge St	Boston	1937
BOS.4174		242 Cambridge St	Boston	1890

Inv. No.	Property Name	Street	Town	Year
BOS.9428		245 Cambridge St	Boston	c 1980
BOS.4175		248-270 Cambridge St	Boston	1925
BOS.4189	Mobil Gas Station	261 Cambridge St	Boston	c 1930
BOS.4176		272-274 Cambridge St	Boston	c 1910
BOS.4177		276-280 Cambridge St	Boston	c 1910
BOS.4178		282-284 Cambridge St	Boston	c 1910
BOS.4179		286-288 Cambridge St	Boston	c 1910
BOS.4191		295-299 Cambridge St	Boston	1912
BOS.4180	Sunoco Gas Station	296 Cambridge St	Boston	1941
BOS.4192		301-303 Cambridge St	Boston	c 1925
BOS.4193		305-307 Cambridge St	Boston	c 1895
BOS.4194		309-311 Cambridge St	Boston	c 1940
BOS.4181	Harvard Gardens Restaurant	310-316 Cambridge St	Boston	c 1925
BOS.4195		313 Cambridge St	Boston	1896
BOS.4196	Boston Edison Electric Company Substation	317-325 Cambridge St	Boston	1924
BOS.4197	Colonial Beacon Oil Company Lubritorium	327 Cambridge St	Boston	1937
BOS.4198	Charles Street Subway Station	Charles Circ	Boston	1932
BOS.927	Charles River Railroad Bridge at North Station	Charles River	Boston	1931
BOS.4200	Suffolk County Jail	215 Charles St	Boston	1851
BOS.9036	East Boston Tunnel Extension	East Boston Tunnel	Boston	1916
BOS.9041	Embankment Road	Embankment Rd	Boston	c 1949
BOS.4201	Massachusetts General Hospital - Bulfinch Building	Fruit St	Boston	c 1823
BOS.9037	Massachusetts General Hospital - Ether Dome	Fruit St	Boston	c 1823
BOS.9033	Beacon Hill Subway Tunnel	Lindall Pl	Boston	1909
BOS.4157		31 N Anderson St	Boston	c 1910
BOS.4202	Registry of Motor Vehicles Building	100 Nashua St	Boston	1932
BOS.9032	East Cambridge Viaduct - Lechmere Viaduct	O'Brien Hwy	Boston	1910
BOS.9039	Charles River Dam Bridge	O'Brien Hwy	Boston	1961
BOS.4203	State Service Center	25 Staniford St	Boston	1970
BOS.4204	Eye Research Institute	99 West Cedar St	Boston	1957
BOS.4205	Twelfth Congregational Church	68 Wm. C. O'Connell Way	Boston	1823
BOS.15230	Saint Joseph's Roman Catholic Church Rectory	70 Wm. C. O'Connell Way	Boston	c 1902

LABORATY ANALYTICAL REPORTS

VERTEX®

CERTIFICATE OF ANALYSIS

Jesse Freeman
The Vertex Companies
1 Congress St
Boston, MA 02114

RE: 1 Congress St - NPDES (20026)
ESS Laboratory Work Order Number: 1606245

This signed Certificate of Analysis is our approved release of your analytical results. These results are only representative of sample aliquots received at the laboratory. ESS Laboratory expects its clients to follow all regulatory sampling guidelines. Beginning with this page, the entire report has been paginated. This report should not be copied except in full without the approval of the laboratory. Samples will be disposed of thirty days after the final report has been delivered. If you have any questions or concerns, please feel free to call our Customer Service Department.

Laurel Stoddard
Laboratory Director

REVIEWED
By ESS Laboratory at 3:28 pm, Jun 21, 2016

Analytical Summary
The project as described above has been analyzed in accordance with the ESS Quality Assurance Plan. This plan utilizes the following methodologies: US EPA SW-846, US EPA Methods for Chemical Analysis of Water and Wastes per 40 CFR Part 136, APHA Standard Methods for the Examination of Water and Wastewater, American Society for Testing and Materials (ASTM), and other recognized methodologies. The analyses with these noted observations are in conformance to the Quality Assurance Plan. In chromatographic analysis, manual integration is frequently used instead of automated integration because it produces more accurate results.

The test results present in this report are in compliance with NELAC Standards, A2LA and/or client Quality Assurance Project Plans (QAPP). The laboratory has reviewed the following: Sample Preservations, Hold Times, Initial Calibrations, Continuing Calibrations, Method Blanks, Blank Spikes, Blank Spike Duplicates, Duplicates, Matrix Spikes, Matrix Spike Duplicates, Surrogates and Internal Standards. Any results which were found to be outside of the recommended ranges stated in our SOPs will be noted in the Project Narrative.

CERTIFICATE OF ANALYSIS

Client Name: The Vertex Companies
Client Project ID: 1 Congress St - NPDES

ESS Laboratory Work Order: 1606245

SAMPLE RECEIPT

The following samples were received on June 09, 2016 for the analyses specified on the enclosed Chain of Custody Record.

The samples and analyses listed below were analyzed in accordance with the Guidelines Establishing Test Procedures for the Analysis of Pollutants, 40 CFR Part 136, as amended.

Lab Number	Sample Name	Matrix	Analysis
1606245-01	NPDES-T2-100	Waste Water	1664A, 245.1, 2540D, 420.1, 4500 CN CE, 4500-Cl E, 504.1, 6010C, 608, 624, 7010, 7196A, 8270D, 8270D SIM

CERTIFICATE OF ANALYSIS

Client Name: The Vertex Companies
Client Project ID: 1 Congress St - NPDES

ESS Laboratory Work Order: 1606245

PROJECT NARRATIVE

608 Polychlorinated Biphenyls (PCB)

1606245-01 **Surrogate recovery(ies) outside of criteria. Reextraction/Reanalysis confirms results (SC).**
Decachlorobiphenyl (20% @ 30-150%), Decachlorobiphenyl [2C] (12% @ 30-150%)

608/6630C Organochlorine Pesticides

1606245-01 **Percent difference between primary and confirmation results exceeds 40% (P).**
Endosulfan I [2C]

1606245-01 **Surrogate recovery(ies) outside of criteria. Reextraction/Reanalysis confirms results (SC).**
Decachlorobiphenyl (11% @ 30-150%)

CF61439-BSD1 **Relative percent difference for duplicate is outside of criteria (D+).**
Endrin Aldehyde (22% @ 20%)

CZF0252-CCV3 **Continuing Calibration %Diff/Drift is above control limit (CD+).**
Decachlorobiphenyl [2C] (16% @ 15%), delta-BHC [2C] (18% @ 15%), Endosulfan Sulfate [2C] (17% @ 15%), Methoxychlor [2C] (36% @ 15%)

624 Volatile Organic Compounds

CF61028-BSD1 **Blank Spike recovery is below lower control limit (B-).**
Acrolein - Screen (29% @ 70-130%)

CF61028-BSD1 **Relative percent difference for duplicate is outside of criteria (D+).**
Acrolein - Screen (88% @ 25%), Tetrachloroethene (32% @ 25%)

8270C Semi-Volatile Organic Compounds

CZF0245-CCV1 **Calibration required quadratic regression (Q).**
2,4-Dinitrophenol (88% @ 80-120%), Di-n-octylphthalate (92% @ 80-120%)

CZF0247-CCV1 **Calibration required quadratic regression (Q).**
2,4-Dinitrophenol (98% @ 80-120%), Di-n-octylphthalate (89% @ 80-120%)

8270D(SIM) Semi-Volatile Organic Compounds

CZF0248-CCV1 **Calibration required quadratic regression (Q).**
Pentachlorophenol (120% @ 80-120%)

CZF0248-CCV1 **Continuing Calibration %Diff/Drift is above control limit (CD+).**
2,4,6-Tribromophenol (32% @ 20%)

Classical Chemistry

1606245-01 **The maximum holding time listed in 40 CFR Part 136 Table II for pH, Dissolved Oxygen, Sulfite and Residual Chlorine is fifteen minutes.**

CF61020-BLK1 **The maximum holding time listed in 40 CFR Part 136 Table II for pH, Dissolved Oxygen, Sulfite and Residual Chlorine is fifteen minutes.**

CF61020-BS1 **The maximum holding time listed in 40 CFR Part 136 Table II for pH, Dissolved Oxygen, Sulfite and Residual Chlorine is fifteen minutes.**

CERTIFICATE OF ANALYSIS

Client Name: The Vertex Companies
Client Project ID: 1 Congress St - NPDES

ESS Laboratory Work Order: 1606245

No other observations noted.

End of Project Narrative.

DATA USABILITY LINKS

Definitions of Quality Control Parameters

Semivolatile Organics Internal Standard Information

Semivolatile Organics Surrogate Information

Volatile Organics Internal Standard Information

Volatile Organics Surrogate Information

EPH and VPH Alkane Lists

CERTIFICATE OF ANALYSIS

Client Name: The Vertex Companies
Client Project ID: 1 Congress St - NPDES

ESS Laboratory Work Order: 1606245

CURRENT SW-846 METHODOLOGY VERSIONS

Analytical Methods

1010A - Flashpoint
6010C - ICP
6020A - ICP MS
7010 - Graphite Furnace
7196A - Hexavalent Chromium
7470A - Aqueous Mercury
7471B - Solid Mercury
8011 - EDB/DBCP/TCP
8015D - GRO/DRO
8081B - Pesticides
8082A - PCB
8100M - TPH
8151A - Herbicides
8260B - VOA
8270D - SVOA
8270D SIM - SVOA Low Level
9014 - Cyanide
9038 - Sulfate
9040C - Aqueous pH
9045D - Solid pH (Corrosivity)
9050A - Specific Conductance
9056A - Anions (IC)
9060A - TOC
9095B - Paint Filter
MADEP 04-1.1 - EPH / VPH

Prep Methods

3005A - Aqueous ICP Digestion
3020A - Aqueous Graphite Furnace / ICP MS Digestion
3050B - Solid ICP / Graphite Furnace / ICP MS Digestion
3060A - Solid Hexavalent Chromium Digestion
3510C - Separatory Funnel Extraction
3520C - Liquid / Liquid Extraction
3540C - Manual Soxhlet Extraction
3541 - Automated Soxhlet Extraction
3546 - Microwave Extraction
3580A - Waste Dilution
5030B - Aqueous Purge and Trap
5030C - Aqueous Purge and Trap
5035 - Solid Purge and Trap

SW846 Reactivity Methods 7.3.3.2 (Reactive Cyanide) and 7.3.4.1 (Reactive Sulfide) have been withdrawn by EPA. These methods are reported per client request and are not NELAP accredited.

CERTIFICATE OF ANALYSIS

Client Name: The Vertex Companies
Client Project ID: 1 Congress St - NPDES
Client Sample ID: NPDES-T2-100
Date Sampled: 06/09/16 12:00
Percent Solids: N/A

ESS Laboratory Work Order: 1606245
ESS Laboratory Sample ID: 1606245-01
Sample Matrix: Waste Water
Units: ug/L

Extraction Method: 3005A
All methods used are in accordance with 40 CFR 136.

Total Metals

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Antimony	ND (10.0)		7010		1	KJK	06/15/16 12:26	50	50	CF61019
Arsenic	ND (10.0)		7010		1	KJK	06/16/16 16:52	50	50	CF61019
Cadmium	ND (1.0)		7010		1	KJK	06/17/16 14:34	50	50	CF61019
Chromium	ND (20.0)		6010C		1	KJK	06/10/16 19:28	50	50	CF61019
Chromium III	ND (20)		6010C		1	MJV	06/10/16 19:28	1	1	[CALC]
Copper	**55.6** (10.0)		6010C		1	KJK	06/10/16 19:28	50	50	CF61019
Iron	**6910** (100)		6010C		1	KJK	06/10/16 19:28	50	50	CF61019
Lead	**10.0** (5.0)		7010		1	KJK	06/15/16 2:03	50	50	CF61019
Mercury	ND (0.20)		245.1		1	AA	06/10/16 12:26	20	40	CF60908
Nickel	ND (20.0)		6010C		1	KJK	06/10/16 19:28	50	50	CF61019
Selenium	ND (10.0)		7010		1	KJK	06/14/16 21:35	50	50	CF61019
Silver	ND (0.5)		7010		1	DEL	06/20/16 13:37	50	50	CF61019
Zinc	ND (50.0)		6010C		1	KJK	06/10/16 19:28	50	50	CF61019

CERTIFICATE OF ANALYSIS

Client Name: The Vertex Companies
Client Project ID: 1 Congress St - NPDES
Client Sample ID: NPDES-T2-100
Date Sampled: 06/09/16 12:00
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 1
Extraction Method: 3510C

ESS Laboratory Work Order: 1606245
ESS Laboratory Sample ID: 1606245-01
Sample Matrix: Waste Water
Units: ug/L
Analyst: TJ
Prepared: 6/10/16 11:10

All methods used are in accordance with 40 CFR 136.

608 Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.09)		608		1	06/10/16 17:33		CF61011
Aroclor 1221	ND (0.09)		608		1	06/10/16 17:33		CF61011
Aroclor 1232	ND (0.09)		608		1	06/10/16 17:33		CF61011
Aroclor 1242	ND (0.09)		608		1	06/10/16 17:33		CF61011
Aroclor 1248	ND (0.09)		608		1	06/10/16 17:33		CF61011
Aroclor 1254	ND (0.09)		608		1	06/10/16 17:33		CF61011
Aroclor 1260	ND (0.09)		608		1	06/10/16 17:33		CF61011
Aroclor 1262	ND (0.09)		608		1	06/10/16 17:33		CF61011
Aroclor 1268	ND (0.09)		608		1	06/10/16 17:33		CF61011

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	*20 %*	*SC*	*30-150*
Surrogate: Decachlorobiphenyl [2C]	*12 %*	*SC*	*30-150*
Surrogate: Tetrachloro-m-xylene	*66 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*97 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: The Vertex Companies
Client Project ID: 1 Congress St - NPDES
Client Sample ID: NPDES-T2-100
Date Sampled: 06/09/16 12:00
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 5
Extraction Method: 3510C

ESS Laboratory Work Order: 1606245
ESS Laboratory Sample ID: 1606245-01
Sample Matrix: Waste Water
Units: ug/L
Analyst: TJ
Prepared: 6/14/16 15:32

All methods used are in accordance with 40 CFR 136.

608/6630C Organochlorine Pesticides

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
4,4´-DDD	ND (0.05)		608		1	06/14/16 22:42	CZF0252	CF61439
4,4´-DDE	ND (0.05)		608		1	06/14/16 22:42	CZF0252	CF61439
4,4´-DDT	ND (0.05)		608		1	06/14/16 22:42	CZF0252	CF61439
Aldrin	ND (0.05)		608		1	06/14/16 22:42	CZF0252	CF61439
alpha-BHC	ND (0.05)		608		1	06/14/16 22:42	CZF0252	CF61439
beta-BHC	ND (0.05)		608		1	06/14/16 22:42	CZF0252	CF61439
Chlordane (Total)	ND (0.47)		608		1	06/14/16 22:42	CZF0252	CF61439
delta-BHC	ND (0.05)		608		1	06/14/16 22:42	CZF0252	CF61439
Dieldrin	ND (0.05)		608		1	06/14/16 22:42	CZF0252	CF61439
Endosulfan I [2C]	**P 0.12** (0.05)		608		1	06/14/16 22:42	CZF0252	CF61439
Endosulfan II	ND (0.05)		608		1	06/14/16 22:42	CZF0252	CF61439
Endosulfan Sulfate	ND (0.05)		608		1	06/14/16 22:42	CZF0252	CF61439
Endrin	ND (0.05)		608		1	06/14/16 22:42	CZF0252	CF61439
Endrin Aldehyde	ND (0.05)		608		1	06/14/16 22:42	CZF0252	CF61439
gamma-BHC (Lindane)	ND (0.05)		608		1	06/14/16 22:42	CZF0252	CF61439
Heptachlor	ND (0.05)		608		1	06/14/16 22:42	CZF0252	CF61439
Heptachlor Epoxide	ND (0.05)		608		1	06/14/16 22:42	CZF0252	CF61439
Methoxychlor	ND (0.05)		608		1	06/14/16 22:42	CZF0252	CF61439
Toxaphene	ND (1.21)		608		1	06/14/16 22:42	CZF0252	CF61439

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	*11 %*	*SC*	*30-150*
Surrogate: Tetrachloro-m-xylene	*59 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: The Vertex Companies
Client Project ID: 1 Congress St - NPDES
Client Sample ID: NPDES-T2-100
Date Sampled: 06/09/16 12:00
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 1606245
ESS Laboratory Sample ID: 1606245-01
Sample Matrix: Waste Water
Units: ug/L
Analyst: GEM

All methods used are in accordance with 40 CFR 136.

624 Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1,1-Trichloroethane	ND (1.0)		624		1	06/10/16 14:35	CZF0192	CF61028
1,1,2,2-Tetrachloroethane	ND (0.5)		624		1	06/10/16 14:35	CZF0192	CF61028
1,1,2-Trichloroethane	ND (1.0)		624		1	06/10/16 14:35	CZF0192	CF61028
1,1-Dichloroethane	ND (1.0)		624		1	06/10/16 14:35	CZF0192	CF61028
1,1-Dichloroethene	ND (1.0)		624		1	06/10/16 14:35	CZF0192	CF61028
1,2-Dichlorobenzene	ND (1.0)		624		1	06/10/16 14:35	CZF0192	CF61028
1,2-Dichloroethane	ND (1.0)		624		1	06/10/16 14:35	CZF0192	CF61028
1,2-Dichloropropane	ND (1.0)		624		1	06/10/16 14:35	CZF0192	CF61028
1,3-Dichlorobenzene	ND (1.0)		624		1	06/10/16 14:35	CZF0192	CF61028
1,4-Dichlorobenzene	ND (1.0)		624		1	06/10/16 14:35	CZF0192	CF61028
2-Chloroethyl vinyl ether	ND (10.0)		624		1	06/10/16 14:35	CZF0192	CF61028
Acrolein - Screen	ND (5.0)		624		1	06/10/16 14:35	CZF0192	CF61028
Acrylonitrile - Screen	ND (5.0)		624		1	06/10/16 14:35	CZF0192	CF61028
Benzene	ND (1.0)		624		1	06/10/16 14:35	CZF0192	CF61028
Bromodichloromethane	**1.2** (0.6)		624		1	06/10/16 14:35	CZF0192	CF61028
Bromoform	ND (1.0)		624		1	06/10/16 14:35	CZF0192	CF61028
Bromomethane	ND (2.0)		624		1	06/10/16 14:35	CZF0192	CF61028
Carbon Tetrachloride	ND (1.0)		624		1	06/10/16 14:35	CZF0192	CF61028
Chlorobenzene	ND (1.0)		624		1	06/10/16 14:35	CZF0192	CF61028
Chloroethane	ND (2.0)		624		1	06/10/16 14:35	CZF0192	CF61028
Chloroform	**3.9** (1.0)		624		1	06/10/16 14:35	CZF0192	CF61028
Chloromethane	ND (2.0)		624		1	06/10/16 14:35	CZF0192	CF61028
cis-1,2-Dichloroethene	ND (1.0)		624		1	06/10/16 14:35	CZF0192	CF61028
cis-1,3-Dichloropropene	ND (0.4)		624		1	06/10/16 14:35	CZF0192	CF61028
Dibromochloromethane	ND (1.0)		624		1	06/10/16 14:35	CZF0192	CF61028
Ethylbenzene	ND (1.0)		624		1	06/10/16 14:35	CZF0192	CF61028
Methylene Chloride	ND (4.0)		624		1	06/10/16 14:35	CZF0192	CF61028
Tetrachloroethene	ND (1.0)		624		1	06/10/16 14:35	CZF0192	CF61028
Toluene	ND (1.0)		624		1	06/10/16 14:35	CZF0192	CF61028
trans-1,2-Dichloroethene	ND (1.0)		624		1	06/10/16 14:35	CZF0192	CF61028
trans-1,3-Dichloropropene	ND (0.5)		624		1	06/10/16 14:35	CZF0192	CF61028
Trichloroethene	ND (1.0)		624		1	06/10/16 14:35	CZF0192	CF61028

CERTIFICATE OF ANALYSIS

Client Name: The Vertex Companies
Client Project ID: 1 Congress St - NPDES
Client Sample ID: NPDES-T2-100
Date Sampled: 06/09/16 12:00
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 1606245
ESS Laboratory Sample ID: 1606245-01
Sample Matrix: Waste Water
Units: ug/L
Analyst: GEM

All methods used are in accordance with 40 CFR 136.

624 Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Trichlorofluoromethane	ND (1.0)		624		1	06/10/16 14:35	CZF0192	CF61028
Vinyl Chloride	ND (1.0)		624		1	06/10/16 14:35	CZF0192	CF61028

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichloroethane-d4	*98 %*		*70-130*
Surrogate: 4-Bromofluorobenzene	*107 %*		*70-130*
Surrogate: Dibromofluoromethane	*99 %*		*70-130*
Surrogate: Toluene-d8	*93 %*		*70-130*

CERTIFICATE OF ANALYSIS

Client Name: The Vertex Companies
Client Project ID: 1 Congress St - NPDES
Client Sample ID: NPDES-T2-100
Date Sampled: 06/09/16 12:00
Percent Solids: N/A
Initial Volume: 1030
Final Volume: 1
Extraction Method: 3520C

ESS Laboratory Work Order: 1606245
ESS Laboratory Sample ID: 1606245-01
Sample Matrix: Waste Water
Units: ug/L
Analyst: IBM
Prepared: 6/13/16 19:04

All methods used are in accordance with 40 CFR 136.

8270C Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,2,4-Trichlorobenzene	ND (9.7)		8270D		1	06/15/16 8:29	CZF0247	CF61340
1,2-Dichlorobenzene	ND (9.7)		8270D		1	06/15/16 8:29	CZF0247	CF61340
1,3-Dichlorobenzene	ND (9.7)		8270D		1	06/15/16 8:29	CZF0247	CF61340
1,4-Dichlorobenzene	ND (9.7)		8270D		1	06/15/16 8:29	CZF0247	CF61340
2,4,5-Trichlorophenol	ND (9.7)		8270D		1	06/15/16 8:29	CZF0247	CF61340
2,4,6-Trichlorophenol	ND (9.7)		8270D		1	06/15/16 8:29	CZF0247	CF61340
2,4-Dichlorophenol	ND (9.7)		8270D		1	06/15/16 8:29	CZF0247	CF61340
2,4-Dimethylphenol	ND (48.5)		8270D		1	06/15/16 8:29	CZF0247	CF61340
2,4-Dinitrophenol	ND (48.5)		8270D		1	06/15/16 8:29	CZF0247	CF61340
2,4-Dinitrotoluene	ND (9.7)		8270D		1	06/15/16 8:29	CZF0247	CF61340
2,6-Dinitrotoluene	ND (9.7)		8270D		1	06/15/16 8:29	CZF0247	CF61340
2-Chloronaphthalene	ND (9.7)		8270D		1	06/15/16 8:29	CZF0247	CF61340
2-Chlorophenol	ND (9.7)		8270D		1	06/15/16 8:29	CZF0247	CF61340
2-Methylphenol	ND (9.7)		8270D		1	06/15/16 8:29	CZF0247	CF61340
2-Nitrophenol	ND (9.7)		8270D		1	06/15/16 8:29	CZF0247	CF61340
3,3´-Dichlorobenzidine	ND (19.4)		8270D		1	06/15/16 8:29	CZF0247	CF61340
3+4-Methylphenol	ND (19.4)		8270D		1	06/15/16 8:29	CZF0247	CF61340
4-Bromophenyl-phenylether	ND (9.7)		8270D		1	06/15/16 8:29	CZF0247	CF61340
4-Chloroaniline	ND (19.4)		8270D		1	06/15/16 8:29	CZF0247	CF61340
4-Nitrophenol	ND (48.5)		8270D		1	06/15/16 8:29	CZF0247	CF61340
Acetophenone	ND (9.7)		8270D		1	06/15/16 8:29	CZF0247	CF61340
Aniline	ND (9.7)		8270D		1	06/15/16 8:29	CZF0247	CF61340
Azobenzene	ND (19.4)		8270D		1	06/15/16 8:29	CZF0247	CF61340
bis(2-Chloroethoxy)methane	ND (9.7)		8270D		1	06/15/16 8:29	CZF0247	CF61340
bis(2-Chloroethyl)ether	ND (9.7)		8270D		1	06/15/16 8:29	CZF0247	CF61340
bis(2-chloroisopropyl)Ether	ND (9.7)		8270D		1	06/15/16 8:29	CZF0247	CF61340
bis(2-Ethylhexyl)phthalate	**230** (5.8)		8270D		1	06/15/16 8:29	CZF0247	CF61340
Butylbenzylphthalate	**11.7** (9.7)		8270D		1	06/15/16 8:29	CZF0247	CF61340
Dibenzofuran	ND (9.7)		8270D		1	06/15/16 8:29	CZF0247	CF61340
Diethylphthalate	ND (9.7)		8270D		1	06/15/16 8:29	CZF0247	CF61340
Dimethylphthalate	ND (9.7)		8270D		1	06/15/16 8:29	CZF0247	CF61340
Di-n-butylphthalate	ND (9.7)		8270D		1	06/15/16 8:29	CZF0247	CF61340

CERTIFICATE OF ANALYSIS

Client Name: The Vertex Companies
Client Project ID: 1 Congress St - NPDES
Client Sample ID: NPDES-T2-100
Date Sampled: 06/09/16 12:00
Percent Solids: N/A
Initial Volume: 1030
Final Volume: 1
Extraction Method: 3520C

ESS Laboratory Work Order: 1606245
ESS Laboratory Sample ID: 1606245-01
Sample Matrix: Waste Water
Units: ug/L
Analyst: IBM
Prepared: 6/13/16 19:04

All methods used are in accordance with 40 CFR 136.

8270C Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Di-n-octylphthalate	ND (9.7)		8270D		1	06/15/16 8:29	CZF0247	CF61340
Hexachlorobutadiene	ND (9.7)		8270D		1	06/15/16 8:29	CZF0247	CF61340
Hexachloroethane	ND (4.9)		8270D		1	06/15/16 8:29	CZF0247	CF61340
Isophorone	ND (9.7)		8270D		1	06/15/16 8:29	CZF0247	CF61340
Nitrobenzene	ND (9.7)		8270D		1	06/15/16 8:29	CZF0247	CF61340
N-Nitrosodimethylamine	ND (9.7)		8270D		1	06/15/16 8:29	CZF0247	CF61340
Phenol	**14.5** (9.7)		8270D		1	06/15/16 8:29	CZF0247	CF61340

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichlorobenzene-d4	*49 %*		*30-130*
Surrogate: 2,4,6-Tribromophenol	*43 %*		*15-110*
Surrogate: 2-Chlorophenol-d4	*45 %*		*15-110*
Surrogate: 2-Fluorobiphenyl	*47 %*		*30-130*
Surrogate: 2-Fluorophenol	*35 %*		*15-110*
Surrogate: Nitrobenzene-d5	*51 %*		*30-130*
Surrogate: Phenol-d6	*46 %*		*15-110*
Surrogate: p-Terphenyl-d14	*55 %*		*30-130*

CERTIFICATE OF ANALYSIS

Client Name: The Vertex Companies
Client Project ID: 1 Congress St - NPDES
Client Sample ID: NPDES-T2-100
Date Sampled: 06/09/16 12:00
Percent Solids: N/A
Initial Volume: 1030
Final Volume: 0.25
Extraction Method: 3520C

ESS Laboratory Work Order: 1606245
ESS Laboratory Sample ID: 1606245-01
Sample Matrix: Waste Water
Units: ug/L
Analyst: IBM
Prepared: 6/13/16 19:04

All methods used are in accordance with 40 CFR 136.

8270D(SIM) Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
2-Methylnaphthalene	ND (3.88)		8270D SIM		20	06/15/16 14:57	CZF0248	CF61340
Acenaphthene	ND (3.88)		8270D SIM		20	06/15/16 14:57	CZF0248	CF61340
Acenaphthylene	ND (3.88)		8270D SIM		20	06/15/16 14:57	CZF0248	CF61340
Anthracene	ND (3.88)		8270D SIM		20	06/15/16 14:57	CZF0248	CF61340
Benzo(a)anthracene	ND (0.97)		8270D SIM		20	06/15/16 14:57	CZF0248	CF61340
Benzo(a)pyrene	ND (0.97)		8270D SIM		20	06/15/16 14:57	CZF0248	CF61340
Benzo(b)fluoranthene	ND (0.97)		8270D SIM		20	06/15/16 14:57	CZF0248	CF61340
Benzo(g,h,i)perylene	ND (3.88)		8270D SIM		20	06/15/16 14:57	CZF0248	CF61340
Benzo(k)fluoranthene	ND (0.97)		8270D SIM		20	06/15/16 14:57	CZF0248	CF61340
Chrysene	ND (0.97)		8270D SIM		20	06/15/16 14:57	CZF0248	CF61340
Dibenzo(a,h)Anthracene	ND (0.97)		8270D SIM		20	06/15/16 14:57	CZF0248	CF61340
Fluoranthene	ND (3.88)		8270D SIM		20	06/15/16 14:57	CZF0248	CF61340
Fluorene	ND (3.88)		8270D SIM		20	06/15/16 14:57	CZF0248	CF61340
Hexachlorobenzene	ND (3.88)		8270D SIM		20	06/15/16 14:57	CZF0248	CF61340
Indeno(1,2,3-cd)Pyrene	ND (0.97)		8270D SIM		20	06/15/16 14:57	CZF0248	CF61340
Naphthalene	ND (3.88)		8270D SIM		20	06/15/16 14:57	CZF0248	CF61340
Pentachlorophenol	ND (17.5)		8270D SIM		20	06/15/16 14:57	CZF0248	CF61340
Phenanthrene	ND (3.88)		8270D SIM		20	06/15/16 14:57	CZF0248	CF61340
Pyrene	ND (3.88)		8270D SIM		20	06/15/16 14:57	CZF0248	CF61340

%Recovery	Qualifier	Limits

CERTIFICATE OF ANALYSIS

Client Name: The Vertex Companies
Client Project ID: 1 Congress St - NPDES
Client Sample ID: NPDES-T2-100
Date Sampled: 06/09/16 12:00
Percent Solids: N/A

ESS Laboratory Work Order: 1606245
ESS Laboratory Sample ID: 1606245-01
Sample Matrix: Waste Water

All methods used are in accordance with 40 CFR 136.

Classical Chemistry

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Units	Batch
Hexavalent Chromium	ND (10)		7196A		1	MJV	06/09/16 18:55	ug/L	CF60951
Phenols	ND (100)		420.1		1	EEM	06/16/16 13:35	ug/L	CF61630
Total Cyanide (LL)	ND (5.00)		4500 CN CE		1	EEM	06/16/16 11:40	ug/L	CF61628
Total Petroleum Hydrocarbon	**169** (5)		1664A		1	CRR	06/15/16 14:52	mg/L	CF61440
Total Residual Chlorine	**280** (10)		4500-Cl E		1	EEM	06/10/16 11:20	ug/L	CF61020
Total Suspended Solids	**178** (10)		2540D		1	JLK	06/14/16 21:07	mg/L	CF61427

CERTIFICATE OF ANALYSIS

Client Name: The Vertex Companies
Client Project ID: 1 Congress St - NPDES
Client Sample ID: NPDES-T2-100
Date Sampled: 06/09/16 12:00
Percent Solids: N/A
Initial Volume: 35
Final Volume: 2
Extraction Method: 504/8011

ESS Laboratory Work Order: 1606245
ESS Laboratory Sample ID: 1606245-01
Sample Matrix: Waste Water
Units: ug/L
Analyst: JXS
Prepared: 6/13/16 11:00

All methods used are in accordance with 40 CFR 136.

504.1 1,2-Dibromoethane / 1,2-Dibromo-3-chloropropane

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,2-Dibromoethane	ND (0.015)		504.1		1	06/13/16 14:03		CF61311

	%Recovery	Qualifier	Limits
Surrogate: Pentachloroethane	*107 %*		*30-150*
Surrogate: Pentachloroethane [2C]	*107 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: The Vertex Companies
Client Project ID: 1 Congress St - NPDES

ESS Laboratory Work Order: 1606245

Quality Control Data

Total Metals

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Batch CF60908 - 245.1/7470A										
Blank										
Mercury	ND	0.20	ug/L							
Blank										
Mercury	ND	0.20	ug/L							
Blank										
Mercury	ND	0.20	ug/L							
LCS										
Mercury	5.92	0.20	ug/L	6.000		99	85-115			
LCS Dup										
Mercury	5.85	0.20	ug/L	6.000		97	85-115	1	20	
Batch CF60951 - [CALC]										
Blank										
Chromium III	ND	10	ug/L							
LCS										
Chromium III	ND		ug/L							
LCS Dup										
Chromium III	ND		ug/L							
Batch CF61019 - 3005A										
Blank										
Antimony	ND	10.0	ug/L							
Arsenic	ND	10.0	ug/L							
Cadmium	ND	1.0	ug/L							
Chromium	ND	20.0	ug/L							
Chromium III	ND	20	ug/L							
Copper	ND	10.0	ug/L							
Iron	ND	100	ug/L							
Lead	ND	5.0	ug/L							
Nickel	ND	20.0	ug/L							
Selenium	ND	10.0	ug/L							
Silver	ND	0.5	ug/L							
Silver	ND	5.0	ug/L							
Zinc	ND	50.0	ug/L							
LCS										
Antimony	464	250	ug/L	500.0		93	80-120			
Arsenic	578	250	ug/L	500.0		116	80-120			
Cadmium	253	500	ug/L	250.0		101	80-120			
Chromium	503	20.0	ug/L	500.0		101	80-120			
Chromium III	503	20	ug/L							
Copper	479	10.0	ug/L	500.0		96	80-120			
Iron	2510	100	ug/L	2500		100	80-120			
Lead	493	125	ug/L	500.0		99	80-120			
Nickel	496	20.0	ug/L	500.0		99	80-120			
Selenium	1030	250	ug/L	1000		103	80-120			

CERTIFICATE OF ANALYSIS

Client Name: The Vertex Companies
Client Project ID: 1 Congress St - NPDES

ESS Laboratory Work Order: 1606245

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Total Metals										
Batch CF61019 - 3005A										
Silver	249	5.0	ug/L	250.0		100	80-120			
Silver	271	50.0	ug/L	250.0		108	80-120			
Zinc	563	50.0	ug/L	500.0		113	80-120			
LCS Dup										
Antimony	469	250	ug/L	500.0		94	80-120	1	20	
Arsenic	586	250	ug/L	500.0		117	80-120	1	20	
Cadmium	263	500	ug/L	250.0		105	80-120	4	20	
Chromium	492	20.0	ug/L	500.0		98	80-120	2	20	
Chromium III	492	20	ug/L							
Copper	473	10.0	ug/L	500.0		95	80-120	1	20	
Iron	2470	100	ug/L	2500		99	80-120	2	20	
Lead	496	125	ug/L	500.0		99	80-120	0.5	20	
Nickel	489	20.0	ug/L	500.0		98	80-120	2	20	
Selenium	1060	250	ug/L	1000		106	80-120	2	20	
Silver	244	5.0	ug/L	250.0		98	80-120	2	20	
Silver	268	50.0	ug/L	250.0		107	80-120	1	20	
Zinc	493	50.0	ug/L	500.0		99	80-120	13	20	
608 Polychlorinated Biphenyls (PCB)										
Batch CF61011 - 3510C										
Blank										
Aroclor 1016	ND	0.10	ug/L							
Aroclor 1221	ND	0.10	ug/L							
Aroclor 1232	ND	0.10	ug/L							
Aroclor 1242	ND	0.10	ug/L							
Aroclor 1248	ND	0.10	ug/L							
Aroclor 1254	ND	0.10	ug/L							
Aroclor 1260	ND	0.10	ug/L							
Aroclor 1262	ND	0.10	ug/L							
Aroclor 1268	ND	0.10	ug/L							
Surrogate: Decachlorobiphenyl	*0.0300*		ug/L	*0.05000*		*60*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.0401*		ug/L	*0.05000*		*80*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.0181*		ug/L	*0.05000*		*36*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.0210*		ug/L	*0.05000*		*42*	*30-150*			
LCS										
Aroclor 1016	0.62	0.10	ug/L	1.000		62	40-140			
Aroclor 1260	0.71	0.10	ug/L	1.000		71	40-140			
Surrogate: Decachlorobiphenyl	*0.0346*		ug/L	*0.05000*		*69*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.0395*		ug/L	*0.05000*		*79*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.0211*		ug/L	*0.05000*		*42*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.0229*		ug/L	*0.05000*		*46*	*30-150*			
LCS Dup										
Aroclor 1016	0.65	0.10	ug/L	1.000		65	40-140	4	50	

CERTIFICATE OF ANALYSIS

Client Name: The Vertex Companies
Client Project ID: 1 Congress St - NPDES

ESS Laboratory Work Order: 1606245

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
608 Polychlorinated Biphenyls (PCB)										
Batch CF61011 - 3510C										
Aroclor 1260	0.72	0.10	ug/L	1.000		72	40-140	2	50	
Surrogate: Decachlorobiphenyl	*0.0343*		ug/L	*0.05000*		*69*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.0410*		ug/L	*0.05000*		*82*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.0211*		ug/L	*0.05000*		*42*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.0231*		ug/L	*0.05000*		*46*	*30-150*			
608/6630C Organochlorine Pesticides										
Batch CF61439 - 3510C										
Blank										
4,4´-DDD	ND	0.05	ug/L							
4,4´-DDD [2C]	ND	0.05	ug/L							
4,4´-DDE	ND	0.05	ug/L							
4,4´-DDE [2C]	ND	0.05	ug/L							
4,4´-DDT	ND	0.05	ug/L							
4,4´-DDT [2C]	ND	0.05	ug/L							
Aldrin	ND	0.05	ug/L							
Aldrin [2C]	ND	0.05	ug/L							
alpha-BHC	ND	0.05	ug/L							
alpha-BHC [2C]	ND	0.05	ug/L							
beta-BHC	ND	0.05	ug/L							
beta-BHC [2C]	ND	0.05	ug/L							
Chlordane (Total)	ND	0.50	ug/L							
Chlordane (Total) [2C]	ND	0.50	ug/L							
delta-BHC	ND	0.05	ug/L							
delta-BHC [2C]	ND	0.05	ug/L							
Dieldrin	ND	0.05	ug/L							
Dieldrin [2C]	ND	0.05	ug/L							
Endosulfan I	ND	0.05	ug/L							
Endosulfan I [2C]	ND	0.05	ug/L							
Endosulfan II	ND	0.05	ug/L							
Endosulfan II [2C]	ND	0.05	ug/L							
Endosulfan Sulfate	ND	0.05	ug/L							
Endosulfan Sulfate [2C]	ND	0.05	ug/L							
Endrin	ND	0.05	ug/L							
Endrin [2C]	ND	0.05	ug/L							
Endrin Aldehyde	ND	0.05	ug/L							
Endrin Aldehyde [2C]	ND	0.05	ug/L							
gamma-BHC (Lindane)	ND	0.05	ug/L							
gamma-BHC (Lindane) [2C]	ND	0.05	ug/L							
Heptachlor	ND	0.05	ug/L							
Heptachlor [2C]	ND	0.05	ug/L							
Heptachlor Epoxide	ND	0.05	ug/L							
Heptachlor Epoxide [2C]	ND	0.05	ug/L							
Methoxychlor	ND	0.05	ug/L							

CERTIFICATE OF ANALYSIS

Client Name: The Vertex Companies
Client Project ID: 1 Congress St - NPDES

ESS Laboratory Work Order: 1606245

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
608/6630C Organochlorine Pesticides										
Batch CF61439 - 3510C										
Methoxychlor [2C]	ND	0.05	ug/L							
Toxaphene	ND	1.30	ug/L							
Toxaphene [2C]	ND	1.30	ug/L							
Surrogate: Decachlorobiphenyl	*0.182*		ug/L	*0.2500*		*73*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.253*		ug/L	*0.2500*		*101*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.0957*		ug/L	*0.2500*		*38*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.0935*		ug/L	*0.2500*		*37*	*30-150*			
LCS										
4,4´-DDD	0.24	0.05	ug/L	0.2500		98	40-140			
4,4´-DDD [2C]	0.22	0.05	ug/L	0.2500		87	40-140			
4,4´-DDE	0.23	0.05	ug/L	0.2500		92	40-140			
4,4´-DDE [2C]	0.24	0.05	ug/L	0.2500		94	40-140			
4,4´-DDT	0.23	0.05	ug/L	0.2500		93	40-140			
4,4´-DDT [2C]	0.25	0.05	ug/L	0.2500		102	40-140			
Aldrin	0.14	0.05	ug/L	0.2500		56	40-140			
Aldrin [2C]	0.14	0.05	ug/L	0.2500		56	40-140			
alpha-BHC	0.24	0.05	ug/L	0.2500		94	40-140			
alpha-BHC [2C]	0.23	0.05	ug/L	0.2500		92	40-140			
beta-BHC	0.23	0.05	ug/L	0.2500		93	40-140			
beta-BHC [2C]	0.25	0.05	ug/L	0.2500		101	40-140			
delta-BHC	0.23	0.05	ug/L	0.2500		93	40-140			
delta-BHC [2C]	0.26	0.05	ug/L	0.2500		105	40-140			
Dieldrin	0.25	0.05	ug/L	0.2500		100	40-140			
Dieldrin [2C]	0.28	0.05	ug/L	0.2500		110	40-140			
Endosulfan I	0.24	0.05	ug/L	0.2500		94	40-140			
Endosulfan I [2C]	0.25	0.05	ug/L	0.2500		99	40-140			
Endosulfan II	0.23	0.05	ug/L	0.2500		93	40-140			
Endosulfan II [2C]	0.25	0.05	ug/L	0.2500		100	40-140			
Endosulfan Sulfate	0.24	0.05	ug/L	0.2500		95	40-140			
Endosulfan Sulfate [2C]	0.31	0.05	ug/L	0.2500		122	40-140			
Endrin	0.26	0.05	ug/L	0.2500		104	40-140			
Endrin [2C]	0.28	0.05	ug/L	0.2500		110	40-140			
Endrin Aldehyde	0.24	0.05	ug/L	0.2500		95	40-140			
Endrin Aldehyde [2C]	0.23	0.05	ug/L	0.2500		92	40-140			
gamma-BHC (Lindane)	0.24	0.05	ug/L	0.2500		97	40-140			
gamma-BHC (Lindane) [2C]	0.26	0.05	ug/L	0.2500		105	40-140			
Heptachlor	0.16	0.05	ug/L	0.2500		64	40-140			
Heptachlor [2C]	0.17	0.05	ug/L	0.2500		67	40-140			
Heptachlor Epoxide	0.25	0.05	ug/L	0.2500		99	40-140			
Heptachlor Epoxide [2C]	0.26	0.05	ug/L	0.2500		104	40-140			
Methoxychlor	0.26	0.05	ug/L	0.2500		103	40-140			
Methoxychlor [2C]	0.31	0.05	ug/L	0.2500		125	40-140			
Surrogate: Decachlorobiphenyl	*0.185*		ug/L	*0.2500*		*74*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.225*		ug/L	*0.2500*		*90*	*30-150*			

CERTIFICATE OF ANALYSIS

Client Name: The Vertex Companies
Client Project ID: 1 Congress St - NPDES

ESS Laboratory Work Order: 1606245

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
608/6630C Organochlorine Pesticides										
Batch CF61439 - 3510C										
Surrogate: Tetrachloro-m-xylene	*0.139*		ug/L	*0.2500*		*55*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.126*		ug/L	*0.2500*		*50*	*30-150*			
LCS Dup										
4,4´-DDD	0.22	0.05	ug/L	0.2500		86	40-140	13	20	
4,4´-DDD [2C]	0.20	0.05	ug/L	0.2500		80	40-140	9	20	
4,4´-DDE	0.21	0.05	ug/L	0.2500		82	40-140	12	20	
4,4´-DDE [2C]	0.20	0.05	ug/L	0.2500		81	40-140	15	20	
4,4´-DDT	0.20	0.05	ug/L	0.2500		80	40-140	15	20	
4,4´-DDT [2C]	0.22	0.05	ug/L	0.2500		86	40-140	17	20	
Aldrin	0.14	0.05	ug/L	0.2500		57	40-140	2	20	
Aldrin [2C]	0.14	0.05	ug/L	0.2500		56	40-140	0.2	20	
alpha-BHC	0.21	0.05	ug/L	0.2500		83	40-140	13	20	
alpha-BHC [2C]	0.20	0.05	ug/L	0.2500		79	40-140	15	20	
beta-BHC	0.20	0.05	ug/L	0.2500		81	40-140	14	20	
beta-BHC [2C]	0.22	0.05	ug/L	0.2500		87	40-140	15	20	
delta-BHC	0.20	0.05	ug/L	0.2500		81	40-140	15	20	
delta-BHC [2C]	0.22	0.05	ug/L	0.2500		88	40-140	18	20	
Dieldrin	0.21	0.05	ug/L	0.2500		86	40-140	16	20	
Dieldrin [2C]	0.23	0.05	ug/L	0.2500		92	40-140	18	20	
Endosulfan I	0.20	0.05	ug/L	0.2500		79	40-140	18	20	
Endosulfan I [2C]	0.21	0.05	ug/L	0.2500		82	40-140	19	20	
Endosulfan II	0.20	0.05	ug/L	0.2500		81	40-140	13	20	
Endosulfan II [2C]	0.21	0.05	ug/L	0.2500		85	40-140	16	20	
Endosulfan Sulfate	0.20	0.05	ug/L	0.2500		78	40-140	19	20	
Endosulfan Sulfate [2C]	0.26	0.05	ug/L	0.2500		103	40-140	17	20	
Endrin	0.22	0.05	ug/L	0.2500		89	40-140	16	20	
Endrin [2C]	0.23	0.05	ug/L	0.2500		92	40-140	18	20	
Endrin Aldehyde	0.19	0.05	ug/L	0.2500		77	40-140	22	20	D+
Endrin Aldehyde [2C]	0.19	0.05	ug/L	0.2500		77	40-140	18	20	
gamma-BHC (Lindane)	0.21	0.05	ug/L	0.2500		84	40-140	15	20	
gamma-BHC (Lindane) [2C]	0.22	0.05	ug/L	0.2500		89	40-140	17	20	
Heptachlor	0.16	0.05	ug/L	0.2500		62	40-140	3	20	
Heptachlor [2C]	0.16	0.05	ug/L	0.2500		64	40-140	5	20	
Heptachlor Epoxide	0.21	0.05	ug/L	0.2500		86	40-140	14	20	
Heptachlor Epoxide [2C]	0.22	0.05	ug/L	0.2500		87	40-140	17	20	
Methoxychlor	0.22	0.05	ug/L	0.2500		89	40-140	15	20	
Methoxychlor [2C]	0.27	0.05	ug/L	0.2500		106	40-140	16	20	
Surrogate: Decachlorobiphenyl	*0.136*		ug/L	*0.2500*		*54*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.171*		ug/L	*0.2500*		*68*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.116*		ug/L	*0.2500*		*47*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.110*		ug/L	*0.2500*		*44*	*30-150*			
624 Volatile Organic Compounds										

CERTIFICATE OF ANALYSIS

Client Name: The Vertex Companies
Client Project ID: 1 Congress St - NPDES

ESS Laboratory Work Order: 1606245

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
624 Volatile Organic Compounds										
Batch CF61028 - 5030B										
Blank										
1,1,1-Trichloroethane	ND	1.0	ug/L							
1,1,2,2-Tetrachloroethane	ND	0.5	ug/L							
1,1,2-Trichloroethane	ND	1.0	ug/L							
1,1-Dichloroethane	ND	1.0	ug/L							
1,1-Dichloroethene	ND	1.0	ug/L							
1,2-Dichlorobenzene	ND	1.0	ug/L							
1,2-Dichloroethane	ND	1.0	ug/L							
1,2-Dichloropropane	ND	1.0	ug/L							
1,3-Dichlorobenzene	ND	1.0	ug/L							
1,4-Dichlorobenzene	ND	1.0	ug/L							
2-Chloroethyl vinyl ether	ND	10.0	ug/L							
Acrolein - Screen	ND	5.0	ug/L							
Acrylonitrile - Screen	ND	5.0	ug/L							
Benzene	ND	1.0	ug/L							
Bromodichloromethane	ND	0.6	ug/L							
Bromoform	ND	1.0	ug/L							
Bromomethane	ND	2.0	ug/L							
Carbon Tetrachloride	ND	1.0	ug/L							
Chlorobenzene	ND	1.0	ug/L							
Chloroethane	ND	2.0	ug/L							
Chloroform	ND	1.0	ug/L							
Chloromethane	ND	2.0	ug/L							
cis-1,2-Dichloroethene	ND	1.0	ug/L							
cis-1,3-Dichloropropene	ND	0.4	ug/L							
Dibromochloromethane	ND	1.0	ug/L							
Ethylbenzene	ND	1.0	ug/L							
Methylene Chloride	ND	4.0	ug/L							
Tetrachloroethene	ND	1.0	ug/L							
Toluene	ND	1.0	ug/L							
trans-1,2-Dichloroethene	ND	1.0	ug/L							
trans-1,3-Dichloropropene	ND	0.5	ug/L							
Trichloroethene	ND	1.0	ug/L							
Trichlorofluoromethane	ND	1.0	ug/L							
Vinyl Chloride	ND	1.0	ug/L							
Surrogate: 1,2-Dichloroethane-d4	*23.6*		ug/L	*25.00*		*94*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*26.6*		ug/L	*25.00*		*106*	*70-130*			
Surrogate: Dibromofluoromethane	*24.7*		ug/L	*25.00*		*99*	*70-130*			
Surrogate: Toluene-d8	*23.3*		ug/L	*25.00*		*93*	*70-130*			
LCS										
1,1,1-Trichloroethane	10.1		ug/L	10.00		101	70-130			
1,1,2,2-Tetrachloroethane	8.6		ug/L	10.00		86	70-130			
1,1,2-Trichloroethane	8.5		ug/L	10.00		85	70-130			
1,1-Dichloroethane	9.1		ug/L	10.00		91	70-130			
1,1-Dichloroethene	10.4		ug/L	10.00		104	70-130			

CERTIFICATE OF ANALYSIS

Client Name: The Vertex Companies
Client Project ID: 1 Congress St - NPDES

ESS Laboratory Work Order: 1606245

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
624 Volatile Organic Compounds										
Batch CF61028 - 5030B										
1,2-Dichlorobenzene	10.6		ug/L	10.00		106	70-130			
1,2-Dichloroethane	9.8		ug/L	10.00		98	70-130			
1,2-Dichloropropane	8.3		ug/L	10.00		83	70-130			
1,3-Dichlorobenzene	10.4		ug/L	10.00		104	70-130			
1,4-Dichlorobenzene	10.4		ug/L	10.00		104	70-130			
2-Chloroethyl vinyl ether	46.2		ug/L	50.00		92	70-130			
Acrolein - Screen	7.5		ug/L	10.00		75	70-130			
Acrylonitrile - Screen	8.3		ug/L	10.00		83	70-130			
Benzene	9.6		ug/L	10.00		96	70-130			
Bromodichloromethane	9.4		ug/L	10.00		94	70-130			
Bromoform	9.1		ug/L	10.00		91	70-130			
Bromomethane	11.9		ug/L	10.00		119	70-130			
Carbon Tetrachloride	10.2		ug/L	10.00		102	70-130			
Chlorobenzene	11.0		ug/L	10.00		110	70-130			
Chloroethane	8.7		ug/L	10.00		87	70-130			
Chloroform	9.5		ug/L	10.00		95	70-130			
Chloromethane	8.4		ug/L	10.00		84	70-130			
cis-1,2-Dichloroethene	10.2		ug/L	10.00		102	70-130			
cis-1,3-Dichloropropene	9.9		ug/L	10.00		99	70-130			
Dibromochloromethane	10.8		ug/L	10.00		108	70-130			
Ethylbenzene	10.1		ug/L	10.00		101	70-130			
Methylene Chloride	9.2		ug/L	10.00		92	70-130			
Tetrachloroethene	10.0		ug/L	10.00		100	70-130			
Toluene	10.3		ug/L	10.00		103	70-130			
trans-1,2-Dichloroethene	9.9		ug/L	10.00		99	70-130			
trans-1,3-Dichloropropene	9.2		ug/L	10.00		92	70-130			
Trichloroethene	9.2		ug/L	10.00		92	70-130			
Trichlorofluoromethane	9.4		ug/L	10.00		94	70-130			
Vinyl Chloride	9.7		ug/L	10.00		97	70-130			
Surrogate: 1,2-Dichloroethane-d4	*25.2*		ug/L	*25.00*		*101*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*25.7*		ug/L	*25.00*		*103*	*70-130*			
Surrogate: Dibromofluoromethane	*25.4*		ug/L	*25.00*		*102*	*70-130*			
Surrogate: Toluene-d8	*24.6*		ug/L	*25.00*		*98*	*70-130*			
LCS Dup										
1,1,1-Trichloroethane	9.6		ug/L	10.00		96	70-130	5	25	
1,1,2,2-Tetrachloroethane	9.8		ug/L	10.00		98	70-130	13	25	
1,1,2-Trichloroethane	9.4		ug/L	10.00		94	70-130	10	25	
1,1-Dichloroethane	9.7		ug/L	10.00		97	70-130	7	25	
1,1-Dichloroethene	9.7		ug/L	10.00		97	70-130	7	25	
1,2-Dichlorobenzene	10.4		ug/L	10.00		104	70-130	2	25	
1,2-Dichloroethane	9.8		ug/L	10.00		98	70-130	0.7	25	
1,2-Dichloropropane	8.8		ug/L	10.00		88	70-130	7	25	
1,3-Dichlorobenzene	10.3		ug/L	10.00		103	70-130	0.6	25	
1,4-Dichlorobenzene	10.1		ug/L	10.00		101	70-130	3	25	
2-Chloroethyl vinyl ether	52.2		ug/L	50.00		104	70-130	12	25	

CERTIFICATE OF ANALYSIS

Client Name: The Vertex Companies
Client Project ID: 1 Congress St - NPDES

ESS Laboratory Work Order: 1606245

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
624 Volatile Organic Compounds										
Batch CF61028 - 5030B										
Acrolein - Screen	2.9		ug/L	10.00		29	70-130	88	25	B-, D+
Acrylonitrile - Screen	9.4		ug/L	10.00		94	70-130	12	20	
Benzene	10.2		ug/L	10.00		102	70-130	6	25	
Bromodichloromethane	9.8		ug/L	10.00		98	70-130	4	25	
Bromoform	9.9		ug/L	10.00		99	70-130	8	25	
Bromomethane	10.1		ug/L	10.00		101	70-130	16	25	
Carbon Tetrachloride	9.9		ug/L	10.00		99	70-130	3	25	
Chlorobenzene	10.4		ug/L	10.00		104	70-130	5	25	
Chloroethane	8.5		ug/L	10.00		85	70-130	2	25	
Chloroform	9.4		ug/L	10.00		94	70-130	2	25	
Chloromethane	8.2		ug/L	10.00		82	70-130	3	25	
cis-1,2-Dichloroethene	10.1		ug/L	10.00		101	70-130	1	25	
cis-1,3-Dichloropropene	9.9		ug/L	10.00		99	70-130	0.6	25	
Dibromochloromethane	10.0		ug/L	10.00		100	70-130	8	25	
Ethylbenzene	10.0		ug/L	10.00		100	70-130	0.3	25	
Methylene Chloride	10.4		ug/L	10.00		104	70-130	13	25	
Tetrachloroethene	7.3		ug/L	10.00		73	70-130	32	25	D+
Toluene	9.6		ug/L	10.00		96	70-130	7	25	
trans-1,2-Dichloroethene	10.1		ug/L	10.00		101	70-130	2	25	
trans-1,3-Dichloropropene	9.4		ug/L	10.00		94	70-130	2	25	
Trichloroethene	9.7		ug/L	10.00		97	70-130	5	25	
Trichlorofluoromethane	9.0		ug/L	10.00		90	70-130	5	25	
Vinyl Chloride	9.3		ug/L	10.00		93	70-130	4	25	
Surrogate: 1,2-Dichloroethane-d4	*24.7*		ug/L	*25.00*		*99*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*24.7*		ug/L	*25.00*		*99*	*70-130*			
Surrogate: Dibromofluoromethane	*24.7*		ug/L	*25.00*		*99*	*70-130*			
Surrogate: Toluene-d8	*24.6*		ug/L	*25.00*		*98*	*70-130*			
8270C Semi-Volatile Organic Compounds										
Batch CF61340 - 3520C										
Blank										
1,2,4-Trichlorobenzene	ND	10.0	ug/L							
1,2-Dichlorobenzene	ND	10.0	ug/L							
1,3-Dichlorobenzene	ND	10.0	ug/L							
1,4-Dichlorobenzene	ND	10.0	ug/L							
2,4,5-Trichlorophenol	ND	10.0	ug/L							
2,4,6-Trichlorophenol	ND	10.0	ug/L							
2,4-Dichlorophenol	ND	10.0	ug/L							
2,4-Dimethylphenol	ND	50.0	ug/L							
2,4-Dinitrophenol	ND	50.0	ug/L							
2,4-Dinitrotoluene	ND	10.0	ug/L							
2,6-Dinitrotoluene	ND	10.0	ug/L							
2-Chloronaphthalene	ND	10.0	ug/L							
2-Chlorophenol	ND	10.0	ug/L							
2-Methylphenol	ND	10.0	ug/L							

CERTIFICATE OF ANALYSIS

Client Name: The Vertex Companies
Client Project ID: 1 Congress St - NPDES

ESS Laboratory Work Order: 1606245

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8270C Semi-Volatile Organic Compounds										
Batch CF61340 - 3520C										
2-Nitrophenol	ND	10.0	ug/L							
3,3´-Dichlorobenzidine	ND	20.0	ug/L							
3+4-Methylphenol	ND	20.0	ug/L							
4-Bromophenyl-phenylether	ND	10.0	ug/L							
4-Chloroaniline	ND	20.0	ug/L							
4-Nitrophenol	ND	50.0	ug/L							
Acetophenone	ND	10.0	ug/L							
Aniline	ND	10.0	ug/L							
Azobenzene	ND	20.0	ug/L							
bis(2-Chloroethoxy)methane	ND	10.0	ug/L							
bis(2-Chloroethyl)ether	ND	10.0	ug/L							
bis(2-chloroisopropyl)Ether	ND	10.0	ug/L							
bis(2-Ethylhexyl)phthalate	ND	6.0	ug/L							
Butylbenzylphthalate	ND	10.0	ug/L							
Dibenzofuran	ND	10.0	ug/L							
Diethylphthalate	ND	10.0	ug/L							
Dimethylphthalate	ND	10.0	ug/L							
Di-n-butylphthalate	ND	10.0	ug/L							
Di-n-octylphthalate	ND	10.0	ug/L							
Hexachlorobutadiene	ND	10.0	ug/L							
Hexachloroethane	ND	5.0	ug/L							
Isophorone	ND	10.0	ug/L							
Nitrobenzene	ND	10.0	ug/L							
N-Nitrosodimethylamine	ND	10.0	ug/L							
Phenol	ND	10.0	ug/L							
Surrogate: 1,2-Dichlorobenzene-d4	*78.0*		ug/L	*100.0*		*78*	*30-130*			
Surrogate: 2,4,6-Tribromophenol	*113*		ug/L	*150.0*		*75*	*15-110*			
Surrogate: 2-Chlorophenol-d4	*116*		ug/L	*150.0*		*77*	*15-110*			
Surrogate: 2-Fluorobiphenyl	*79.9*		ug/L	*100.0*		*80*	*30-130*			
Surrogate: 2-Fluorophenol	*99.1*		ug/L	*150.0*		*66*	*15-110*			
Surrogate: Nitrobenzene-d5	*85.7*		ug/L	*100.0*		*86*	*30-130*			
Surrogate: Phenol-d6	*121*		ug/L	*150.0*		*81*	*15-110*			
Surrogate: p-Terphenyl-d14	*91.5*		ug/L	*100.0*		*91*	*30-130*			
LCS										
1,2,4-Trichlorobenzene	75.1	10.0	ug/L	100.0		75	40-140			
1,2-Dichlorobenzene	70.1	10.0	ug/L	100.0		70	40-140			
1,3-Dichlorobenzene	66.6	10.0	ug/L	100.0		67	40-140			
1,4-Dichlorobenzene	66.6	10.0	ug/L	100.0		67	40-140			
2,4,5-Trichlorophenol	99.2	10.0	ug/L	100.0		99	30-130			
2,4,6-Trichlorophenol	89.8	10.0	ug/L	100.0		90	30-130			
2,4-Dichlorophenol	82.4	10.0	ug/L	100.0		82	30-130			
2,4-Dimethylphenol	77.3	50.0	ug/L	100.0		77	30-130			
2,4-Dinitrophenol	98.1	50.0	ug/L	100.0		98	30-130			
2,4-Dinitrotoluene	102	10.0	ug/L	100.0		102	40-140			
2,6-Dinitrotoluene	91.6	10.0	ug/L	100.0		92	40-140			

CERTIFICATE OF ANALYSIS

Client Name: The Vertex Companies
Client Project ID: 1 Congress St - NPDES

ESS Laboratory Work Order: 1606245

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8270C Semi-Volatile Organic Compounds										
Batch CF61340 - 3520C										
2-Chloronaphthalene	73.2	10.0	ug/L	100.0		73	40-140			
2-Chlorophenol	66.2	10.0	ug/L	100.0		66	30-130			
2-Methylphenol	75.6	10.0	ug/L	100.0		76	30-130			
2-Nitrophenol	77.8	10.0	ug/L	100.0		78	30-130			
3,3´-Dichlorobenzidine	98.6	20.0	ug/L	100.0		99	40-140			
3+4-Methylphenol	169	20.0	ug/L	200.0		85	30-130			
4-Bromophenyl-phenylether	90.4	10.0	ug/L	100.0		90	40-140			
4-Chloroaniline	78.9	20.0	ug/L	100.0		79	40-140			
4-Nitrophenol	91.9	50.0	ug/L	100.0		92	30-130			
Acetophenone	78.5	10.0	ug/L	100.0		79	40-140			
Aniline	59.1	10.0	ug/L	100.0		59	40-140			
Azobenzene	83.2	20.0	ug/L	100.0		83	40-140			
bis(2-Chloroethoxy)methane	75.1	10.0	ug/L	100.0		75	40-140			
bis(2-Chloroethyl)ether	70.7	10.0	ug/L	100.0		71	40-140			
bis(2-chloroisopropyl)Ether	74.6	10.0	ug/L	100.0		75	40-140			
bis(2-Ethylhexyl)phthalate	93.4	6.0	ug/L	100.0		93	40-140			
Butylbenzylphthalate	92.5	10.0	ug/L	100.0		92	40-140			
Dibenzofuran	85.9	10.0	ug/L	100.0		86	40-140			
Diethylphthalate	103	10.0	ug/L	100.0		103	40-140			
Dimethylphthalate	95.8	10.0	ug/L	100.0		96	40-140			
Di-n-butylphthalate	94.0	10.0	ug/L	100.0		94	40-140			
Di-n-octylphthalate	91.2	10.0	ug/L	100.0		91	40-140			
Hexachlorobutadiene	70.2	10.0	ug/L	100.0		70	40-140			
Hexachloroethane	63.3	5.0	ug/L	100.0		63	40-140			
Isophorone	77.6	10.0	ug/L	100.0		78	40-140			
Nitrobenzene	76.6	10.0	ug/L	100.0		77	40-140			
N-Nitrosodimethylamine	62.0	10.0	ug/L	100.0		62	40-140			
Phenol	66.5	10.0	ug/L	100.0		66	30-130			
Surrogate: 1,2-Dichlorobenzene-d4	*70.6*		ug/L	*100.0*		*71*	*30-130*			
Surrogate: 2,4,6-Tribromophenol	*131*		ug/L	*150.0*		*87*	*15-110*			
Surrogate: 2-Chlorophenol-d4	*102*		ug/L	*150.0*		*68*	*15-110*			
Surrogate: 2-Fluorobiphenyl	*80.3*		ug/L	*100.0*		*80*	*30-130*			
Surrogate: 2-Fluorophenol	*78.7*		ug/L	*150.0*		*52*	*15-110*			
Surrogate: Nitrobenzene-d5	*79.7*		ug/L	*100.0*		*80*	*30-130*			
Surrogate: Phenol-d6	*107*		ug/L	*150.0*		*72*	*15-110*			
Surrogate: p-Terphenyl-d14	*96.2*		ug/L	*100.0*		*96*	*30-130*			
LCS Dup										
1,2,4-Trichlorobenzene	79.0	10.0	ug/L	100.0		79	40-140	5	20	
1,2-Dichlorobenzene	75.1	10.0	ug/L	100.0		75	40-140	7	20	
1,3-Dichlorobenzene	71.7	10.0	ug/L	100.0		72	40-140	7	20	
1,4-Dichlorobenzene	72.1	10.0	ug/L	100.0		72	40-140	8	20	
2,4,5-Trichlorophenol	95.8	10.0	ug/L	100.0		96	30-130	4	20	
2,4,6-Trichlorophenol	88.5	10.0	ug/L	100.0		88	30-130	1	20	
2,4-Dichlorophenol	85.0	10.0	ug/L	100.0		85	30-130	3	20	
2,4-Dimethylphenol	85.4	50.0	ug/L	100.0		85	30-130	10	20	

CERTIFICATE OF ANALYSIS

Client Name: The Vertex Companies
Client Project ID: 1 Congress St - NPDES

ESS Laboratory Work Order: 1606245

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8270C Semi-Volatile Organic Compounds										
Batch CF61340 - 3520C										
2,4-Dinitrophenol	92.3	50.0	ug/L	100.0		92	30-130	6	20	
2,4-Dinitrotoluene	100	10.0	ug/L	100.0		100	40-140	2	20	
2,6-Dinitrotoluene	87.6	10.0	ug/L	100.0		88	40-140	4	20	
2-Chloronaphthalene	72.8	10.0	ug/L	100.0		73	40-140	0.5	20	
2-Chlorophenol	74.7	10.0	ug/L	100.0		75	30-130	12	20	
2-Methylphenol	81.0	10.0	ug/L	100.0		81	30-130	7	20	
2-Nitrophenol	84.7	10.0	ug/L	100.0		85	30-130	8	20	
3,3´-Dichlorobenzidine	102	20.0	ug/L	100.0		102	40-140	3	20	
3+4-Methylphenol	177	20.0	ug/L	200.0		88	30-130	4	20	
4-Bromophenyl-phenylether	87.6	10.0	ug/L	100.0		88	40-140	3	20	
4-Chloroaniline	78.2	20.0	ug/L	100.0		78	40-140	0.9	20	
4-Nitrophenol	92.2	50.0	ug/L	100.0		92	30-130	0.3	20	
Acetophenone	81.6	10.0	ug/L	100.0		82	40-140	4	20	
Aniline	59.4	10.0	ug/L	100.0		59	40-140	0.6	20	
Azobenzene	80.0	20.0	ug/L	100.0		80	40-140	4	20	
bis(2-Chloroethoxy)methane	76.9	10.0	ug/L	100.0		77	40-140	2	20	
bis(2-Chloroethyl)ether	74.4	10.0	ug/L	100.0		74	40-140	5	20	
bis(2-chloroisopropyl)Ether	78.7	10.0	ug/L	100.0		79	40-140	5	20	
bis(2-Ethylhexyl)phthalate	92.4	6.0	ug/L	100.0		92	40-140	1	20	
Butylbenzylphthalate	91.4	10.0	ug/L	100.0		91	40-140	1	20	
Dibenzofuran	82.6	10.0	ug/L	100.0		83	40-140	4	20	
Diethylphthalate	99.5	10.0	ug/L	100.0		100	40-140	3	20	
Dimethylphthalate	92.5	10.0	ug/L	100.0		92	40-140	3	20	
Di-n-butylphthalate	94.1	10.0	ug/L	100.0		94	40-140	0.1	20	
Di-n-octylphthalate	90.2	10.0	ug/L	100.0		90	40-140	1	20	
Hexachlorobutadiene	74.7	10.0	ug/L	100.0		75	40-140	6	20	
Hexachloroethane	69.1	5.0	ug/L	100.0		69	40-140	9	20	
Isophorone	78.7	10.0	ug/L	100.0		79	40-140	1	20	
Nitrobenzene	80.1	10.0	ug/L	100.0		80	40-140	4	20	
N-Nitrosodimethylamine	65.7	10.0	ug/L	100.0		66	40-140	6	20	
Phenol	72.4	10.0	ug/L	100.0		72	30-130	8	20	
Surrogate: 1,2-Dichlorobenzene-d4	*74.5*		ug/L	*100.0*		*75*	*30-130*			
Surrogate: 2,4,6-Tribromophenol	*127*		ug/L	*150.0*		*85*	*15-110*			
Surrogate: 2-Chlorophenol-d4	*114*		ug/L	*150.0*		*76*	*15-110*			
Surrogate: 2-Fluorobiphenyl	*79.2*		ug/L	*100.0*		*79*	*30-130*			
Surrogate: 2-Fluorophenol	*94.3*		ug/L	*150.0*		*63*	*15-110*			
Surrogate: Nitrobenzene-d5	*81.6*		ug/L	*100.0*		*82*	*30-130*			
Surrogate: Phenol-d6	*117*		ug/L	*150.0*		*78*	*15-110*			
Surrogate: p-Terphenyl-d14	*92.8*		ug/L	*100.0*		*93*	*30-130*			
8270D(SIM) Semi-Volatile Organic Compounds										
Batch CF61340 - 3520C										
Blank										
2-Methylnaphthalene	ND	0.20	ug/L							
Acenaphthene	ND	0.20	ug/L							

CERTIFICATE OF ANALYSIS

Client Name: The Vertex Companies
Client Project ID: 1 Congress St - NPDES

ESS Laboratory Work Order: 1606245

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8270D(SIM) Semi-Volatile Organic Compounds										
Batch CF61340 - 3520C										
Acenaphthylene	ND	0.20	ug/L							
Anthracene	ND	0.20	ug/L							
Benzo(a)anthracene	ND	0.05	ug/L							
Benzo(a)pyrene	ND	0.05	ug/L							
Benzo(b)fluoranthene	ND	0.05	ug/L							
Benzo(g,h,i)perylene	ND	0.20	ug/L							
Benzo(k)fluoranthene	ND	0.05	ug/L							
Chrysene	ND	0.05	ug/L							
Dibenzo(a,h)Anthracene	ND	0.05	ug/L							
Fluoranthene	ND	0.20	ug/L							
Fluorene	ND	0.20	ug/L							
Hexachlorobenzene	ND	0.20	ug/L							
Indeno(1,2,3-cd)Pyrene	ND	0.05	ug/L							
Naphthalene	ND	0.20	ug/L							
Pentachlorophenol	ND	0.90	ug/L							
Phenanthrene	ND	0.20	ug/L							
Pyrene	ND	0.20	ug/L							
LCS										
2-Methylnaphthalene	80.2	4.00	ug/L	100.0		80	40-140			
Acenaphthene	84.0	4.00	ug/L	100.0		84	40-140			
Acenaphthylene	83.4	4.00	ug/L	100.0		83	40-140			
Anthracene	85.2	4.00	ug/L	100.0		85	40-140			
Benzo(a)anthracene	88.8	1.00	ug/L	100.0		89	40-140			
Benzo(a)pyrene	93.6	1.00	ug/L	100.0		94	40-140			
Benzo(b)fluoranthene	92.6	1.00	ug/L	100.0		93	40-140			
Benzo(g,h,i)perylene	96.7	4.00	ug/L	100.0		97	40-140			
Benzo(k)fluoranthene	90.4	1.00	ug/L	100.0		90	40-140			
Chrysene	88.9	1.00	ug/L	100.0		89	40-140			
Dibenzo(a,h)Anthracene	98.2	1.00	ug/L	100.0		98	40-140			
Fluoranthene	91.8	4.00	ug/L	100.0		92	40-140			
Fluorene	91.4	4.00	ug/L	100.0		91	40-140			
Hexachlorobenzene	109	4.00	ug/L	100.0		109	40-140			
Indeno(1,2,3-cd)Pyrene	109	1.00	ug/L	100.0		109	40-140			
Naphthalene	73.2	4.00	ug/L	100.0		73	40-140			
Pentachlorophenol	124	18.0	ug/L	100.0		124	30-130			
Phenanthrene	87.0	4.00	ug/L	100.0		87	40-140			
Pyrene	94.8	4.00	ug/L	100.0		95	40-140			
LCS Dup										
2-Methylnaphthalene	79.4	4.00	ug/L	100.0		79	40-140	1	20	
Acenaphthene	80.8	4.00	ug/L	100.0		81	40-140	4	20	
Acenaphthylene	81.0	4.00	ug/L	100.0		81	40-140	3	20	
Anthracene	82.8	4.00	ug/L	100.0		83	40-140	3	20	
Benzo(a)anthracene	84.0	1.00	ug/L	100.0		84	40-140	6	20	
Benzo(a)pyrene	92.1	1.00	ug/L	100.0		92	40-140	2	20	
Benzo(b)fluoranthene	91.4	1.00	ug/L	100.0		91	40-140	1	20	

CERTIFICATE OF ANALYSIS

Client Name: The Vertex Companies
Client Project ID: 1 Congress St - NPDES

ESS Laboratory Work Order: 1606245

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8270D(SIM) Semi-Volatile Organic Compounds										
Batch CF61340 - 3520C										
Benzo(g,h,i)perylene	96.3	4.00	ug/L	100.0		96	40-140	0.5	20	
Benzo(k)fluoranthene	89.1	1.00	ug/L	100.0		89	40-140	2	20	
Chrysene	84.5	1.00	ug/L	100.0		85	40-140	5	20	
Dibenzo(a,h)Anthracene	95.7	1.00	ug/L	100.0		96	40-140	3	20	
Fluoranthene	88.6	4.00	ug/L	100.0		89	40-140	4	20	
Fluorene	86.7	4.00	ug/L	100.0		87	40-140	5	20	
Hexachlorobenzene	104	4.00	ug/L	100.0		104	40-140	4	20	
Indeno(1,2,3-cd)Pyrene	103	1.00	ug/L	100.0		103	40-140	6	20	
Naphthalene	74.2	4.00	ug/L	100.0		74	40-140	1	20	
Pentachlorophenol	119	18.0	ug/L	100.0		119	30-130	4	20	
Phenanthrene	83.5	4.00	ug/L	100.0		83	40-140	4	20	
Pyrene	89.9	4.00	ug/L	100.0		90	40-140	5	20	
Classical Chemistry										
Batch CF60951 - General Preparation										
Blank										
Hexavalent Chromium	ND	10	ug/L							
LCS										
Hexavalent Chromium	0.5		mg/L	0.4998		98	90-110			
LCS Dup										
Hexavalent Chromium	0.5		mg/L	0.4998		99	90-110	0.1	20	
Batch CF61020 - General Preparation										
Blank										**HT**
Total Residual Chlorine	ND	10	ug/L							
LCS										**HT**
Total Residual Chlorine	1		mg/L	1.360		101	85-115			
Batch CF61427 - General Preparation										
Blank										
Total Suspended Solids	ND	5	mg/L							
LCS										
Total Suspended Solids	60		mg/L	60.60		99	80-120			
Batch CF61440 - General Preparation										
Blank										
Total Petroleum Hydrocarbon	ND	5	mg/L							
LCS										
Total Petroleum Hydrocarbon	14	5	mg/L	19.38		71	66-114			
Batch CF61628 - TCN Prep										
Blank										
Total Cyanide (LL)	ND	5.00	ug/L							
LCS										
Total Cyanide (LL)	21.0	5.00	ug/L	20.06		105	90-110			

CERTIFICATE OF ANALYSIS

Client Name: The Vertex Companies
Client Project ID: 1 Congress St - NPDES

ESS Laboratory Work Order: 1606245

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Classical Chemistry										
Batch CF61628 - TCN Prep										
LCS										
Total Cyanide (LL)	150	5.00	ug/L	150.4		100	90-110			
LCS Dup										
Total Cyanide (LL)	149	5.00	ug/L	150.4		99	90-110	0.4	20	
Batch CF61630 - General Preparation										
Blank										
Phenols	ND	100	ug/L							
LCS										
Phenols	99	100	ug/L	100.0		99	80-120			
LCS										
Phenols	972	100	ug/L	1000		97	80-120			
504.1 1,2-Dibromoethane / 1,2-Dibromo-3-chloropropane										
Batch CF61311 - 504/8011										
Blank										
1,2-Dibromoethane	ND	0.015	ug/L							
1,2-Dibromoethane [2C]	ND	0.015	ug/L							
Surrogate: Pentachloroethane	*0.193*		ug/L	*0.2000*		*96*	*30-150*			
Surrogate: Pentachloroethane [2C]	*0.189*		ug/L	*0.2000*		*95*	*30-150*			
LCS										
1,2-Dibromoethane	0.194	0.015	ug/L	0.2000		97	70-130			
1,2-Dibromoethane [2C]	0.187	0.015	ug/L	0.2000		94	70-130			
Surrogate: Pentachloroethane	*0.177*		ug/L	*0.2000*		*88*	*30-150*			
Surrogate: Pentachloroethane [2C]	*0.173*		ug/L	*0.2000*		*87*	*30-150*			
LCS										
1,2-Dibromoethane	0.087	0.015	ug/L	0.08000		109	70-130			
1,2-Dibromoethane [2C]	0.085	0.015	ug/L	0.08000		106	70-130			
Surrogate: Pentachloroethane	*0.0690*		ug/L	*0.08000*		*86*	*30-150*			
Surrogate: Pentachloroethane [2C]	*0.0666*		ug/L	*0.08000*		*83*	*30-150*			

CERTIFICATE OF ANALYSIS

Client Name: The Vertex Companies
Client Project ID: 1 Congress St - NPDES ESS Laboratory Work Order: 1606245

Notes and Definitions

U	Analyte included in the analysis, but not detected
SC	Surrogate recovery(ies) outside of criteria. Reextraction/Reanalysis confirms results (SC).
Q	Calibration required quadratic regression (Q).
P	Percent difference between primary and confirmation results exceeds 40% (P).
HT	The maximum holding time listed in 40 CFR Part 136 Table II for pH, Dissolved Oxygen, Sulfite and Residual Chlorine is fifteen minutes.
D+	Relative percent difference for duplicate is outside of criteria (D+).
D	Diluted.
CD+	Continuing Calibration %Diff/Drift is above control limit (CD+).
B-	Blank Spike recovery is below lower control limit (B-).
ND	Analyte NOT DETECTED at or above the MRL (LOQ), LOD for DoD Reports, MDL for J-Flagged Analytes
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
MDL	Method Detection Limit
MRL	Method Reporting Limit
LOD	Limit of Detection
LOQ	Limit of Quantitation
DL	Detection Limit
I/V	Initial Volume
F/V	Final Volume
§	Subcontracted analysis; see attached report
1	Range result excludes concentrations of surrogates and/or internal standards eluting in that range.
2	Range result excludes concentrations of target analytes eluting in that range.
3	Range result excludes the concentration of the C9-C10 aromatic range.
Avg	Results reported as a mathematical average.
NR	No Recovery
[CALC]	Calculated Analyte
SUB	Subcontracted analysis; see attached report

CERTIFICATE OF ANALYSIS

Client Name: The Vertex Companies
Client Project ID: 1 Congress St - NPDES

ESS Laboratory Work Order: 1606245

ESS LABORATORY CERTIFICATIONS AND ACCREDITATIONS

ENVIRONMENTAL

Rhode Island Potable and Non Potable Water: LAI00179
http://www.health.ri.gov/find/labs/analytical/ESS.pdf

Connecticut Potable and Non Potable Water, Solid and Hazardous Waste: PH-0750
http://www.ct.gov/dph/lib/dph/environmental_health/environmental_laboratories/pdf/OutofStateCommercialLaboratories.pdf

Maine Potable and Non Potable Water, and Solid and Hazardous Waste: RI00002
http://www.maine.gov/dhhs/mecdc/environmental-health/water/dwp-services/labcert/documents/AllLabs.xls

Massachusetts Potable and Non Potable Water: M-RI002
http://public.dep.state.ma.us/Labcert/Labcert.aspx

New Hampshire (NELAP accredited) Potable and Non Potable Water, Solid and Hazardous Waste: 2424
http://des.nh.gov/organization/divisions/water/dwgb/nhelap/index.htm

New York (NELAP accredited) Non Potable Water, Solid and Hazardous Waste: 11313
http://www.wadsworth.org/labcert/elap/comm.html

New Jersey (NELAP accredited) Non Potable Water, Solid and Hazardous Waste: RI006
http://datamine2.state.nj.us/DEP_OPRA/OpraMain/pi_main?mode=pi_by_site&sort_order=PI_NAMEA&Select+a+Site:=58715

United States Department of Agriculture Soil Permit: P330-12-00139

Pennsylvania: 68-01752
http://www.depweb.state.pa.us/portal/server.pt/community/labs/13780/laboratory_accreditation_program/590095

ESS Laboratory Sample and Cooler Receipt Checklist

Client: The Vertex Companies - TB/CMT

Shipped/Delivered Via: ESS Courier

ESS Project ID: 1606245
Date Received: 6/9/2016
Project Due Date: 6/16/2016
Days for Project: 5 Day

1. Air bill manifest present? No
   Air No.: NA
2. Were custody seals present? No
3. Is radiation count <100 CPM? Yes
4. Is a Cooler Present? Yes
   Temp: 2.1 Iced with: Ice
5. Was COC signed and dated by client? Yes
6. Does COC match bottles? Yes
7. Is COC complete and correct? Yes
8. Were samples received intact? Yes
9. **Were labs informed about short holds & rushes?** (Yes) / No / NA
10. Were any analyses received outside of hold time? Yes / (No)

11. Any Subcontracting needed? Yes (No)
    ESS Sample IDs:
    Analysis:
    TAT:
12. Were VOAs received? (Yes) / No
    a. Air bubbles in aqueous VOAs? Yes / (No)
    b. Does methanol cover soil completely? Yes / No / (NA)

13. Are the samples properly preserved? (Yes) / No
    a. If metals preserved upon receipt: Date: Time: By:
    b. Low Level VOAs brought to freezer: Date: Time: By:

Sample Receiving Notes:

14. Was there a need to contact Project Manager? Yes / (No)
    a. Was there a need to contact the client? Yes / (No)
    Who was contacted? Date: Time: By:

Sample Number	Container ID	Proper Container	Air Bubbles Present	Sufficient Volume	Container Type	Preservative	Record pH (Cyanide and 608 Pesticides)
01	42331	Yes	NA	Yes	1L Amber - Unpres	NP	test pH=9 W 6/9/16 1730
01	42332	Yes	NA	Yes	1L Amber - Unpres	NP	
01	42333	Yes	NA	Yes	1L Amber - Unpres	NP	
01	42334	Yes	NA	Yes	1L Amber - Unpres	NP	
01	42335	Yes	NA	Yes	1L Amber - Unpres	NP	
01	42336	Yes	NA	Yes	1L Amber - Unpres	NP	
01	42337	Yes	NA	Yes	1L Amber - H2SO4	H2SO4	
01	42338	Yes	NA	Yes	1L Amber - H2SO4	H2SO4	
01	42339	Yes	NA	Yes	1L Poly - Unpres	NP	
01	42340	Yes	NA	Yes	250 mL Poly - Unpres	NP	
01	42341	Yes	NA	Yes	250 mL Poly - HNO3	HNO3	
01	42342	Yes	NA	Yes	250 mL Poly - NaOH	NaOH	pH>12 W 6/9/16 1730
01	42343	Yes	No	Yes	VOA Vial - HCl	HCL	
01	42344	Yes	No	Yes	VOA Vial - HCl	HCL	
01	42345	Yes	No	Yes	VOA Vial - HCl	HCL	
01	42346	Yes	No	Yes	VOA Vial - HCl	HCL	
01	42347	Yes	No	Yes	VOA Vial - HCl	HCL	
01	42348	Yes	No	Yes	VOA Vial - HCl	HCL	

2nd Review
Are barcode labels on correct containers? (Yes) / No

ESS Laboratory Sample and Cooler Receipt Checklist

Client: The Vertex Companies - TB/CMT

ESS Project ID: 1606245

Date Received: 6/9/2016

Completed By: _____ Date & Time: 6/9/16 1731

Reviewed By: _____ Date & Time: 6/9/16 1740

Delivered By: _____ 6/9/16 1740

ESS Laboratory

Division of Thielsch Engineering, Inc.

185 Frances Avenue, Cranston, RI 02910-2211
Tel. (401) 461-7181 Fax (401) 461-4486
www.esslaboratory.com

CHAIN OF CUSTODY

ESS Lab # 1606245

Turn Time X Standard Other______

Regulatory State: (MA) RI CT NH NJ NY ME Other______

Is this project for any of the following:(please circle)
MA-MCP Navy USACE CT DEP (Other NPDES)

Reporting Limits - NPDES

Electonic Deliverables (Excel) Access (PDF)

Co. Name: The Vertex Companies	Project #: 20026	Project Name: 1 Congress St	
Contact Person: Jesse Freeman	Address: 1 Congress St		
City: Boston	State: MA	Zip: 02114	PO #: 20026
Tel. 617-275-5407	Fax.	email: JFreeman@vertexeng.com	

Analysis

ESS Lab ID	Date	Collection Time	Grab-G Composite-C	Matrix	Sample ID	Pres Code	# of Containers	Type of Container	Vol of Container	VOA-624	SVOA w/ PAH	PCB+Pest-608	EDB	Total Metals Hex Cr	TCN	TPH-1664	Phenols	TRC TSS
1	6/9/2016	12:00	G	WW	NPDES-T2-100	1,2,4,3	18	V,AG,P	250mL, 1L	X	X	X	X	X	X	X	X	X

Container Type: P-Poly G-Glass AG-Amber Glass S-Sterile V-VOA

Matrix: S-Soil SD-Solid D-Sludge WW-Wastewater GW-Groundwater SW-Surface Water DW-Drinking Water O-Oil W-Wipes F-Filter

Cooler Present ✓ Yes ____ No

Seals Intact ____ Yes ____ No NA: ____

Cooler Temperature: 2.1 ICE

Internal Use Only
[✓] Pickup
[ ] Technician___

Preservation Code: 1-NP, 2-HCl, 3-H2SO4, 4-HNO3, 5-NaOH, 6-MeOH, 7-Asorbic Acid, 8-ZnAct, 9-______

Sampled by: Nicole Perlot

Comments:

Relinquished by: (Signature, Date & Time)	Received by: (Signature, Date & Time)	Relinquished by: (Signature, Date & Time)	Received by: (Signature, Date & Time)
		COOLER 6/9/16 1423	K Hallahan 6/9/16 1423
K Hallahan 6/9/16 1714	[signature] 6/9/16 1727		

*By circling MA-MCP, client acknowledges samples were collected in accordance with MADEP CAM VIIA

Please fax to the laboratory all changes to Chain of Custody

1 (White) Lab Copy
2 (Yellow) Client Receipt

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

September 25, 2017

Jesse Freeman
Vertex Engineering - Weymouth
400 Libbey Parkway
Weymouth, MA 02189

Project Location: One Congress St.
Client Job Number:
Project Number: [none]
Laboratory Work Order Number: 17I0704

Enclosed are results of analyses for samples received by the laboratory on September 15, 2017. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Meghan E. Kelley
Project Manager

Table of Contents

Table of Contents (continued)

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Vertex Engineering - Weymouth
400 Libbey Parkway
Weymouth, MA 02189
ATTN: Jesse Freeman

REPORT DATE: 9/25/2017

PURCHASE ORDER NUMBER:

PROJECT NUMBER: [none]

ANALYTICAL SUMMARY

WORK ORDER NUMBER: 17I0704

The results of analyses performed on the following samples submitted to the CON-TEST Analytical Laboratory are found in this report.

PROJECT LOCATION: One Congress St.

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
Municipal FH	17I0704-01	Water		EPA 200.7	
				EPA 624	
				SM21-22 4500 CL G	
BOS-049	17I0704-02	Surface Water		-	NH NELAC 2539/ MA M-MA014/CT PH-0494 +others
				EPA 1664B	
				EPA 200.7	
				EPA 200.8	
				EPA 245.1	
				EPA 300.0	NY11393/MA-MAI138/MA1110
				EPA 504.1	
				EPA 608	
				EPA 624	
				EPA 625	
				SM19-22 4500 NH3 C	MA M-MA-086/CT PH-0574/NY11148
				SM21-22 2540D	
				SM21-22 3500 Cr B	
				SM21-22 4500 CL G	
				SW-846 8270D	
				SW-846 9014	MA M-MA-086/CT PH-0574/NY11148
				Tri Chrome Calc.	
Trip Blank	17I0704-03	Trip Blank Water		EPA 624	

con-test® ANALYTICAL LABORATORY

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

CASE NARRATIVE SUMMARY

All reported results are within defined laboratory quality control objectives unless listed below or otherwise qualified in this report.

For method 8270, only a select list of compounds was requested and reported.

EPA 625

Qualifications:

L-04

Laboratory fortified blank/laboratory control sample recovery and duplicate recovery are outside of control limits. Reported value for this compound is likely to be biased on the low side.

Analyte & Samples(s) Qualified:

2-Chloronaphthalene
17I0704-02[BOS-049], B186688-BLK1, B186688-BS1, B186688-BSD1

L-07

Either laboratory fortified blank/laboratory control sample or duplicate recovery is outside of control limits, but the other is within limits. RPD between the two LFB/LCS results is within method specified criteria.

Analyte & Samples(s) Qualified:

Fluorene
B186688-BSD1

Pyrene
B186688-BSD1

V-04

Initial calibration did not meet method specifications. Compound was calibrated using a response factor where %RSD is outside of method specified criteria.

Analyte & Samples(s) Qualified:

4,6-Dinitro-2-methylphenol
17I0704-02[BOS-049], B186688-BLK1, B186688-BS1, B186688-BSD1

Benzidine
17I0704-02[BOS-049], B186688-BLK1, B186688-BS1, B186688-BSD1

V-19

Initial calibration did not meet method specifications. Compound was calibrated using linear regression with correlation coefficient <0.99. Reduced precision and accuracy may be associated with reported result.

Analyte & Samples(s) Qualified:

2,4-Dinitrophenol
17I0704-02[BOS-049], B186688-BLK1, B186688-BS1, B186688-BSD1

V-20

Continuing calibration did not meet method specifications and was biased on the high side. Data validation is not affected since sample result was "not detected" for this compound.

Analyte & Samples(s) Qualified:

2,4-Dinitrophenol
17I0704-02[BOS-049], B186688-BLK1, B186688-BS1, B186688-BSD1

4,6-Dinitro-2-methylphenol
17I0704-02[BOS-049], B186688-BLK1, B186688-BS1, B186688-BSD1

SM21-22 2540D

Qualifications:

R-04

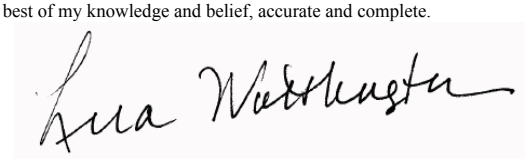
Duplicate relative percent difference (RPD) is a less useful indicator of sample precision for sample results that are <5 times the reporting limit (RL).

Analyte & Samples(s) Qualified:

Total Suspended Solids
17I0704-02[BOS-049], B186410-DUP2

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

The results of analyses reported only relate to samples submitted to the Con-Test Analytical Laboratory for testing.
I certify that the analyses listed above, unless specifically listed as subcontracted, if any, were performed under my direction according to the approved methodologies listed in this document, and that based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.



Lisa A. Worthington
Project Manager

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: One Congress St. Sample Description: Work Order: 17I0704

Date Received: 9/15/2017

Field Sample #: Municipal FH Sampled: 9/15/2017 14:50

Sample ID: 17I0704-01

Sample Matrix: Water

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Methyl tert-Butyl Ether (MTBE)	ND	2.0	0.090	µg/L	1		EPA 624	9/20/17	9/20/17 23:23	EEH

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
1,2-Dichloroethane-d4	98.2	70-130		9/20/17 23:23
Toluene-d8	100	70-130		9/20/17 23:23
4-Bromofluorobenzene	95.4	70-130		9/20/17 23:23

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: One Congress St. Sample Description: Work Order: 17I0704

Date Received: 9/15/2017

Field Sample #: Municipal FH Sampled: 9/15/2017 14:50

Sample ID: 17I0704-01

Sample Matrix: Water

Metals Analyses (Total)

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Hardness	16			mg/L	1		EPA 200.7	9/21/17	9/22/17 14:12	QNW

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: One Congress St. Sample Description: Work Order: 17I0704

Date Received: 9/15/2017

Field Sample #: Municipal FH Sampled: 9/15/2017 14:50

Sample ID: 17I0704-01

Sample Matrix: Water

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Chlorine, Residual	2.1	0.10	mg/L	5		SM21-22 4500 CL G	9/15/17	9/15/17 23:15	DJM

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: One Congress St. Sample Description: Work Order: 17I0704

Date Received: 9/15/2017

Field Sample #: BOS-049 Sampled: 9/15/2017 11:30

Sample ID: 17I0704-02

Sample Matrix: Surface Water

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acetone	ND	50	4.9	µg/L	1		EPA 624	9/20/17	9/20/17 23:50	EEH
tert-Amyl Methyl Ether (TAME)	ND	0.50	0.11	µg/L	1		EPA 624	9/20/17	9/20/17 23:50	EEH
Benzene	ND	1.0	0.12	µg/L	1		EPA 624	9/20/17	9/20/17 23:50	EEH
tert-Butyl Alcohol (TBA)	ND	20	2.2	µg/L	1		EPA 624	9/20/17	9/20/17 23:50	EEH
Carbon Tetrachloride	ND	2.0	0.25	µg/L	1		EPA 624	9/20/17	9/20/17 23:50	EEH
1,2-Dichlorobenzene	ND	2.0	0.17	µg/L	1		EPA 624	9/20/17	9/20/17 23:50	EEH
1,3-Dichlorobenzene	ND	2.0	0.17	µg/L	1		EPA 624	9/20/17	9/20/17 23:50	EEH
1,4-Dichlorobenzene	ND	2.0	0.15	µg/L	1		EPA 624	9/20/17	9/20/17 23:50	EEH
1,2-Dichloroethane	ND	2.0	0.19	µg/L	1		EPA 624	9/20/17	9/20/17 23:50	EEH
cis-1,2-Dichloroethylene	ND	1.0	0.15	µg/L	1		EPA 624	9/20/17	9/20/17 23:50	EEH
1,1-Dichloroethane	ND	2.0	0.16	µg/L	1		EPA 624	9/20/17	9/20/17 23:50	EEH
1,1-Dichloroethylene	ND	2.0	0.21	µg/L	1		EPA 624	9/20/17	9/20/17 23:50	EEH
1,4-Dioxane	ND	50	26	µg/L	1		EPA 624	9/20/17	9/20/17 23:50	EEH
Ethylbenzene	ND	2.0	0.13	µg/L	1		EPA 624	9/20/17	9/20/17 23:50	EEH
Methyl tert-Butyl Ether (MTBE)	ND	2.0	0.090	µg/L	1		EPA 624	9/20/17	9/20/17 23:50	EEH
Methylene Chloride	ND	5.0	3.2	µg/L	1		EPA 624	9/20/17	9/20/17 23:50	EEH
Tetrachloroethylene	ND	2.0	0.27	µg/L	1		EPA 624	9/20/17	9/20/17 23:50	EEH
Toluene	ND	1.0	0.17	µg/L	1		EPA 624	9/20/17	9/20/17 23:50	EEH
1,1,1-Trichloroethane	ND	2.0	0.13	µg/L	1		EPA 624	9/20/17	9/20/17 23:50	EEH
1,1,2-Trichloroethane	ND	2.0	0.24	µg/L	1		EPA 624	9/20/17	9/20/17 23:50	EEH
Trichloroethylene	ND	2.0	0.20	µg/L	1		EPA 624	9/20/17	9/20/17 23:50	EEH
Vinyl Chloride	ND	2.0	0.13	µg/L	1		EPA 624	9/20/17	9/20/17 23:50	EEH
m+p Xylene	ND	2.0	0.26	µg/L	1		EPA 624	9/20/17	9/20/17 23:50	EEH
o-Xylene	ND	2.0	0.13	µg/L	1		EPA 624	9/20/17	9/20/17 23:50	EEH

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
1,2-Dichloroethane-d4	98.6	70-130		9/20/17 23:50
Toluene-d8	100	70-130		9/20/17 23:50
4-Bromofluorobenzene	95.2	70-130		9/20/17 23:50

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: One Congress St. Sample Description: Work Order: 17I0704

Date Received: 9/15/2017

Field Sample #: BOS-049 Sampled: 9/15/2017 11:30

Sample ID: 17I0704-02

Sample Matrix: Surface Water

Semivolatile Organic Compounds by GC/MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Benzo(a)anthracene	ND	0.050	0.050	µg/L	1		SW-846 8270D	9/20/17	9/22/17 16:05	CJM
Benzo(a)pyrene	ND	0.10	0.10	µg/L	1		SW-846 8270D	9/20/17	9/22/17 16:05	CJM
Benzo(b)fluoranthene	ND	0.050	0.050	µg/L	1		SW-846 8270D	9/20/17	9/22/17 16:05	CJM
Benzo(k)fluoranthene	ND	0.20	0.20	µg/L	1		SW-846 8270D	9/20/17	9/22/17 16:05	CJM
Bis(2-Ethylhexyl)phthalate	0.20	1.0	0.10	µg/L	1	J	SW-846 8270D	9/20/17	9/22/17 16:05	CJM
Chrysene	ND	0.20	0.20	µg/L	1		SW-846 8270D	9/20/17	9/22/17 16:05	CJM
Dibenz(a,h)anthracene	ND	0.20	0.20	µg/L	1		SW-846 8270D	9/20/17	9/22/17 16:05	CJM
Indeno(1,2,3-cd)pyrene	ND	0.20	0.20	µg/L	1		SW-846 8270D	9/20/17	9/22/17 16:05	CJM
Pentachlorophenol	ND	1.0	0.34	µg/L	1		SW-846 8270D	9/20/17	9/22/17 16:05	CJM

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
2-Fluorophenol	45.2	15-110		9/22/17 16:05
Phenol-d6	29.9	15-110		9/22/17 16:05
Nitrobenzene-d5	75.2	30-130		9/22/17 16:05
2-Fluorobiphenyl	77.8	30-130		9/22/17 16:05
2,4,6-Tribromophenol	70.6	15-110		9/22/17 16:05
p-Terphenyl-d14	74.0	30-130		9/22/17 16:05

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Project Location: One Congress St. Sample Description: Work Order: 17I0704

Date Received: 9/15/2017

Field Sample #: BOS-049 Sampled: 9/15/2017 11:30

Sample ID: 17I0704-02

Sample Matrix: Surface Water

Semivolatile Organic Compounds by - GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acenaphthene	ND	5.0	µg/L	1		EPA 625	9/20/17	9/22/17 11:00	BGL
Acenaphthylene	ND	5.0	µg/L	1		EPA 625	9/20/17	9/22/17 11:00	BGL
Anthracene	ND	5.0	µg/L	1		EPA 625	9/20/17	9/22/17 11:00	BGL
Benzidine	ND	20	µg/L	1	V-04	EPA 625	9/20/17	9/22/17 11:00	BGL
Benzo(g,h,i)perylene	ND	5.0	µg/L	1		EPA 625	9/20/17	9/22/17 11:00	BGL
4-Bromophenylphenylether	ND	10	µg/L	1		EPA 625	9/20/17	9/22/17 11:00	BGL
Butylbenzylphthalate	ND	10	µg/L	1		EPA 625	9/20/17	9/22/17 11:00	BGL
4-Chloro-3-methylphenol	ND	10	µg/L	1		EPA 625	9/20/17	9/22/17 11:00	BGL
Bis(2-chloroethyl)ether	ND	10	µg/L	1		EPA 625	9/20/17	9/22/17 11:00	BGL
Bis(2-chloroisopropyl)ether	ND	10	µg/L	1		EPA 625	9/20/17	9/22/17 11:00	BGL
2-Chloronaphthalene	ND	10	µg/L	1	L-04	EPA 625	9/20/17	9/22/17 11:00	BGL
2-Chlorophenol	ND	10	µg/L	1		EPA 625	9/20/17	9/22/17 11:00	BGL
4-Chlorophenylphenylether	ND	10	µg/L	1		EPA 625	9/20/17	9/22/17 11:00	BGL
Di-n-butylphthalate	ND	10	µg/L	1		EPA 625	9/20/17	9/22/17 11:00	BGL
1,3-Dichlorobenzene	ND	5.0	µg/L	1		EPA 625	9/20/17	9/22/17 11:00	BGL
1,4-Dichlorobenzene	ND	5.0	µg/L	1		EPA 625	9/20/17	9/22/17 11:00	BGL
1,2-Dichlorobenzene	ND	5.0	µg/L	1		EPA 625	9/20/17	9/22/17 11:00	BGL
3,3-Dichlorobenzidine	ND	10	µg/L	1		EPA 625	9/20/17	9/22/17 11:00	BGL
2,4-Dichlorophenol	ND	10	µg/L	1		EPA 625	9/20/17	9/22/17 11:00	BGL
Diethylphthalate	ND	10	µg/L	1		EPA 625	9/20/17	9/22/17 11:00	BGL
2,4-Dimethylphenol	ND	10	µg/L	1		EPA 625	9/20/17	9/22/17 11:00	BGL
Dimethylphthalate	ND	10	µg/L	1		EPA 625	9/20/17	9/22/17 11:00	BGL
4,6-Dinitro-2-methylphenol	ND	10	µg/L	1	V-04, V-20	EPA 625	9/20/17	9/22/17 11:00	BGL
2,4-Dinitrophenol	ND	10	µg/L	1	V-19, V-20	EPA 625	9/20/17	9/22/17 11:00	BGL
2,4-Dinitrotoluene	ND	10	µg/L	1		EPA 625	9/20/17	9/22/17 11:00	BGL
2,6-Dinitrotoluene	ND	10	µg/L	1		EPA 625	9/20/17	9/22/17 11:00	BGL
Di-n-octylphthalate	ND	10	µg/L	1		EPA 625	9/20/17	9/22/17 11:00	BGL
1,2-Diphenylhydrazine (as Azobenzene)	ND	10	µg/L	1		EPA 625	9/20/17	9/22/17 11:00	BGL
Bis(2-Ethylhexyl)phthalate	ND	10	µg/L	1		EPA 625	9/20/17	9/22/17 11:00	BGL
Fluoranthene	ND	5.0	µg/L	1		EPA 625	9/20/17	9/22/17 11:00	BGL
Fluorene	ND	5.0	µg/L	1		EPA 625	9/20/17	9/22/17 11:00	BGL
Hexachlorobenzene	ND	10	µg/L	1		EPA 625	9/20/17	9/22/17 11:00	BGL
Hexachlorobutadiene	ND	10	µg/L	1		EPA 625	9/20/17	9/22/17 11:00	BGL
Hexachlorocyclopentadiene	ND	10	µg/L	1		EPA 625	9/20/17	9/22/17 11:00	BGL
Hexachloroethane	ND	10	µg/L	1		EPA 625	9/20/17	9/22/17 11:00	BGL
Isophorone	ND	10	µg/L	1		EPA 625	9/20/17	9/22/17 11:00	BGL
Naphthalene	ND	5.0	µg/L	1		EPA 625	9/20/17	9/22/17 11:00	BGL
Nitrobenzene	ND	10	µg/L	1		EPA 625	9/20/17	9/22/17 11:00	BGL
2-Nitrophenol	ND	10	µg/L	1		EPA 625	9/20/17	9/22/17 11:00	BGL
4-Nitrophenol	ND	10	µg/L	1		EPA 625	9/20/17	9/22/17 11:00	BGL
N-Nitrosodimethylamine	ND	10	µg/L	1		EPA 625	9/20/17	9/22/17 11:00	BGL
N-Nitrosodiphenylamine	ND	10	µg/L	1		EPA 625	9/20/17	9/22/17 11:00	BGL
N-Nitrosodi-n-propylamine	ND	10	µg/L	1		EPA 625	9/20/17	9/22/17 11:00	BGL
2-Methylnaphthalene	ND	5.0	µg/L	1		EPA 625	9/20/17	9/22/17 11:00	BGL

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39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: One Congress St. Sample Description: Work Order: 17I0704

Date Received: 9/15/2017

Field Sample #: BOS-049 Sampled: 9/15/2017 11:30

Sample ID: 17I0704-02

Sample Matrix: Surface Water

Semivolatile Organic Compounds by - GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Phenanthrene	ND	5.0	µg/L	1		EPA 625	9/20/17	9/22/17 11:00	BGL
2-Methylphenol	ND	10	µg/L	1		EPA 625	9/20/17	9/22/17 11:00	BGL
Phenol	ND	10	µg/L	1		EPA 625	9/20/17	9/22/17 11:00	BGL
3/4-Methylphenol	ND	10	µg/L	1		EPA 625	9/20/17	9/22/17 11:00	BGL
Pyrene	ND	5.0	µg/L	1		EPA 625	9/20/17	9/22/17 11:00	BGL
1,2,4-Trichlorobenzene	ND	5.0	µg/L	1		EPA 625	9/20/17	9/22/17 11:00	BGL
2,4,6-Trichlorophenol	ND	10	µg/L	1		EPA 625	9/20/17	9/22/17 11:00	BGL

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
2-Fluorophenol	44.7	15-110		9/22/17 11:00
Phenol-d6	34.8	15-110		9/22/17 11:00
Nitrobenzene-d5	76.4	30-130		9/22/17 11:00
2-Fluorobiphenyl	71.1	30-130		9/22/17 11:00
2,4,6-Tribromophenol	69.8	15-110		9/22/17 11:00
p-Terphenyl-d14	78.6	30-130		9/22/17 11:00

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: One Congress St. Sample Description: Work Order: 17I0704

Date Received: 9/15/2017

Field Sample #: BOS-049 Sampled: 9/15/2017 11:30

Sample ID: 17I0704-02

Sample Matrix: Surface Water

Polychlorinated Biphenyls By GC/ECD

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.10	0.057	µg/L	1		EPA 608	9/20/17	9/21/17 18:08	KAL
Aroclor-1221 [1]	ND	0.10	0.062	µg/L	1		EPA 608	9/20/17	9/21/17 18:08	KAL
Aroclor-1232 [1]	ND	0.10	0.038	µg/L	1		EPA 608	9/20/17	9/21/17 18:08	KAL
Aroclor-1242 [1]	ND	0.10	0.054	µg/L	1		EPA 608	9/20/17	9/21/17 18:08	KAL
Aroclor-1248 [1]	ND	0.10	0.064	µg/L	1		EPA 608	9/20/17	9/21/17 18:08	KAL
Aroclor-1254 [1]	ND	0.10	0.071	µg/L	1		EPA 608	9/20/17	9/21/17 18:08	KAL
Aroclor-1260 [1]	ND	0.10	0.073	µg/L	1		EPA 608	9/20/17	9/21/17 18:08	KAL

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Decachlorobiphenyl [1]	81.6	30-150		9/21/17 18:08
Decachlorobiphenyl [2]	95.6	30-150		9/21/17 18:08
Tetrachloro-m-xylene [1]	79.3	30-150		9/21/17 18:08
Tetrachloro-m-xylene [2]	80.4	30-150		9/21/17 18:08

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39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: One Congress St. Sample Description: Work Order: 17I0704

Date Received: 9/15/2017

Field Sample #: BOS-049 Sampled: 9/15/2017 11:30

Sample ID: 17I0704-02

Sample Matrix: Surface Water

Metals Analyses (Total)

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Antimony	ND	1.0		µg/L	1		EPA 200.8	9/20/17	9/21/17 6:15	MJH
Arsenic	ND	1.0		µg/L	1		EPA 200.8	9/20/17	9/21/17 6:15	MJH
Cadmium	ND	0.20		µg/L	1		EPA 200.8	9/20/17	9/21/17 6:15	MJH
Chromium	ND	10		µg/L	1		EPA 200.8	9/19/17	9/20/17 9:43	WSD
Chromium, Trivalent	ND	0.010		mg/L	1		Tri Chrome Calc.	9/20/17	9/22/17 0:03	MJH
Copper	6.2	1.0		µg/L	1		EPA 200.8	9/20/17	9/21/17 6:15	MJH
Iron	0.13	0.050		mg/L	1		EPA 200.7	9/20/17	9/21/17 14:32	QNW
Lead	1.5	0.50		µg/L	1		EPA 200.8	9/20/17	9/21/17 6:15	MJH
Mercury	ND	0.00010		mg/L	1		EPA 245.1	9/19/17	9/20/17 9:25	TJK
Nickel	ND	5.0		µg/L	1		EPA 200.8	9/20/17	9/21/17 6:15	MJH
Selenium	2.3	5.0	2.1	µg/L	1	J	EPA 200.8	9/20/17	9/21/17 6:15	MJH
Silver	ND	0.20		µg/L	1		EPA 200.8	9/20/17	9/21/17 6:15	MJH
Zinc	ND	20		µg/L	1		EPA 200.8	9/20/17	9/21/17 6:15	MJH

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: One Congress St. Sample Description: Work Order: 17I0704

Date Received: 9/15/2017

Field Sample #: BOS-049 Sampled: 9/15/2017 11:30

Sample ID: 17I0704-02

Sample Matrix: Surface Water

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Chlorine, Residual	0.028	0.020	mg/L	1		SM21-22 4500 CL G	9/15/17	9/15/17 23:15	DJM
Hexavalent Chromium	ND	0.0040	mg/L	1		SM21-22 3500 Cr B	9/15/17	9/15/17 23:45	DJM
Total Suspended Solids	17	5.0	mg/L	1	R-04	SM21-22 2540D	9/18/17	9/18/17 14:05	LL
Silica Gel Treated HEM (SGT-HEM)	ND	1.6	mg/L	1		EPA 1664B	9/21/17	9/21/17 13:15	LL

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Project Location: One Congress St. Sample Description: Work Order: 17I0704

Date Received: 9/15/2017

Field Sample #: BOS-049 Sampled: 9/15/2017 11:30

Sample ID: 17I0704-02

Sample Matrix: Surface Water

Drinking Water Organics EPA 504.1

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
1,2-Dibromoethane (EDB) (1)	ND	0.020	µg/L	1		EPA 504.1	9/21/17	9/21/17 16:34	TG

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
1,3-Dibromopropane (1)	82.0	70-130		9/21/17 16:34
1,3-Dibromopropane (2)	85.2	70-130		9/21/17 16:34

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Project Location: One Congress St. Sample Description: Work Order: 17I0704

Date Received: 9/15/2017

Field Sample #: BOS-049 Sampled: 9/15/2017 11:30

Sample ID: 17I0704-02

Sample Matrix: Surface Water

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Ammonia as N	0.063	0.075	mg/L	1		SM19-22 4500 NH3 C		9/20/17 0:00	AAL
Cyanide	ND	0.005	mg/L	1		SW-846 9014		9/20/17 0:00	AAL

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Date Received: 9/15/2017

Field Sample #: BOS-049 Sampled: 9/15/2017 11:30

Sample ID: 17I0704-02

Sample Matrix: Surface Water

Ethanol by 1671A

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Ethanol	ND	2000	ug/L	1		1671A		9/21/17 0:00	TAN

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39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: One Congress St. Sample Description: Work Order: 17I0704

Date Received: 9/15/2017

Field Sample #: BOS-049 Sampled: 9/15/2017 11:30

Sample ID: 17I0704-02

Sample Matrix: Surface Water

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Chloride	501	20	mg/L	20		EPA 300.0		9/20/17 0:00	EURO

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Project Location: One Congress St. Sample Description: Work Order: 17I0704

Date Received: 9/15/2017

Field Sample #: Trip Blank Sampled: 9/15/2017 00:00

Sample ID: 17I0704-03

Sample Matrix: Trip Blank Water

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acetone	ND	50	4.9	µg/L	1		EPA 624	9/20/17	9/20/17 21:09	EEH
tert-Amyl Methyl Ether (TAME)	ND	0.50	0.11	µg/L	1		EPA 624	9/20/17	9/20/17 21:09	EEH
Benzene	ND	1.0	0.12	µg/L	1		EPA 624	9/20/17	9/20/17 21:09	EEH
tert-Butyl Alcohol (TBA)	ND	20	2.2	µg/L	1		EPA 624	9/20/17	9/20/17 21:09	EEH
Carbon Tetrachloride	ND	2.0	0.25	µg/L	1		EPA 624	9/20/17	9/20/17 21:09	EEH
1,2-Dichlorobenzene	ND	2.0	0.17	µg/L	1		EPA 624	9/20/17	9/20/17 21:09	EEH
1,3-Dichlorobenzene	ND	2.0	0.17	µg/L	1		EPA 624	9/20/17	9/20/17 21:09	EEH
1,4-Dichlorobenzene	ND	2.0	0.15	µg/L	1		EPA 624	9/20/17	9/20/17 21:09	EEH
1,2-Dichloroethane	ND	2.0	0.19	µg/L	1		EPA 624	9/20/17	9/20/17 21:09	EEH
cis-1,2-Dichloroethylene	ND	1.0	0.15	µg/L	1		EPA 624	9/20/17	9/20/17 21:09	EEH
1,1-Dichloroethane	ND	2.0	0.16	µg/L	1		EPA 624	9/20/17	9/20/17 21:09	EEH
1,1-Dichloroethylene	ND	2.0	0.21	µg/L	1		EPA 624	9/20/17	9/20/17 21:09	EEH
1,4-Dioxane	ND	50	26	µg/L	1		EPA 624	9/20/17	9/20/17 21:09	EEH
Ethylbenzene	ND	2.0	0.13	µg/L	1		EPA 624	9/20/17	9/20/17 21:09	EEH
Methyl tert-Butyl Ether (MTBE)	ND	2.0	0.090	µg/L	1		EPA 624	9/20/17	9/20/17 21:09	EEH
Methylene Chloride	ND	5.0	3.2	µg/L	1		EPA 624	9/20/17	9/20/17 21:09	EEH
Tetrachloroethylene	ND	2.0	0.27	µg/L	1		EPA 624	9/20/17	9/20/17 21:09	EEH
Toluene	ND	1.0	0.17	µg/L	1		EPA 624	9/20/17	9/20/17 21:09	EEH
1,1,1-Trichloroethane	ND	2.0	0.13	µg/L	1		EPA 624	9/20/17	9/20/17 21:09	EEH
1,1,2-Trichloroethane	ND	2.0	0.24	µg/L	1		EPA 624	9/20/17	9/20/17 21:09	EEH
Trichloroethylene	ND	2.0	0.20	µg/L	1		EPA 624	9/20/17	9/20/17 21:09	EEH
Vinyl Chloride	ND	2.0	0.13	µg/L	1		EPA 624	9/20/17	9/20/17 21:09	EEH
m+p Xylene	ND	2.0	0.26	µg/L	1		EPA 624	9/20/17	9/20/17 21:09	EEH
o-Xylene	ND	2.0	0.13	µg/L	1		EPA 624	9/20/17	9/20/17 21:09	EEH

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
1,2-Dichloroethane-d4	97.0	70-130		9/20/17 21:09
Toluene-d8	101	70-130		9/20/17 21:09
4-Bromofluorobenzene	94.6	70-130		9/20/17 21:09

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Sample Extraction Data

EPA 1664B

Lab Number [Field ID]	Batch	Initial [mL]	Date
17I0704-02 [BOS-049]	B186770	900	09/21/17

Prep Method: EPA 200.7-EPA 200.7

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
17I0704-02 [BOS-049]	B186704	50.0	50.0	09/20/17

Prep Method: EPA 200.7-EPA 200.7

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
17I0704-01 [Municipal FH]	B186801	50.0	50.0	09/21/17

Prep Method: EPA 200.8-EPA 200.8

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
17I0704-02 [BOS-049]	B186543	50.0	50.0	09/19/17

Prep Method: EPA 200.8-EPA 200.8

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
17I0704-02 [BOS-049]	B186706	50.0	50.0	09/20/17

Prep Method: EPA 245.1-EPA 245.1

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
17I0704-02 [BOS-049]	B186577	6.00	6.00	09/19/17

Prep Method: EPA 504 water-EPA 504.1

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
17I0704-02 [BOS-049]	B186764	34.9	35.0	09/21/17

Prep Method: SW-846 3510C-EPA 608

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
17I0704-02 [BOS-049]	B186668	1000	5.00	09/20/17

Prep Method: SW-846 5030B-EPA 624

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
17I0704-01 [Municipal FH]	B186621	5	5.00	09/20/17
17I0704-02 [BOS-049]	B186621	5	5.00	09/20/17
17I0704-03 [Trip Blank]	B186621	5	5.00	09/20/17

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Sample Extraction Data

Prep Method: SW-846 3510C-EPA 625

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
17I0704-02 [BOS-049]	B186688	1000	1.00	09/20/17

SM21-22 2540D

Lab Number [Field ID]	Batch	Initial [mL]	Date
17I0704-02 [BOS-049]	B186410	100	09/18/17

SM21-22 3500 Cr B

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
17I0704-02 [BOS-049]	B186370	50.0	50.0	09/15/17

SM21-22 4500 CL G

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
17I0704-01 [Municipal FH]	B186372	100	100	09/15/17
17I0704-02 [BOS-049]	B186372	100	100	09/15/17

Prep Method: SW-846 3510C-SW-846 8270D

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
17I0704-02 [BOS-049]	B186981	1000	1.00	09/20/17

Prep Method: SW-846 3005A-Tri Chrome Calc.

Lab Number [Field ID]	Batch	Initial [mL]	Date
17I0704-02 [BOS-049]	B186740	1.00	09/20/17

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QUALITY CONTROL

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B186621 - SW-846 5030B										
Blank (B186621-BLK1)				Prepared & Analyzed: 09/20/17						
Acetone	ND	50	µg/L							
tert-Amyl Methyl Ether (TAME)	ND	0.50	µg/L							
Benzene	ND	1.0	µg/L							
tert-Butyl Alcohol (TBA)	ND	20	µg/L							
Carbon Tetrachloride	ND	2.0	µg/L							
1,2-Dichlorobenzene	ND	2.0	µg/L							
1,3-Dichlorobenzene	ND	2.0	µg/L							
1,4-Dichlorobenzene	ND	2.0	µg/L							
1,2-Dichloroethane	ND	2.0	µg/L							
cis-1,2-Dichloroethylene	ND	1.0	µg/L							
1,1-Dichloroethane	ND	2.0	µg/L							
1,1-Dichloroethylene	ND	2.0	µg/L							
1,4-Dioxane	ND	50	µg/L							
Ethylbenzene	ND	2.0	µg/L							
Methyl tert-Butyl Ether (MTBE)	ND	2.0	µg/L							
Methylene Chloride	ND	5.0	µg/L							
Tetrachloroethylene	ND	2.0	µg/L							
Toluene	ND	1.0	µg/L							
1,1,1-Trichloroethane	ND	2.0	µg/L							
1,1,2-Trichloroethane	ND	2.0	µg/L							
Trichloroethylene	ND	2.0	µg/L							
Vinyl Chloride	ND	2.0	µg/L							
m+p Xylene	ND	2.0	µg/L							
o-Xylene	ND	2.0	µg/L							
Surrogate: 1,2-Dichloroethane-d4	*25.0*		µg/L	25.0		99.8	70-130			
Surrogate: Toluene-d8	*25.2*		µg/L	25.0		101	70-130			
Surrogate: 4-Bromofluorobenzene	*23.6*		µg/L	25.0		94.2	70-130			
LCS (B186621-BS1)				Prepared & Analyzed: 09/20/17						
Acetone	61.8	50	µg/L	100		61.8	60-160			†
tert-Amyl Methyl Ether (TAME)	9.53	0.50	µg/L	10.0		95.3	70-130			
Benzene	11.5	1.0	µg/L	10.0		115	37-151			
tert-Butyl Alcohol (TBA)	68.5	20	µg/L	100		68.5	40-160			†
Carbon Tetrachloride	10.8	2.0	µg/L	10.0		108	70-140			
1,2-Dichlorobenzene	11.6	2.0	µg/L	10.0		116	18-190			
1,3-Dichlorobenzene	11.4	2.0	µg/L	10.0		114	59-156			
1,4-Dichlorobenzene	10.8	2.0	µg/L	10.0		108	18-190			
1,2-Dichloroethane	9.40	2.0	µg/L	10.0		94.0	49-155			
cis-1,2-Dichloroethylene	11.0	1.0	µg/L	10.0		110	70-130			
1,1-Dichloroethane	12.3	2.0	µg/L	10.0		123	59-155			
1,1-Dichloroethylene	7.71	2.0	µg/L	10.0		77.1	20-234			
1,4-Dioxane	99.4	50	µg/L	100		99.4	40-130			†
Ethylbenzene	10.9	2.0	µg/L	10.0		109	37-162			
Methyl tert-Butyl Ether (MTBE)	10.6	2.0	µg/L	10.0		106	70-130			
Methylene Chloride	7.28	5.0	µg/L	10.0		72.8	50-221			
Tetrachloroethylene	10.8	2.0	µg/L	10.0		108	64-148			
Toluene	10.5	1.0	µg/L	10.0		105	47-150			
1,1,1-Trichloroethane	10.9	2.0	µg/L	10.0		109	52-162			
1,1,2-Trichloroethane	10.5	2.0	µg/L	10.0		105	52-150			
Trichloroethylene	10.2	2.0	µg/L	10.0		102	71-157			
Vinyl Chloride	2.97	2.0	µg/L	10.0		29.7	20-251			
m+p Xylene	21.8	2.0	µg/L	20.0		109	70-130			

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QUALITY CONTROL

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B186621 - SW-846 5030B										
LCS (B186621-BS1)				Prepared & Analyzed: 09/20/17						
o-Xylene	10.6	2.0	µg/L	10.0		106	70-130			
Surrogate: 1,2-Dichloroethane-d4	*24.6*		µg/L	25.0		98.3	70-130			
Surrogate: Toluene-d8	*24.9*		µg/L	25.0		99.6	70-130			
Surrogate: 4-Bromofluorobenzene	*24.5*		µg/L	25.0		98.0	70-130			

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QUALITY CONTROL

Semivolatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B186981 - SW-846 3510C										
Blank (B186981-BLK1)				Prepared: 09/20/17 Analyzed: 09/22/17						
Benzo(a)anthracene	ND	0.050	µg/L							
Benzo(a)pyrene	ND	0.10	µg/L							
Benzo(b)fluoranthene	ND	0.050	µg/L							
Benzo(k)fluoranthene	ND	0.20	µg/L							
Bis(2-Ethylhexyl)phthalate	0.13	1.0	µg/L							J
Chrysene	ND	0.20	µg/L							
Dibenz(a,h)anthracene	ND	0.20	µg/L							
Indeno(1,2,3-cd)pyrene	ND	0.20	µg/L							
Pentachlorophenol	ND	1.0	µg/L							
Surrogate: 2-Fluorophenol	*77.6*		µg/L	200		38.8	15-110			
Surrogate: Phenol-d6	*49.0*		µg/L	200		24.5	15-110			
Surrogate: Nitrobenzene-d5	*69.9*		µg/L	100		69.9	30-130			
Surrogate: 2-Fluorobiphenyl	*74.5*		µg/L	100		74.5	30-130			
Surrogate: 2,4,6-Tribromophenol	*130*		µg/L	200		65.2	15-110			
Surrogate: p-Terphenyl-d14	*70.0*		µg/L	100		70.0	30-130			
LCS (B186981-BS1)				Prepared: 09/20/17 Analyzed: 09/22/17						
Benzo(a)anthracene	78.9	1.2	µg/L	100		78.9	40-140			
Benzo(a)pyrene	82.4	2.5	µg/L	100		82.4	40-140			
Benzo(b)fluoranthene	83.2	1.2	µg/L	100		83.2	40-140			
Benzo(k)fluoranthene	80.7	5.0	µg/L	100		80.7	40-140			
Bis(2-Ethylhexyl)phthalate	82.2	25	µg/L	100		82.2	40-140			
Chrysene	78.5	5.0	µg/L	100		78.5	40-140			
Dibenz(a,h)anthracene	74.5	5.0	µg/L	100		74.5	40-140			
Indeno(1,2,3-cd)pyrene	75.2	5.0	µg/L	100		75.2	40-140			
Pentachlorophenol	44.7	25	µg/L	100		44.7	30-130			
Surrogate: 2-Fluorophenol	*93.0*		µg/L	200		46.5	15-110			
Surrogate: Phenol-d6	*59.0*		µg/L	200		29.5	15-110			
Surrogate: Nitrobenzene-d5	*81.3*		µg/L	100		81.3	30-130			
Surrogate: 2-Fluorobiphenyl	*83.4*		µg/L	100		83.4	30-130			
Surrogate: 2,4,6-Tribromophenol	*101*		µg/L	200		50.7	15-110			
Surrogate: p-Terphenyl-d14	*73.6*		µg/L	100		73.6	30-130			
LCS Dup (B186981-BSD1)				Prepared: 09/20/17 Analyzed: 09/22/17						
Benzo(a)anthracene	74.0	1.2	µg/L	100		74.0	40-140	6.44	20	
Benzo(a)pyrene	77.3	2.5	µg/L	100		77.3	40-140	6.39	20	
Benzo(b)fluoranthene	78.4	1.2	µg/L	100		78.4	40-140	5.82	20	
Benzo(k)fluoranthene	75.6	5.0	µg/L	100		75.6	40-140	6.59	20	
Bis(2-Ethylhexyl)phthalate	75.2	25	µg/L	100		75.2	40-140	8.83	20	
Chrysene	73.8	5.0	µg/L	100		73.8	40-140	6.10	20	
Dibenz(a,h)anthracene	69.0	5.0	µg/L	100		69.0	40-140	7.70	20	
Indeno(1,2,3-cd)pyrene	70.6	5.0	µg/L	100		70.6	40-140	6.35	50	‡
Pentachlorophenol	41.7	25	µg/L	100		41.7	30-130	6.95	50	‡
Surrogate: 2-Fluorophenol	*90.4*		µg/L	200		45.2	15-110			
Surrogate: Phenol-d6	*56.4*		µg/L	200		28.2	15-110			
Surrogate: Nitrobenzene-d5	*73.0*		µg/L	100		73.0	30-130			
Surrogate: 2-Fluorobiphenyl	*76.3*		µg/L	100		76.3	30-130			
Surrogate: 2,4,6-Tribromophenol	*102*		µg/L	200		50.9	15-110			
Surrogate: p-Terphenyl-d14	*66.2*		µg/L	100		66.2	30-130			

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QUALITY CONTROL

Semivolatile Organic Compounds by - GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B186688 - SW-846 3510C										
Blank (B186688-BLK1)				Prepared: 09/20/17 Analyzed: 09/22/17						
Acenaphthene	ND	5.0	µg/L							
Acenaphthylene	ND	5.0	µg/L							
Anthracene	ND	5.0	µg/L							
Benzidine	ND	20	µg/L							V-04
Benzo(g,h,i)perylene	ND	5.0	µg/L							
4-Bromophenylphenylether	ND	10	µg/L							
Butylbenzylphthalate	ND	10	µg/L							
4-Chloro-3-methylphenol	ND	10	µg/L							
Bis(2-chloroethyl)ether	ND	10	µg/L							
Bis(2-chloroisopropyl)ether	ND	10	µg/L							
2-Chloronaphthalene	ND	10	µg/L							L-04
2-Chlorophenol	ND	10	µg/L							
4-Chlorophenylphenylether	ND	10	µg/L							
Di-n-butylphthalate	ND	10	µg/L							
1,3-Dichlorobenzene	ND	5.0	µg/L							
1,4-Dichlorobenzene	ND	5.0	µg/L							
1,2-Dichlorobenzene	ND	5.0	µg/L							
3,3-Dichlorobenzidine	ND	10	µg/L							
2,4-Dichlorophenol	ND	10	µg/L							
Diethylphthalate	ND	10	µg/L							
2,4-Dimethylphenol	ND	10	µg/L							
Dimethylphthalate	ND	10	µg/L							
4,6-Dinitro-2-methylphenol	ND	10	µg/L							V-04, V-20
2,4-Dinitrophenol	ND	10	µg/L							V-19, V-20
2,4-Dinitrotoluene	ND	10	µg/L							
2,6-Dinitrotoluene	ND	10	µg/L							
Di-n-octylphthalate	ND	10	µg/L							
1,2-Diphenylhydrazine (as Azobenzene)	ND	10	µg/L							
Bis(2-Ethylhexyl)phthalate	ND	10	µg/L							
Fluoranthene	ND	5.0	µg/L							
Fluorene	ND	5.0	µg/L							
Hexachlorobenzene	ND	10	µg/L							
Hexachlorobutadiene	ND	10	µg/L							
Hexachlorocyclopentadiene	ND	10	µg/L							
Hexachloroethane	ND	10	µg/L							
Isophorone	ND	10	µg/L							
Naphthalene	ND	5.0	µg/L							
Nitrobenzene	ND	10	µg/L							
2-Nitrophenol	ND	10	µg/L							
4-Nitrophenol	ND	10	µg/L							
N-Nitrosodimethylamine	ND	10	µg/L							
N-Nitrosodiphenylamine	ND	10	µg/L							
N-Nitrosodi-n-propylamine	ND	10	µg/L							
2-Methylnaphthalene	ND	5.0	µg/L							
Phenanthrene	ND	5.0	µg/L							
2-Methylphenol	ND	10	µg/L							
Phenol	ND	10	µg/L							
3/4-Methylphenol	ND	10	µg/L							
Pyrene	ND	5.0	µg/L							
1,2,4-Trichlorobenzene	ND	5.0	µg/L							
2,4,6-Trichlorophenol	ND	10	µg/L							
Surrogate: 2-Fluorophenol	*84.2*		µg/L	200		42.1	15-110			

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QUALITY CONTROL

Semivolatile Organic Compounds by - GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC		%REC Limits	RPD	RPD Limit	Notes
Batch B186688 - SW-846 3510C											
Blank (B186688-BLK1)				Prepared: 09/20/17 Analyzed: 09/22/17							
Surrogate: Phenol-d6	*63.2*		µg/L	200		31.6		15-110			
Surrogate: Nitrobenzene-d5	*71.3*		µg/L	100		71.3		30-130			
Surrogate: 2-Fluorobiphenyl	*66.6*		µg/L	100		66.6		30-130			
Surrogate: 2,4,6-Tribromophenol	*132*		µg/L	200		65.9		15-110			
Surrogate: p-Terphenyl-d14	*83.0*		µg/L	100		83.0		30-130			
LCS (B186688-BS1)				Prepared: 09/20/17 Analyzed: 09/22/17							
Acenaphthene	62.4	5.0	µg/L	100		62.4		47-145			
Acenaphthylene	58.9	5.0	µg/L	100		58.9		33-145			
Anthracene	62.1	5.0	µg/L	100		62.1		27-133			
Benzidine	69.8	20	µg/L	100		69.8		40-140			V-04
Benzo(g,h,i)perylene	57.6	5.0	µg/L	100		57.6		1-219			
4-Bromophenylphenylether	64.8	10	µg/L	100		64.8		53-127			
Butylbenzylphthalate	76.6	10	µg/L	100		76.6		1-152			
4-Chloro-3-methylphenol	70.2	10	µg/L	100		70.2		22-147			
Bis(2-chloroethyl)ether	78.7	10	µg/L	100		78.7		12-158			
Bis(2-chloroisopropyl)ether	85.3	10	µg/L	100		85.3		36-166			
2-Chloronaphthalene	57.4	10	µg/L	100		**57.4**	*	60-118			L-04
2-Chlorophenol	69.6	10	µg/L	100		69.6		23-134			
4-Chlorophenylphenylether	63.9	10	µg/L	100		63.9		25-158			
Di-n-butylphthalate	70.6	10	µg/L	100		70.6		1-118			
1,3-Dichlorobenzene	66.3	5.0	µg/L	100		66.3		1-172			
1,4-Dichlorobenzene	67.3	5.0	µg/L	100		67.3		20-124			
1,2-Dichlorobenzene	67.9	5.0	µg/L	100		67.9		32-129			
3,3-Dichlorobenzidine	75.8	10	µg/L	100		75.8		1-262			
2,4-Dichlorophenol	68.6	10	µg/L	100		68.6		39-135			
Diethylphthalate	64.6	10	µg/L	100		64.6		1-114			
2,4-Dimethylphenol	65.4	10	µg/L	100		65.4		32-119			
Dimethylphthalate	65.1	10	µg/L	100		65.1		1-112			
4,6-Dinitro-2-methylphenol	86.3	10	µg/L	100		86.3		1-181			V-04, V-20
2,4-Dinitrophenol	84.8	10	µg/L	100		84.8		1-191			V-19, V-20
2,4-Dinitrotoluene	77.4	10	µg/L	100		77.4		39-139			
2,6-Dinitrotoluene	81.1	10	µg/L	100		81.1		50-158			
Di-n-octylphthalate	81.4	10	µg/L	100		81.4		4-146			
1,2-Diphenylhydrazine (as Azobenzene)	74.6	10	µg/L	100		74.6		40-140			
Bis(2-Ethylhexyl)phthalate	75.1	10	µg/L	100		75.1		8-158			
Fluoranthene	63.9	5.0	µg/L	100		63.9		26-137			
Fluorene	60.5	5.0	µg/L	100		60.5		59-121			
Hexachlorobenzene	63.6	10	µg/L	100		63.6		1-152			
Hexachlorobutadiene	58.7	10	µg/L	100		58.7		24-116			
Hexachlorocyclopentadiene	63.2	10	µg/L	100		63.2		40-140			
Hexachloroethane	69.6	10	µg/L	100		69.6		40-113			
Isophorone	77.5	10	µg/L	100		77.5		21-196			
Naphthalene	61.1	5.0	µg/L	100		61.1		21-133			
Nitrobenzene	71.1	10	µg/L	100		71.1		35-180			
2-Nitrophenol	74.9	10	µg/L	100		74.9		29-182			
4-Nitrophenol	36.6	10	µg/L	100		36.6		1-132			
N-Nitrosodimethylamine	44.4	10	µg/L	100		44.4		40-140			
N-Nitrosodiphenylamine	82.3	10	µg/L	100		82.3		40-140			
N-Nitrosodi-n-propylamine	76.4	10	µg/L	100		76.4		1-230			
2-Methylnaphthalene	65.2	5.0	µg/L	100		65.2		40-140			
Phenanthrene	61.9	5.0	µg/L	100		61.9		54-120			

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QUALITY CONTROL

Semivolatile Organic Compounds by - GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC		%REC Limits	RPD	RPD Limit	Notes
Batch B186688 - SW-846 3510C											
LCS (B186688-BS1)				Prepared: 09/20/17 Analyzed: 09/22/17							
2-Methylphenol	67.0	10	µg/L	100		67.0		30-130			
Phenol	34.1	10	µg/L	100		34.1		5-112			
3/4-Methylphenol	63.1	10	µg/L	100		63.1		30-130			
Pyrene	64.6	5.0	µg/L	100		64.6		52-115			
1,2,4-Trichlorobenzene	64.2	5.0	µg/L	100		64.2		44-142			
2,4,6-Trichlorophenol	67.6	10	µg/L	100		67.6		37-144			
Surrogate: 2-Fluorophenol	*101*		µg/L	200		50.4		15-110			
Surrogate: Phenol-d6	*71.3*		µg/L	200		35.6		15-110			
Surrogate: Nitrobenzene-d5	*78.3*		µg/L	100		78.3		30-130			
Surrogate: 2-Fluorobiphenyl	*69.2*		µg/L	100		69.2		30-130			
Surrogate: 2,4,6-Tribromophenol	*142*		µg/L	200		70.8		15-110			
Surrogate: p-Terphenyl-d14	*73.9*		µg/L	100		73.9		30-130			
LCS Dup (B186688-BSD1)				Prepared: 09/20/17 Analyzed: 09/22/17							
Acenaphthene	56.3	5.0	µg/L	100		56.3		47-145	10.2		
Acenaphthylene	53.7	5.0	µg/L	100		53.7		33-145	9.32		
Anthracene	55.8	5.0	µg/L	100		55.8		27-133	10.7		
Benzidine	56.0	20	µg/L	100		56.0		40-140	21.9		V-04
Benzo(g,h,i)perylene	51.1	5.0	µg/L	100		51.1		1-219	12.0		
4-Bromophenylphenylether	55.2	10	µg/L	100		55.2		53-127	15.9		
Butylbenzylphthalate	62.5	10	µg/L	100		62.5		1-152	20.2		
4-Chloro-3-methylphenol	61.3	10	µg/L	100		61.3		22-147	13.4		
Bis(2-chloroethyl)ether	64.7	10	µg/L	100		64.7		12-158	19.4		
Bis(2-chloroisopropyl)ether	69.8	10	µg/L	100		69.8		36-166	20.0		
2-Chloronaphthalene	53.0	10	µg/L	100		**53.0**	*	60-118	8.10		L-04
2-Chlorophenol	59.0	10	µg/L	100		59.0		23-134	16.6		
4-Chlorophenylphenylether	56.1	10	µg/L	100		56.1		25-158	12.9		
Di-n-butylphthalate	59.8	10	µg/L	100		59.8		1-118	16.5		
1,3-Dichlorobenzene	56.8	5.0	µg/L	100		56.8		1-172	15.3		
1,4-Dichlorobenzene	56.7	5.0	µg/L	100		56.7		20-124	17.0		
1,2-Dichlorobenzene	57.6	5.0	µg/L	100		57.6		32-129	16.4		
3,3-Dichlorobenzidine	67.9	10	µg/L	100		67.9		1-262	11.0		
2,4-Dichlorophenol	59.2	10	µg/L	100		59.2		39-135	14.7		
Diethylphthalate	56.0	10	µg/L	100		56.0		1-114	14.3		
2,4-Dimethylphenol	57.7	10	µg/L	100		57.7		32-119	12.6		
Dimethylphthalate	58.6	10	µg/L	100		58.6		1-112	10.6		
4,6-Dinitro-2-methylphenol	74.7	10	µg/L	100		74.7		1-181	14.5		V-04, V-20
2,4-Dinitrophenol	81.4	10	µg/L	100		81.4		1-191	4.20		V-19, V-20
2,4-Dinitrotoluene	69.4	10	µg/L	100		69.4		39-139	10.8		
2,6-Dinitrotoluene	72.8	10	µg/L	100		72.8		50-158	10.8		
Di-n-octylphthalate	67.5	10	µg/L	100		67.5		4-146	18.7		
1,2-Diphenylhydrazine (as Azobenzene)	64.8	10	µg/L	100		64.8		40-140	14.2		
Bis(2-Ethylhexyl)phthalate	59.3	10	µg/L	100		59.3		8-158	23.4		
Fluoranthene	60.1	5.0	µg/L	100		60.1		26-137	6.09		
Fluorene	54.9	5.0	µg/L	100		**54.9**	*	59-121	9.60		L-07
Hexachlorobenzene	55.5	10	µg/L	100		55.5		1-152	13.5		
Hexachlorobutadiene	50.3	10	µg/L	100		50.3		24-116	15.5		
Hexachlorocyclopentadiene	53.9	10	µg/L	100		53.9		40-140	15.7		
Hexachloroethane	58.8	10	µg/L	100		58.8		40-113	16.9		
Isophorone	66.8	10	µg/L	100		66.8		21-196	14.8		
Naphthalene	53.7	5.0	µg/L	100		53.7		21-133	12.8		
Nitrobenzene	62.7	10	µg/L	100		62.7		35-180	12.5		

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QUALITY CONTROL

Semivolatile Organic Compounds by - GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC		%REC Limits	RPD	RPD Limit	Notes
Batch B186688 - SW-846 3510C											
LCS Dup (B186688-BSD1)				Prepared: 09/20/17 Analyzed: 09/22/17							
2-Nitrophenol	66.7	10	µg/L	100		66.7		29-182	11.6		
4-Nitrophenol	35.0	10	µg/L	100		35.0		1-132	4.52		
N-Nitrosodimethylamine	40.8	10	µg/L	100		40.8		40-140	8.33		
N-Nitrosodiphenylamine	71.9	10	µg/L	100		71.9		40-140	13.6		
N-Nitrosodi-n-propylamine	62.0	10	µg/L	100		62.0		1-230	20.8		
2-Methylnaphthalene	56.8	5.0	µg/L	100		56.8		40-140	13.8	20	
Phenanthrene	56.1	5.0	µg/L	100		56.1		54-120	9.79		
2-Methylphenol	56.4	10	µg/L	100		56.4		30-130	17.2	20	
Phenol	28.8	10	µg/L	100		28.8		5-112	16.9		
3/4-Methylphenol	52.6	10	µg/L	100		52.6		30-130	18.2	20	
Pyrene	51.8	5.0	µg/L	100		**51.8**	*	52-115	22.0		L-07
1,2,4-Trichlorobenzene	56.0	5.0	µg/L	100		56.0		44-142	13.7		
2,4,6-Trichlorophenol	60.5	10	µg/L	100		60.5		37-144	11.1		
Surrogate: 2-Fluorophenol	*86.4*		µg/L	200		43.2		15-110			
Surrogate: Phenol-d6	*60.6*		µg/L	200		30.3		15-110			
Surrogate: Nitrobenzene-d5	*67.7*		µg/L	100		67.7		30-130			
Surrogate: 2-Fluorobiphenyl	*61.4*		µg/L	100		61.4		30-130			
Surrogate: 2,4,6-Tribromophenol	*125*		µg/L	200		62.5		15-110			
Surrogate: p-Terphenyl-d14	*56.3*		µg/L	100		56.3		30-130			

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QUALITY CONTROL

Polychlorinated Biphenyls By GC/ECD - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B186668 - SW-846 3510C										
Blank (B186668-BLK1)				Prepared: 09/20/17 Analyzed: 09/21/17						
Aroclor-1016	ND	0.10	µg/L							
Aroclor-1016 [2C]	ND	0.10	µg/L							
Aroclor-1221	ND	0.10	µg/L							
Aroclor-1221 [2C]	ND	0.10	µg/L							
Aroclor-1232	ND	0.10	µg/L							
Aroclor-1232 [2C]	ND	0.10	µg/L							
Aroclor-1242	ND	0.10	µg/L							
Aroclor-1242 [2C]	ND	0.10	µg/L							
Aroclor-1248	ND	0.10	µg/L							
Aroclor-1248 [2C]	ND	0.10	µg/L							
Aroclor-1254	ND	0.10	µg/L							
Aroclor-1254 [2C]	ND	0.10	µg/L							
Aroclor-1260	ND	0.10	µg/L							
Aroclor-1260 [2C]	ND	0.10	µg/L							
Surrogate: Decachlorobiphenyl	*1.90*		µg/L	2.00		94.9	30-150			
Surrogate: Decachlorobiphenyl [2C]	*2.15*		µg/L	2.00		107	30-150			
Surrogate: Tetrachloro-m-xylene	*1.93*		µg/L	2.00		96.4	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	*1.92*		µg/L	2.00		96.2	30-150			
LCS (B186668-BS1)				Prepared: 09/20/17 Analyzed: 09/21/17						
Aroclor-1016	0.51	0.20	µg/L	0.500		103	50-114			
Aroclor-1016 [2C]	0.52	0.20	µg/L	0.500		105	50-114			
Aroclor-1260	0.47	0.20	µg/L	0.500		93.8	8-127			
Aroclor-1260 [2C]	0.47	0.20	µg/L	0.500		94.1	8-127			
Surrogate: Decachlorobiphenyl	*1.73*		µg/L	2.00		86.5	30-150			
Surrogate: Decachlorobiphenyl [2C]	*1.95*		µg/L	2.00		97.3	30-150			
Surrogate: Tetrachloro-m-xylene	*1.83*		µg/L	2.00		91.4	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	*1.82*		µg/L	2.00		91.2	30-150			
LCS Dup (B186668-BSD1)				Prepared: 09/20/17 Analyzed: 09/21/17						
Aroclor-1016	0.52	0.20	µg/L	0.500		103	50-114	0.301		
Aroclor-1016 [2C]	0.54	0.20	µg/L	0.500		108	50-114	3.01		
Aroclor-1260	0.48	0.20	µg/L	0.500		96.9	8-127	3.22		
Aroclor-1260 [2C]	0.48	0.20	µg/L	0.500		95.2	8-127	1.16		
Surrogate: Decachlorobiphenyl	*1.72*		µg/L	2.00		85.8	30-150			
Surrogate: Decachlorobiphenyl [2C]	*1.95*		µg/L	2.00		97.5	30-150			
Surrogate: Tetrachloro-m-xylene	*1.82*		µg/L	2.00		90.9	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	*1.80*		µg/L	2.00		90.2	30-150			

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QUALITY CONTROL

Metals Analyses (Total) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B186543 - EPA 200.8										
Blank (B186543-BLK1)				Prepared: 09/19/17 Analyzed: 09/20/17						
Chromium	ND	10	µg/L							
LCS (B186543-BS1)				Prepared: 09/19/17 Analyzed: 09/20/17						
Chromium	502	100	µg/L	500		100	85-115			
LCS Dup (B186543-BSD1)				Prepared: 09/19/17 Analyzed: 09/20/17						
Chromium	508	100	µg/L	500		102	85-115	1.12	20	
Batch B186577 - EPA 245.1										
Blank (B186577-BLK1)				Prepared: 09/19/17 Analyzed: 09/20/17						
Mercury	ND	0.00010	mg/L							
LCS (B186577-BS1)				Prepared: 09/19/17 Analyzed: 09/20/17						
Mercury	0.00186	0.00010	mg/L	0.00200		92.9	85-115			
LCS Dup (B186577-BSD1)				Prepared: 09/19/17 Analyzed: 09/20/17						
Mercury	0.00190	0.00010	mg/L	0.00200		94.8	85-115	2.03	20	
Batch B186704 - EPA 200.7										
Blank (B186704-BLK1)				Prepared: 09/20/17 Analyzed: 09/21/17						
Iron	ND	0.050	mg/L							
LCS (B186704-BS1)				Prepared: 09/20/17 Analyzed: 09/21/17						
Iron	4.00	0.050	mg/L	4.00		99.9	85-115			
LCS Dup (B186704-BSD1)				Prepared: 09/20/17 Analyzed: 09/21/17						
Iron	4.05	0.050	mg/L	4.00		101	85-115	1.32	20	
Batch B186706 - EPA 200.8										
Blank (B186706-BLK1)				Prepared: 09/20/17 Analyzed: 09/21/17						
Antimony	ND	1.0	µg/L							
Arsenic	ND	1.0	µg/L							
Cadmium	ND	0.20	µg/L							
Copper	ND	1.0	µg/L							
Lead	ND	0.50	µg/L							
Nickel	ND	5.0	µg/L							
Selenium	ND	5.0	µg/L							
Silver	ND	0.20	µg/L							
Zinc	ND	20	µg/L							

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QUALITY CONTROL

Metals Analyses (Total) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B186706 - EPA 200.8										
LCS (B186706-BS1)				Prepared: 09/20/17 Analyzed: 09/21/17						
Antimony	518	10	µg/L	500		104	85-115			
Arsenic	521	10	µg/L	500		104	85-115			
Cadmium	508	2.0	µg/L	500		102	85-115			
Copper	998	10	µg/L	1000		99.8	85-115			
Lead	517	5.0	µg/L	500		103	85-115			
Nickel	501	50	µg/L	500		100	85-115			
Selenium	519	50	µg/L	500		104	85-115			
Silver	486	2.0	µg/L	500		97.3	85-115			
Zinc	1070	200	µg/L	1000		107	85-115			
LCS Dup (B186706-BSD1)				Prepared: 09/20/17 Analyzed: 09/21/17						
Antimony	533	10	µg/L	500		107	85-115	2.88	20	
Arsenic	543	10	µg/L	500		109	85-115	4.08	20	
Cadmium	524	2.0	µg/L	500		105	85-115	3.03	20	
Copper	1050	10	µg/L	1000		105	85-115	4.73	20	
Lead	537	5.0	µg/L	500		107	85-115	3.90	20	
Nickel	526	50	µg/L	500		105	85-115	4.78	20	
Selenium	544	50	µg/L	500		109	85-115	4.73	20	
Silver	502	2.0	µg/L	500		100	85-115	3.11	20	
Zinc	1110	200	µg/L	1000		111	85-115	3.61	20	

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QUALITY CONTROL

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD		RPD Limit	Notes
Batch B186370 - SM21-22 3500 Cr B											
Blank (B186370-BLK1)				Prepared & Analyzed: 09/15/17							
Hexavalent Chromium	ND	0.0040	mg/L								
LCS (B186370-BS1)				Prepared & Analyzed: 09/15/17							
Hexavalent Chromium	0.098	0.0040	mg/L	0.100		97.8	86.6-115				
LCS Dup (B186370-BSD1)				Prepared & Analyzed: 09/15/17							
Hexavalent Chromium	0.10	0.0040	mg/L	0.100		100	86.6-115	2.47		6.61	
Batch B186372 - SM21-22 4500 CL G											
Blank (B186372-BLK1)				Prepared & Analyzed: 09/15/17							
Chlorine, Residual	ND	0.020	mg/L								
LCS (B186372-BS1)				Prepared & Analyzed: 09/15/17							
Chlorine, Residual	1.4	0.020	mg/L	1.30		109	82.5-130				
LCS Dup (B186372-BSD1)				Prepared & Analyzed: 09/15/17							
Chlorine, Residual	1.4	0.020	mg/L	1.30		108	82.5-130	1.17		6.2	
Batch B186410 - SM21-22 2540D											
Blank (B186410-BLK1)				Prepared & Analyzed: 09/18/17							
Total Suspended Solids	ND	2.5	mg/L								
LCS (B186410-BS1)				Prepared & Analyzed: 09/18/17							
Total Suspended Solids	202	10	mg/L	200		101	66.7-117				
Duplicate (B186410-DUP2)	**Source: 17I0704-02**			Prepared & Analyzed: 09/18/17							
Total Suspended Solids	22	5.0	mg/L		17			**25.6**	*	5	R-04
Batch B186770 - EPA 1664B											
Blank (B186770-BLK1)				Prepared & Analyzed: 09/21/17							
Silica Gel Treated HEM (SGT-HEM)	ND	1.4	mg/L								
LCS (B186770-BS1)				Prepared & Analyzed: 09/21/17							
Silica Gel Treated HEM (SGT-HEM)	8.9		mg/L	10.0		89.0	64-132				
Duplicate (B186770-DUP1)	**Source: 17I0704-02**			Prepared & Analyzed: 09/21/17							
Silica Gel Treated HEM (SGT-HEM)	ND	1.6	mg/L		ND			NC		18	

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QUALITY CONTROL

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B186770 - EPA 1664B										
Matrix Spike (B186770-MS1)	**Source: 17I0704-02**			Prepared & Analyzed: 09/21/17						
Silica Gel Treated HEM (SGT-HEM)	87	14	mg/L	100	ND	87.0	64-132			

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QUALITY CONTROL

Drinking Water Organics EPA 504.1 - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B186764 - EPA 504 water										
Blank (B186764-BLK1)				Prepared & Analyzed: 09/21/17						
1,2-Dibromoethane (EDB)	ND	0.021	µg/L							
1,2-Dibromoethane (EDB) [2C]	ND	0.021	µg/L							
LCS (B186764-BS1)				Prepared & Analyzed: 09/21/17						
1,2-Dibromoethane (EDB)	0.168	0.021	µg/L	0.180		93.1	70-130			
1,2-Dibromoethane (EDB) [2C]	0.166	0.021	µg/L	0.180		92.0	70-130			
LCS Dup (B186764-BSD1)				Prepared & Analyzed: 09/21/17						
1,2-Dibromoethane (EDB)	0.176	0.021	µg/L	0.183		96.6	70-130	4.89		
1,2-Dibromoethane (EDB) [2C]	0.172	0.021	µg/L	0.183		94.3	70-130	3.73		

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FLAG/QUALIFIER SUMMARY

*	QC result is outside of established limits.
†	Wide recovery limits established for difficult compound.
‡	Wide RPD limits established for difficult compound.
#	Data exceeded client recommended or regulatory level
ND	Not Detected
RL	Reporting Limit
DL	Method Detection Limit
MCL	Maximum Contaminant Level
	Percent recoveries and relative percent differences (RPDs) are determined by the software using values in the calculation which have not been rounded.
	No results have been blank subtracted unless specified in the case narrative section.

J	Detected but below the Reporting Limit (lowest calibration standard); therefore, result is an estimated concentration (CLP J-Flag).
L-04	Laboratory fortified blank/laboratory control sample recovery and duplicate recovery are outside of control limits. Reported value for this compound is likely to be biased on the low side.
L-07	Either laboratory fortified blank/laboratory control sample or duplicate recovery is outside of control limits, but the other is within limits. RPD between the two LFB/LCS results is within method specified criteria.
R-04	Duplicate relative percent difference (RPD) is a less useful indicator of sample precision for sample results that are <5 times the reporting limit (RL).
V-04	Initial calibration did not meet method specifications. Compound was calibrated using a response factor where %RSD is outside of method specified criteria.
V-19	Initial calibration did not meet method specifications. Compound was calibrated using linear regression with correlation coefficient <0.99. Reduced precision and accuracy may be associated with reported result.
V-20	Continuing calibration did not meet method specifications and was biased on the high side. Data validation is not affected since sample result was "not detected" for this compound.

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
EPA 200.7 in Water	
Iron	CT,MA,NH,NY,RI,NC,ME,VA
Hardness	CT,MA,NH,NY,RI,VA
EPA 200.8 in Water	
Antimony	CT,MA,NH,NY,RI,NC,ME,VA
Arsenic	CT,MA,NH,NY,RI,NC,ME,VA
Cadmium	CT,MA,NH,NY,RI,NC,ME,VA
Chromium	CT,MA,NH,NY,RI,NC,ME,VA
Copper	CT,MA,NH,NY,RI,NC,ME,VA
Lead	CT,MA,NH,NY,RI,NC,ME,VA
Nickel	CT,MA,NH,NY,RI,NC,ME,VA
Selenium	CT,MA,NH,NY,RI,NC,ME,VA
Silver	CT,MA,NH,NY,RI,NC,ME,VA
Zinc	CT,MA,NH,NY,RI,NC,ME,VA
EPA 245.1 in Water	
Mercury	CT,MA,NH,RI,NY,NC,ME,VA
EPA 300.0 in Water	
Chloride	NC,NY,MA,VA,ME,NH,CT,RI
EPA 608 in Water	
Aroclor-1016	CT,MA,NH,NY,RI,NC,ME,VA
Aroclor-1016 [2C]	CT,MA,NH,NY,RI,NC,ME,VA
Aroclor-1221	CT,MA,NH,NY,RI,NC,ME,VA
Aroclor-1221 [2C]	CT,MA,NH,NY,RI,NC,ME,VA
Aroclor-1232	CT,MA,NH,NY,RI,NC,ME,VA
Aroclor-1232 [2C]	CT,MA,NH,NY,RI,NC,ME,VA
Aroclor-1242	CT,MA,NH,NY,RI,NC,ME,VA
Aroclor-1242 [2C]	CT,MA,NH,NY,RI,NC,ME,VA
Aroclor-1248	CT,MA,NH,NY,RI,NC,ME,VA
Aroclor-1248 [2C]	CT,MA,NH,NY,RI,NC,ME,VA
Aroclor-1254	CT,MA,NH,NY,RI,NC,ME,VA
Aroclor-1254 [2C]	CT,MA,NH,NY,RI,NC,ME,VA
Aroclor-1260	CT,MA,NH,NY,RI,NC,ME,VA
Aroclor-1260 [2C]	CT,MA,NH,NY,RI,NC,ME,VA
EPA 624 in Water	
Acetone	NH,NY
Benzene	CT,MA,NH,NY,RI,NC,ME,VA
Carbon Tetrachloride	CT,MA,NH,NY,RI,NC,ME,VA
1,2-Dichlorobenzene	CT,MA,NH,NY,RI,NC,ME,VA
1,3-Dichlorobenzene	CT,MA,NH,NY,RI,NC,ME,VA
1,4-Dichlorobenzene	CT,MA,NH,NY,RI,NC,ME,VA
1,2-Dichloroethane	CT,MA,NH,NY,RI,NC,ME,VA
1,1-Dichloroethane	CT,MA,NH,NY,RI,NC,ME,VA
1,1-Dichloroethylene	CT,MA,NH,NY,RI,NC,ME,VA
Ethylbenzene	CT,MA,NH,NY,RI,NC,ME,VA
Methyl tert-Butyl Ether (MTBE)	NH,NY,NC
Methylene Chloride	CT,MA,NH,NY,RI,NC,ME,VA

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Analyte	Certifications
EPA 624 in Water	
Naphthalene	NC
Tetrachloroethylene	CT,MA,NH,NY,RI,NC,ME,VA
Toluene	CT,MA,NH,NY,RI,NC,ME,VA
1,2,4-Trichlorobenzene	NC
1,1,1-Trichloroethane	CT,MA,NH,NY,RI,NC,ME,VA
1,1,2-Trichloroethane	CT,MA,NH,NY,RI,NC,ME,VA
Trichloroethylene	CT,MA,NH,NY,RI,NC,ME,VA
Vinyl Chloride	CT,MA,NH,NY,RI,NC,ME,VA
m+p Xylene	CT,MA,NH,NY,RI,NC,VA
o-Xylene	CT,MA,NH,NY,RI,NC,VA
EPA 625 in Water	
Acenaphthene	CT,MA,NH,NY,NC,RI,ME,VA
Acenaphthylene	CT,MA,NH,NY,NC,RI,ME,VA
Anthracene	CT,MA,NH,NY,NC,RI,ME,VA
Benzidine	CT,MA,NH,NY,NC,RI,ME,VA
Benzo(a)anthracene	CT,MA,NH,NY,NC,RI,ME,VA
Benzo(a)pyrene	CT,MA,NH,NY,NC,RI,ME,VA
Benzo(b)fluoranthene	CT,MA,NH,NY,NC,RI,ME,VA
Benzo(g,h,i)perylene	CT,MA,NH,NY,NC,RI,ME,VA
Benzo(k)fluoranthene	CT,MA,NH,NY,NC,RI,ME,VA
4-Bromophenylphenylether	CT,MA,NH,NY,NC,RI,ME,VA
Butylbenzylphthalate	CT,MA,NH,NY,NC,RI,ME,VA
4-Chloro-3-methylphenol	CT,MA,NH,NY,NC,RI,VA
Bis(2-chloroethyl)ether	CT,MA,NH,NY,NC,RI,ME,VA
Bis(2-chloroisopropyl)ether	CT,MA,NH,NY,NC,RI,ME,VA
2-Chloronaphthalene	CT,MA,NH,NY,NC,RI,ME,VA
2-Chlorophenol	CT,MA,NH,NY,NC,RI,ME,VA
4-Chlorophenylphenylether	CT,MA,NH,NY,NC,RI,ME,VA
Chrysene	CT,MA,NH,NY,NC,RI,ME,VA
Dibenz(a,h)anthracene	CT,MA,NH,NY,NC,RI,ME,VA
Di-n-butylphthalate	CT,MA,NH,NY,NC,RI,ME,VA
1,3-Dichlorobenzene	MA,NC
1,4-Dichlorobenzene	MA,NC
1,2-Dichlorobenzene	MA,NC
3,3-Dichlorobenzidine	CT,MA,NH,NY,NC,RI,ME,VA
2,4-Dichlorophenol	CT,MA,NH,NY,NC,RI,ME,VA
Diethylphthalate	CT,MA,NH,NY,NC,RI,ME,VA
2,4-Dimethylphenol	CT,MA,NH,NY,NC,RI,ME,VA
Dimethylphthalate	CT,MA,NH,NY,NC,RI,ME,VA
4,6-Dinitro-2-methylphenol	CT,MA,NH,NY,NC,RI,ME,VA
2,4-Dinitrophenol	CT,MA,NH,NY,NC,RI,ME,VA
2,4-Dinitrotoluene	CT,MA,NH,NY,NC,RI,ME,VA
2,6-Dinitrotoluene	CT,MA,NH,NY,NC,RI,ME,VA
Di-n-octylphthalate	CT,MA,NH,NY,NC,RI,ME,VA
1,2-Diphenylhydrazine (as Azobenzene)	NC
Bis(2-Ethylhexyl)phthalate	CT,MA,NH,NY,NC,RI,ME,VA

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Analyte	Certifications
EPA 625 in Water	
Fluoranthene	CT,MA,NH,NY,NC,RI,ME,VA
Fluorene	CT,MA,NH,NY,NC,RI,ME,VA
Hexachlorobenzene	CT,MA,NH,NY,NC,RI,ME,VA
Hexachlorobutadiene	CT,MA,NH,NY,NC,RI,ME,VA
Hexachlorocyclopentadiene	CT,MA,NH,NY,NC,RI,ME,VA
Hexachloroethane	CT,MA,NH,NY,NC,RI,ME,VA
Indeno(1,2,3-cd)pyrene	CT,MA,NH,NY,NC,RI,ME,VA
Isophorone	CT,MA,NH,NY,NC,RI,ME,VA
Naphthalene	CT,MA,NH,NY,NC,RI,ME,VA
Nitrobenzene	CT,MA,NH,NY,NC,RI,ME,VA
2-Nitrophenol	CT,MA,NH,NY,NC,RI,ME,VA
4-Nitrophenol	CT,MA,NH,NY,NC,RI,ME,VA
N-Nitrosodimethylamine	CT,MA,NH,NY,NC,RI,ME,VA
N-Nitrosodiphenylamine	CT,MA,NH,NY,NC,RI,ME,VA
N-Nitrosodi-n-propylamine	CT,MA,NH,NY,NC,RI,ME,VA
Pentachlorophenol	CT,MA,NH,NY,NC,RI,ME,VA
2-Methylnaphthalene	NC
Phenanthrene	CT,MA,NH,NY,NC,RI,ME,VA
2-Methylphenol	NY,NC
Phenol	CT,MA,NH,NY,NC,RI,ME,VA
3/4-Methylphenol	NY,NC
Pyrene	CT,MA,NH,NY,NC,RI,ME,VA
1,2,4-Trichlorobenzene	CT,MA,NH,NY,NC,RI,ME,VA
2,4,6-Trichlorophenol	CT,MA,NH,NY,NC,RI,ME,VA
2-Fluorophenol	NC
SM19-22 4500 NH3 C in Water	
Ammonia as N	NY,MA,CT,RI,VA,NC,ME
SM21-22 2540D in Water	
Total Suspended Solids	CT,MA,NH,NY,RI,NC,ME,VA
SM21-22 3500 Cr B in Water	
Hexavalent Chromium	NY,CT,NH,RI,ME,VA,NC
SM21-22 4500 CL G in Water	
Chlorine, Residual	CT,MA,RI,ME
SW-846 8270D in Water	
Acenaphthene	CT,NY,NC,ME,NH,VA,NJ
Acenaphthylene	CT,NY,NC,ME,NH,VA,NJ
Anthracene	CT,NY,NC,ME,NH,VA,NJ
Benzidine	CT,NY,NC,ME,NH,VA,NJ
Benzo(a)anthracene	CT,NY,NC,ME,NH,VA,NJ
Benzo(a)pyrene	CT,NY,NC,ME,NH,VA,NJ
Benzo(b)fluoranthene	CT,NY,NC,ME,NH,VA,NJ
Benzo(g,h,i)perylene	CT,NY,NC,ME,NH,VA,NJ
Benzo(k)fluoranthene	CT,NY,NC,ME,NH,VA,NJ
Bis(2-chloroethyl)ether	CT,NY,NC,ME,NH,VA,NJ
Bis(2-chloroisopropyl)ether	CT,NY,NC,ME,NH,VA,NJ

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Analyte	Certifications
SW-846 8270D in Water	
Bis(2-Ethylhexyl)phthalate	CT,NY,NC,ME,NH,VA,NJ
4-Bromophenylphenylether	CT,NY,NC,ME,NH,VA,NJ
Butylbenzylphthalate	CT,NY,NC,ME,NH,VA,NJ
4-Chloro-3-methylphenol	CT,NY,NC,ME,NH,VA,NJ
2-Chloronaphthalene	CT,NY,NC,ME,NH,VA,NJ
2-Chlorophenol	CT,NY,NC,ME,NH,VA,NJ
4-Chlorophenylphenylether	CT,NY,NC,ME,NH,VA,NJ
Chrysene	CT,NY,NC,ME,NH,VA,NJ
Dibenz(a,h)anthracene	CT,NY,NC,ME,NH,VA,NJ
Di-n-butylphthalate	CT,NY,NC,ME,NH,VA,NJ
1,2-Dichlorobenzene	CT,NY,NC,ME,NH,VA,NJ
1,3-Dichlorobenzene	CT,NY,NC,ME,NH,VA,NJ
1,4-Dichlorobenzene	CT,NY,NC,ME,NH,VA,NJ
3,3-Dichlorobenzidine	CT,NY,NC,ME,NH,VA,NJ
2,4-Dichlorophenol	CT,NY,NC,ME,NH,VA,NJ
Diethylphthalate	CT,NY,NC,ME,NH,VA,NJ
2,4-Dimethylphenol	CT,NY,NC,ME,NH,VA,NJ
Dimethylphthalate	CT,NY,NC,ME,NH,VA,NJ
4,6-Dinitro-2-methylphenol	CT,NY,NC,ME,NH,VA,NJ
2,4-Dinitrophenol	CT,NY,NC,ME,NH,VA,NJ
2,4-Dinitrotoluene	CT,NY,NC,ME,NH,VA,NJ
2,6-Dinitrotoluene	CT,NY,NC,ME,NH,VA,NJ
Di-n-octylphthalate	CT,NY,NC,ME,NH,VA,NJ
1,2-Diphenylhydrazine (as Azobenzene)	NY,NC,ME
Fluoranthene	CT,NY,NC,ME,NH,VA,NJ
Fluorene	NY,NC,ME,NH,VA,NJ
Hexachlorobenzene	CT,NY,NC,ME,NH,VA,NJ
Hexachlorobutadiene	CT,NY,NC,ME,NH,VA,NJ
Hexachlorocyclopentadiene	CT,NY,NC,ME,NH,VA,NJ
Hexachloroethane	CT,NY,NC,ME,NH,VA,NJ
Indeno(1,2,3-cd)pyrene	CT,NY,NC,ME,NH,VA,NJ
Isophorone	CT,NY,NC,ME,NH,VA,NJ
2-Methylnaphthalene	CT,NY,NC,ME,NH,VA,NJ
2-Methylphenol	CT,NY,NC,NH,VA,NJ
3/4-Methylphenol	CT,NY,NC,NH,VA,NJ
Naphthalene	CT,NY,NC,ME,NH,VA,NJ
Nitrobenzene	CT,NY,NC,ME,NH,VA,NJ
2-Nitrophenol	CT,NY,NC,ME,NH,VA,NJ
4-Nitrophenol	CT,NY,NC,ME,NH,VA,NJ
N-Nitrosodimethylamine	CT,NY,NC,ME,NH,VA,NJ
N-Nitrosodiphenylamine	CT,NY,NC,ME,NH,VA,NJ
N-Nitrosodi-n-propylamine	CT,NY,NC,ME,NH,VA,NJ
Pentachlorophenol	CT,NY,NC,ME,NH,VA,NJ
Phenanthrene	CT,NY,NC,ME,NH,VA,NJ
Phenol	CT,NY,NC,ME,NH,VA,NJ
Pyrene	CT,NY,NC,ME,NH,VA,NJ
1,2,4-Trichlorobenzene	CT,NY,NC,ME,NH,VA,NJ

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CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
SW-846 8270D in Water	
2,4,6-Trichlorophenol	CT,NY,NC,ME,NH,VA,NJ
2-Fluorophenol	NC,VA
Phenol-d6	VA
Nitrobenzene-d5	VA
SW-846 9014 in Water	
Cyanide	NY,CT,NH,NC,ME,VA

The CON-TEST Environmental Laboratory operates under the following certifications and accreditations:

Code	Description	Number	Expires
AIHA	AIHA-LAP, LLC - ISO17025:2005	100033	02/1/2018
MA	Massachusetts DEP	M-MA100	06/30/2018
CT	Connecticut Department of Publilc Health	PH-0567	09/30/2017
NY	New York State Department of Health	10899 NELAP	04/1/2018
NH-S	New Hampshire Environmental Lab	2516 NELAP	02/5/2018
RI	Rhode Island Department of Health	LAO00112	12/30/2017
NC	North Carolina Div. of Water Quality	652	12/31/2017
NJ	New Jersey DEP	MA007 NELAP	06/30/2018
FL	Florida Department of Health	E871027 NELAP	06/30/2018
VT	Vermont Department of Health Lead Laboratory	LL015036	07/30/2018
ME	State of Maine	2011028	06/9/2019
VA	Commonwealth of Virginia	460217	12/14/2017
NH-P	New Hampshire Environmental Lab	2557 NELAP	09/6/2017
VT-DW	Vermont Department of Health Drinking Water	VT-255716	06/12/2018
NC-DW	North Carolina Department of Health	25703	07/31/2018

17I0704

con-test ANALYTICAL LABORATORY

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http://www.contestlabs.com Doc # 381 Rev 1_03242017

CHAIN OF CUSTODY RECORD

39 Spruce Street
East Longmeadow, MA 01028

Page 1 of 1

Company Name: Vertex
Address: Boston, MA
Phone:
Project Name:
Project Location: One Congress St
Project Number: 27026
Project Manager: Jesse Freeman
Con-Test Quote Name/Number:
Invoice Recipient:
Sampled By: Liz Phelps

Requested Turnaround Time
7-Day ☐ 10-Day ☐
Due Date: 5 Day

Rush-Approval Required
1-Day ☐ 3-Day ☐
2-Day ☐ 4-Day ☐

Data Delivery
Format: PDF ☒ EXCEL ☒
Other:
CLP Like Data Pkg Required: ☐
Email To: jfreeman@vertexeng.com
Fax To #:

ANALYSIS REQUESTED

Con-Test Work Order#	Client Sample ID / Description	Beginning Date/Time	Ending Date/Time	Composite	Grab	[1] Matrix Code	Conc Code	Hardness	MTBE	TRC	TPH, TSS, TRC,	Chloride, total metals	Hex Chromium	Cyanide, ethanol	Arsenic, EDB, PAHs,	625, 624, PCBs			# of Containers
1	Municipal FH	9/15/17	1450		✓	O		X	X	X									
2	BOS-049	9/15/17	1130		✓	SW					X	X	X	X	X	X			
3	Trip Blank																		

[2] Preservation Code
[3] Container Code

Dissolved Metals Samples
○ Field Filtered
○ Lab to Filter

Orthophosphate Samples
○ Field Filtered
○ Lab to Filter

[1] Matrix Codes:
GW = Ground Water
WW = Waste Water
DW = Drinking Water
A = Air
S = Soil
SL = Sludge
SOL = Solid
O = Other (please define)
Municipal Waters

[2] Preservation Codes:
I = Iced
H = HCL
M = Methanol
N = Nitric Acid
S = Sulfuric Acid
B = Sodium Bisulfate
X = Sodium Hydroxide
T = Sodium Thiosulfate
O = Other (please define)

[3] Container Codes:
A = Amber Glass
G = Glass
P = Plastic
ST = Sterile
V = Vial
S = Summa Canister
T = Tedlar Bag
O = Other (please define)

Comments:

Please use the following codes to indicate possible sample concentration within the **Conc Code** column above:
H - High; M - Medium; L - Low; C - Clean; U - Unknown

Relinquished by: (signature)	Date/Time:
	9/15/17
Received by: (signature)	Date/Time:
	9/15/17 1600
Relinquished by: (signature)	Date/Time:
	9/15/17 2030
Received by: (signature)	Date/Time:
	4.2 9/15/17 2030
Relinquished by: (signature)	Date/Time:
Received by: (signature)	Date/Time:

Detection Limit Requirements
MA
CT
Other:

Special Requirements
☐ MA MCP Required
MCP Certification Form Required
☐ CT RCP Required
RCP Certification Form Required
☐ MA State DW Required
PWSID #

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NELAC and AIHA-LAP, LLC Accredited

Project Entity
☐ Government ☐ Municipality ☐ MWRA ☐ WRTA
☐ Federal ☐ 21 J ☐ School
☐ City ☐ Brownfield ☐ MBTA

Other
☐ Chromatogram
☐ *AIHA-LAP, LLC*

PCB ONLY
☐ Soxhlet
☐ Non Soxhlet

Table of Contents

39 Spruce St.
East Longmeadow, MA. 01028
P: 413-525-2332
F: 413-525-6405
www.contestlabs.com

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Doc# 277 Rev 5 2017

Login Sample Receipt Checklist - (Rejection Criteria Listing - Using Acceptance Policy) Any False Statement will be brought to the attention of the Client - State True or False

Client Vertex

Received By A.F Date 9/15/17 Time 2030

How were the samples received? In Cooler T No Cooler ____ On Ice T No Ice ____ Direct from Sampling ____ Ambient ____ Melted Ice ____

Were samples within Temperature? 2-6°C T By Gun # 1 Actual Temp - 4.2 By Blank # ____ Actual Temp - ____

Was Custody Seal Intact? n/a Were Samples Tampered with? n/a

Was COC Relinquished ? T Does Chain Agree With Samples? T

Are there broken/leaking/loose caps on any samples? F

Is COC in ink/ Legible? T Were samples received within holding time? T

Did COC include all pertinent Information? Client T Project F Analysis T ID's T Sampler Name T Collection Dates/Times T

Are Sample labels filled out and legible? T

Are there Lab to Filters? n/a Who was notified? n/a

Are there Rushes? n/a Who was notified? n/a

Are there Short Holds? T Who was notified? David

Is there enough Volume? T

Is there Headspace where applicable? T MS/MSD? n/a

Proper Media/Containers Used? T Is splitting samples required? n/a

Were trip blanks received? T On COC? T

Do all samples have the proper pH? Acid T Base T

Vials	#	Containers:	#		#		#
Unp-		1 Liter Amb.	10	1 Liter Plastic	1	16 oz Amb.	
HCL-	10	500 mL Amb.		500 mL Plastic	2 3	8oz Amb/Clear	
Meoh-		250 mL Amb.		250 mL Plastic		4oz Amb/Clear	
Bisulfate-		Col./Bacteria		Flashpoint		2oz Amb/Clear	
DI-		Other Plastic		Other Glass		Encore	
Thiosulfate-	5	SOC Kit		Plastic Bag		Frozen:	
Sulfuric-		Perchlorate		Ziplock			

Unused Media

Vials	#	Containers:	#		#		#
Unp-		1 Liter Amb.		1 Liter Plastic		16 oz Amb.	
HCL-		500 mL Amb.		500 mL Plastic		8oz Amb/Clear	
Meoh-		250 mL Amb.		250 mL Plastic		4oz Amb/Clear	
Bisulfate-		Col./Bacteria		Flashpoint		2oz Amb/Clear	
DI-		Other Plastic		Other Glass		Encore	
Thiosulfate-		SOC Kit		Plastic Bag		Frozen:	
Sulfuric-		Perchlorate		Ziplock			

Comments: