HALEY & ALDRICH, INC.
465 Medford Street, Suite 2200
Boston, MA 02129
(617) 886.7400

26 April 2018
Revised 1 May 2018
File No. 12287-200

US Environmental Protection Agency
Office of Ecosystem Protection
5 Post Office Square – Suite 100 (OEP06-01)
Boston, MA 02109-3912

Attention: EPA/OEP RGP Applications Coordinator

Subject: Notice of Intent (NOI)
Temporary Construction Dewatering
Boston South Station Tower
Atlantic Avenue
Boston, Massachusetts

Dear Ms. Little:

On behalf of our client, South Station Phase 1 Owner, LLC, and in accordance with the National Pollutant Discharge Elimination System (NPDES) Remediation General Permit (RGP) in Massachusetts, MAG910000, this letter submits a Notice of Intent (NOI) and the applicable documentation as required by the US Environmental Protection Agency (EPA) for temporary construction site dewatering under the RGP. Haley & Aldrich, Inc. (Haley & Aldrich) has prepared this submission to facilitate off-site discharge of temporary dewatering during construction activities at the Boston South Station Tower, located in Boston, Massachusetts.

Site Location and Historical Site Usage

The Boston South Station development site ("the Site") is bordered by Atlantic Avenue to the west, the existing South Station bus terminal to the south, the historic South Station structure and Summer Street to the north, and the Fidelity Building and the United States Post Office Building to the east. The general Site location is shown on Figure 1, Project Locus. The Site is currently occupied by the historical South Station "Head House" and attached Concourse as well as a network of railroad tracks and pedestrian platforms owned/operated by a combination of Massachusetts Bay Commuter Rail (MBCR), Amtrak, and the Massachusetts Bay Transit Authority (MBTA). Current Site conditions are shown on Figure 2, Site and Historic Subsurface Exploration Location Plan.

Surface grades along Atlantic Avenue and Summer Street range from about El. 11 to El. 13. Project drawings indicate railroad track grades at approximate El. 12.3 and pedestrian platform grades at El. 18.3. The Concourse floor level is at El. 18.3, matching the pedestrian platform level, and the basement

level is reported at El. 3.5. The basement is used for storage, utilities, delivery access and other purposes and it extends south beyond the footprint of the Concourse under the pedestrian platforms.

Owner and Operator Information

Owner:
South Station Phase 1 Owner, LLC
c/o Hines Interests LP
One International Place
Suite 1120
Boston, MA 02110
Contact: Gregory B. Spivey,
Vice President Construction

Operator:

Suffolk Construction Company, Inc.
65 Allerton Street
Boston, MA 02119
Contact: Dennis Crowe,
Senior Project Manager

Proposed Activities

Phase I of the Boston South Station development includes the construction of a 51-story Tower over portions of the existing South Station Head House, track and platform areas, with the approximate limits of foundation work shown on Figure 2. A "Podium" level is planned to be constructed in the area between the tower (north end of the Site) and the existing bus station (south end of the Site) above the existing railroad tracks. South of the Tower, new office space will be constructed above the parking area. Below the Tower core, the lowest level floor will be finished at El. 18. Outside of the core, the Tower basement will be finished at about El. 3.

Dewatering System and Off-Site Discharge

During the remedial activities, it will be necessary to perform temporary construction dewatering to control surface water runoff from precipitation, groundwater seepage, and construction-generated water to enable excavations in-the-dry. Dewatering activities are anticipated to start in September 2018 and are anticipated to be required for up to 18 months. On average, we estimate effluent discharge rates of about 50 gallons per minute (gpm), with occasional peak flows of approximately 150 gpm during significant precipitation events. Temporary construction dewatering will be conducted from sumps located in excavations or from dewatering wells installed at the Site.

Temporary construction dewatering includes piping and discharge to storm drains located on or near the Site that ultimately discharge to the Boston Inner Harbor at the Fort Point Channel. The proposed discharge route and outfall are shown on Figure 4, Proposed Discharge Route (BWSC Outfall Map).

An effluent treatment system will be designed by the Contractor to meet the 2017 NPDES RGP Discharge Effluent Criteria. Prior to discharge, collected water will be routed through a sedimentation tank and a bag filter (and other treatment components, if needed) to remove suspended solids and undissolved chemical constituents, as shown on Figure 3, Proposed Treatment System Schematic.

Groundwater Quality Data

To assess groundwater quality to support this NOI, a groundwater sample was obtained from observation well HA-OW-4 (see Figure 2) in October 2017. The collected sample was submitted to Alpha Analytical Laboratory (Alpha) of Westborough, MA, for chemical analysis of 2017 NPDES Remediation General Permit parameters including volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), polyaromatic hydrocarbons (PAHs), total metals, total petroleum hydrocarbons (TPH), pesticides, polychlorinated biphenyls (PCBs), total suspended solids (TSS), chloride, total cyanide, total phenolics, and total residual chlorine.

Refer to Table I for a summary of groundwater analytical data. The recent groundwater analyses did not detect concentrations of chemical constituents above the 2017 NPDES RGP Project-Specific Effluent Limits or the applicable MCP reportable concentrations (RCGW-2). The construction dewatering effluent at the Site will be managed under a Remediation General Permit.

Receiving Water Quality Information and Dilution Factor

On 23 October 2017, Haley & Aldrich collected a receiving water sample from the Fort Point Channel area using a disposable polyethylene bailer. The Fort Point Channel has been identified as the surface water to which dewatering effluent from the Site will eventually discharge. The surface water sample was collected and submitted to Alpha for chemical analysis of pH, ammonia and salinity. Field parameters, including pH and temperature, were measured from surface water sample at the time of sampling. The results of water quality testing are summarized in Table I.

The pH and temperature readings collected in the field were used to calculate the Site Water Quality Based Effluent Limitations (WQBELs). It is our understanding that since the receiving water is a saltwater body, hardness does not need to be analyzed on either the effluent water or receiving water. We have additionally confirmed with the Massachusetts Department of Environmental Protection (MassDEP) that the dilution factor for the receiving waters is 1.

Effluent Criteria Determination

The EPA suggested WQBEL Calculation spreadsheet was used to calculate the effluent criteria for the Site. Groundwater and Receiving Water data were input, and the resulting criteria was tabulated in the attached Table I. As requested by EPA, the Microsoft Excel spreadsheet for the WQBEL calculation will be submitted to the EPA via email, for their review upon submission of this NOI.

NMFS Eligibility

Based on our review of the NMFS criterion, it is the opinion of Haley & Aldrich that related activities under the NPDES RGP are unlikely to adversely affect federally threatened or endangered listed species or critical habitat under the jurisdiction of NMFS and should not result in a taking of listed species.

According to Appendix I: Endangered Species Act (ESA) Guidance and Eligibility Criteria in the NPDES RGP, and reference footnoted below[1], the Atlantic Sturgeon and the Shortnose Sturgeon are the only ESA-listed species under the NMFS jurisdiction that may have a critical habitat in Massachusetts Bay.

The Shortnose Sturgeon mainly occupy deep channel sections of large coastal rivers and nearshore marine waters. The outfall to be used for the Boston South Station Tower discharge is not situated adjacent to large coastal rivers and is not expected to affect the Shortnose Sturgeon population. The closest river to the outfall is the Charles River, which is approximately 1.1 miles from the Site. Similarly, the Atlantic Sturgeon is more commonly found in large rivers and brackish waters; adults who live in coastal waters are typically found in shallow areas with sand and gravel substrates. The outfall proposed for discharge is not located in an area where Atlantic Sturgeon may be found, and the discharge is similarly not expected to affect its population. Furthermore, according the CRWA and NRWA references below[2], resident populations of Sturgeon no longer exist in the Charles River.

Historic Property Review

Based on a review of the resources provided by the U.S. National Register of Historic Places and a review of the Massachusetts Cultural Resource Information System (MACRIS), the South Station Headhouse building is listed as a historic property. Proposed discharges and discharge-related activities are not considered to have the potential to cause effects on the historic properties. The discharge is considered to meet Criterion B. Documentation is included in Appendix B.

Ethanol Discussion

The Site history does not suggest that ethanol was stored at the Site, or that a petroleum product containing ethanol was released at the Site, therefore analysis for ethanol was not conducted. Ethanol has been increasingly used in fuels since 2006 (according to the 2016 NOI Fact Sheet), and according to Site history, the Site has been used as an active train stations, with no known fuel-related storage or handling activities conducted onsite.

Appendices

The completed "Suggested Notice of Intent" (NOI) form as provided in the RGP is enclosed in Appendix A. The Site owner is the Hines. Hines has hired Suffolk Construction Company as the Contractor conducting the site work, including dewatering activities. The excavation subcontractor will operate the dewatering system. Haley & Aldrich is monitoring the Contractor's dewatering activities on behalf of Hines in accordance with the requirements for this NOI submission.

1 https://www3.epa.gov/region1/npdes/remediation/RGPNMFSletter.pdf
2 http://blog.crwa.org/blog/5-migratory-fish-found-in-the-charles-river-ecosystem
https://www.neponset.org/your-watershed/natural-history/aquatic-habitat/aquatic-life/migratory-fish/

Appendices B and C include the National Register of Historic Places and Endangered Species Act Documentation, respectively. Appendix D provides a copy of the Boston Water and Sewer (BWSC) Dewatering Permit application being provided to the BWSC as part of this RGP submission. Copies of the groundwater testing laboratory data reports are provided in Appendix E. Since the Site Contractor's dewatering submittal is not yet available, Appendix F provides details of typical the dewatering system components used to remove suspended solids and undissolved chemical constituents. A Best Management Practices Plan (BMPP), which outlines the proposed discharge operations covered under the RGP, will be available at the Site and is not being submitted with this NOI as requested by EPA.

Closing

Thank you very much for your consideration. Please feel free to contact us should you wish to discuss the information contained herein or if you need additional information.

Sincerely yours,
HALEY & ALDRICH, INC.

Kenneth N. Alepidis
Senior Technical Specialist - Geology

Ian M. Phillips, LSP
Senior Associate

Attachments:

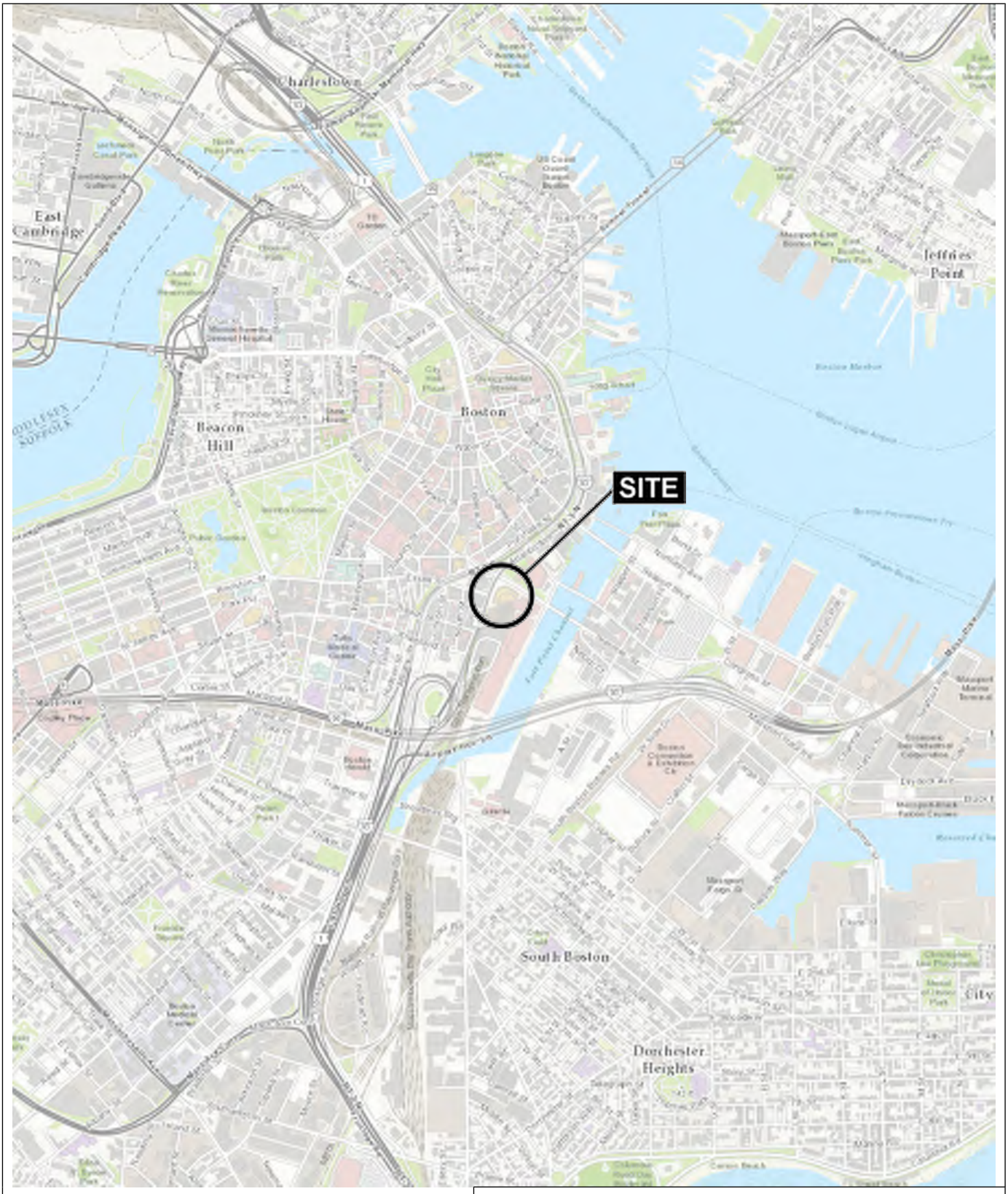
Table I – Summary of Groundwater Quality Data
Figure 1 – Site Locus
Figure 2 – Site and Groundwater Monitoring Well Location Plan
Figure 3 – Proposed Treatment System Schematic
Figure 4 – Proposed Discharge Route
Appendix A – Notice of Intent (NOI) for Remediation General Permit (RGP)
Appendix B – National Register of Historic Places and Massachusetts Historical Commission Documentation
Appendix C – Endangered Species Act Documentation
Appendix D – BWSC Permit Application
Appendix E – Laboratory Data Reports
Appendix F – Contractor Dewatering Cut Sheets and SDSs

TABLE I
SUMMARY OF WATER QUALITY DATA
SOUTH STATION
BOSTON, MA
FILE NO. 12287-200

LOCATION SAMPLE NAME SAMPLING DATE LAB SAMPLE ID	2017 NPDES RGP Project-Specific Effluent Limits (mg/l)	MCP RCGW-2 Reportable Criteria (mg/l)	Site Well HA-OW-4 10/27/2017 L1739283-01	Receiving Water HA17-SOUTH STATION -SS 10/23/2017 L1738446-01
VOCs by GC/MS (mg/l)				
Total VOCs by GC/MS	NA	NA	ND	-
Total BTEX	0.1	NA	ND	-
VOCs by GC/MS-SIM (mg/l)				
1,4-Dioxane	0.2	6	ND(0.003)	-
SVOCs by GC/MS (mg/l)				
Total SVOCs by GC/MS	NA	NA	ND	-
Total Phthalates	0.19	NA	ND	-
SVOCs by GC/MS-SIM (mg/l)				
Total Group I PAHs	0.001	NA	ND	-
Acenaphthene	0.001	10	0.00088	-
Fluoranthene	0.001	0.2	0.00076	-
Phenanthrene	0.001	10	0.0002	-
Pyrene	0.001	0.02	0.001	-
Total Group II PAHs	0.1	NA	0.00284	-
Other SVOCs by GC/MS-SIM	NA	NA	ND	-
Total Metals (mg/l)				
Antimony, Total	0.206	NA	ND(0.004)	-
Arsenic, Total	0.104	NA	ND(0.001)	-
Cadmium, Total	0.0102	NA	ND(0.0002)	-
Chromium, Total	0.323	NA	0.00167	-
Chromium, Hexavalent	0.323	NA	ND(0.01)	-
Copper, Total	0.0037	NA	ND(0.001)	-
Iron, Total	5	NA	0.562	-
Lead, Total	0.16	NA	0.00252	-
Mercury, Total	0.000739	NA	ND(0.0002)	-
Nickel, Total	1.45	NA	0.00211	-
Selenium, Total	0.2358	NA	ND(0.005)	-
Silver, Total	0.0351	NA	ND(0.0004)	-
Zinc, Total	0.42	NA	ND(0.01)	-
Microextractables by GC (mg/l)				
1,2-Dibromo-3-chloropropane	NA	1	ND(0.00001)	-
1,2-Dibromoethane	NA	0.002	ND(0.00001)	-
PCBs by GC (mg/l)				
Total PCBs	0.0005+	NA	ND	-
General Chemistry (mg/l)				
Chlorine, Total Residual	0.05+	NA	ND(0.02)	-
Cyanide, Total	0.005+	0.03	ND(0.005)	-
Phenolics, Total	NA	NA	ND(0.03)	-
Chloride	Report Only	NA	635	-
Solids, Total Suspended	30	NA	ND(5)	-
Salinity	NA	NA	ND(2)	28
Hardness	NA	NA	458	-
pH (H)	NA	NA	6.7	7.6
Nitrogen, Ammonia	Report Only	NA	1.24	0.147
TPH	5	5	ND(4)	-

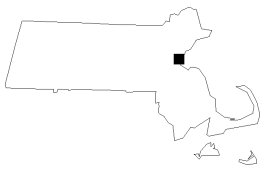
ABBREVIATIONS:
-: Not Analyzed
NA: Not applicable.
ND(2.5): Not detected; number in parenthesis is one-half the laboratory detection limit.
VOCs: Volatile Organic Compounds
SVOCs:Semivolatile Organic Compounds
PCBs: Polychlorinated Biphenyls
TPH: Total Petroleum Hydrocarbons

NOTES:
1. This table includes only those compounds detected on the dates indicated.
2. +: Indicates compliance limits are equal to the minimum level (ML) of the test method



MAP SOURCE: ESRI

SITE COORDINATES: 42°21'7"N, 71°3'18"W



HALEY ALDRICH

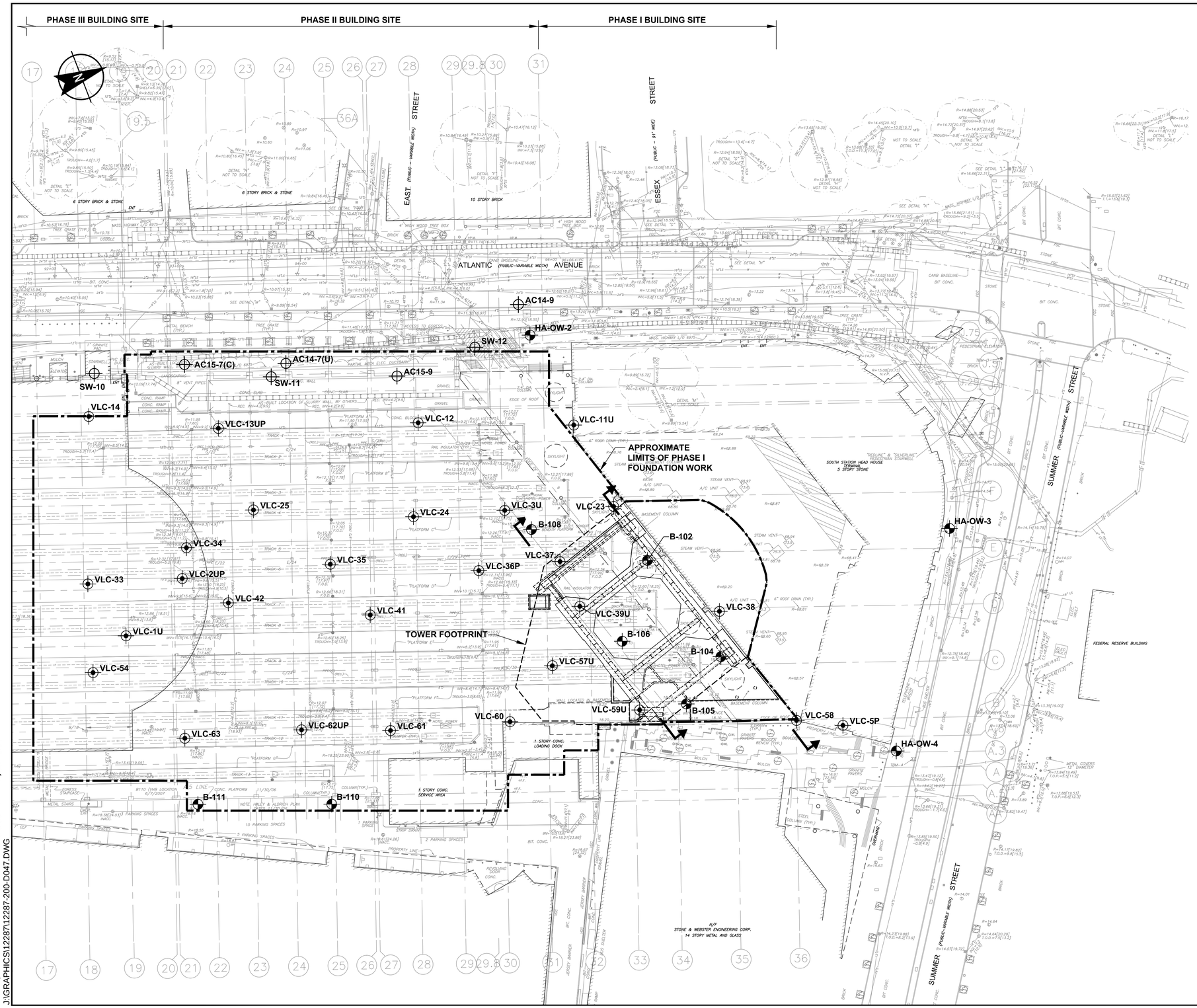
BOSTON SOUTH STATION
BOSTON, MASSACHUSETTS

PROJECT LOCUS

APPROXIMATE SCALE: 1 IN = 2000 FT
APRIL 2018

FIGURE 1

12287-200_1_LOCUS.PDF



LEGEND

HA-OW-2 ⊕ DESIGNATION AND APPROXIMATE LOCATION OF TEST BORING DRILLED BY GEOLOGIC EARTH EXPLORATIONS PERIODICALLY FROM 7 JULY TO 9 DECEMBER 2007

VLC-1U ⊕ DESIGNATION AND REPORTED LOCATION OF TEST BORING DRILLED BY GUILD DRILLING COMPANY FROM 6 OCTOBER 1980 TO 30 JANUARY 1981

SW-10 ⊕ DESIGNATION AND REPORTED LOCATION OF TEST BORING DRILLED FOR CENTRAL ARTERY DESIGN SECTION D011A

NOTES

1. BASE PLAN TAKEN FROM DRAWING ENTITLED " BOSTON SOUTH STATION - EXISTING CONDITIONS PLAN", DATED 7 FEBRUARY 2008, PREPARED BY HARRY R. FELDMAN, INC.
2. PROPOSED TOWER AND FOUNDATION LAYOUT MODIFIED FROM DRAWING ENTITLED "TS1.10.dwg" PROVIDED BY VERTIKA STRUCTURAL ENGINEERS, INC. ON 19 OCTOBER 2016.
3. HISTORICAL BORING LOCATIONS OBTAINED FROM DRAWING ENTITLED "BOSTON SOUTH STATION, PROJECT DESIGNATION VLC BORING PLAN", PREPARED BY MUESER RUTLEDGE, JOHNSTON & DESIMONE (MRJD), DATED 24 MARCH 1981.
4. HISTORICAL BORING DATA OBTAINED EITHER FROM AVAILABLE BORING LOGS OR SOIL PROFILES PREPARED BY MRJD, DATED 24 MARCH 1981 AND INCLUDED IN APPENDIX A OF THIS REPORT.
5. CENTRAL ARTERY HISTORICAL TEST BORING LOCATIONS OBTAINED FROM DRAWING ENTITLED "CENTRAL ARTERY DESIGN SECTION D011A, SUBSURFACE EXPLORATION PLAN STA. 88+00 TO 106+70 CANB", PREPARED BY GEI CONSULTANTS, INC. DATED OCTOBER 1992.

0 40 80 120 160
SCALE IN FEET

HALEY ALDRICH

BOSTON SOUTH STATION
BOSTON, MASSACHUSETTS

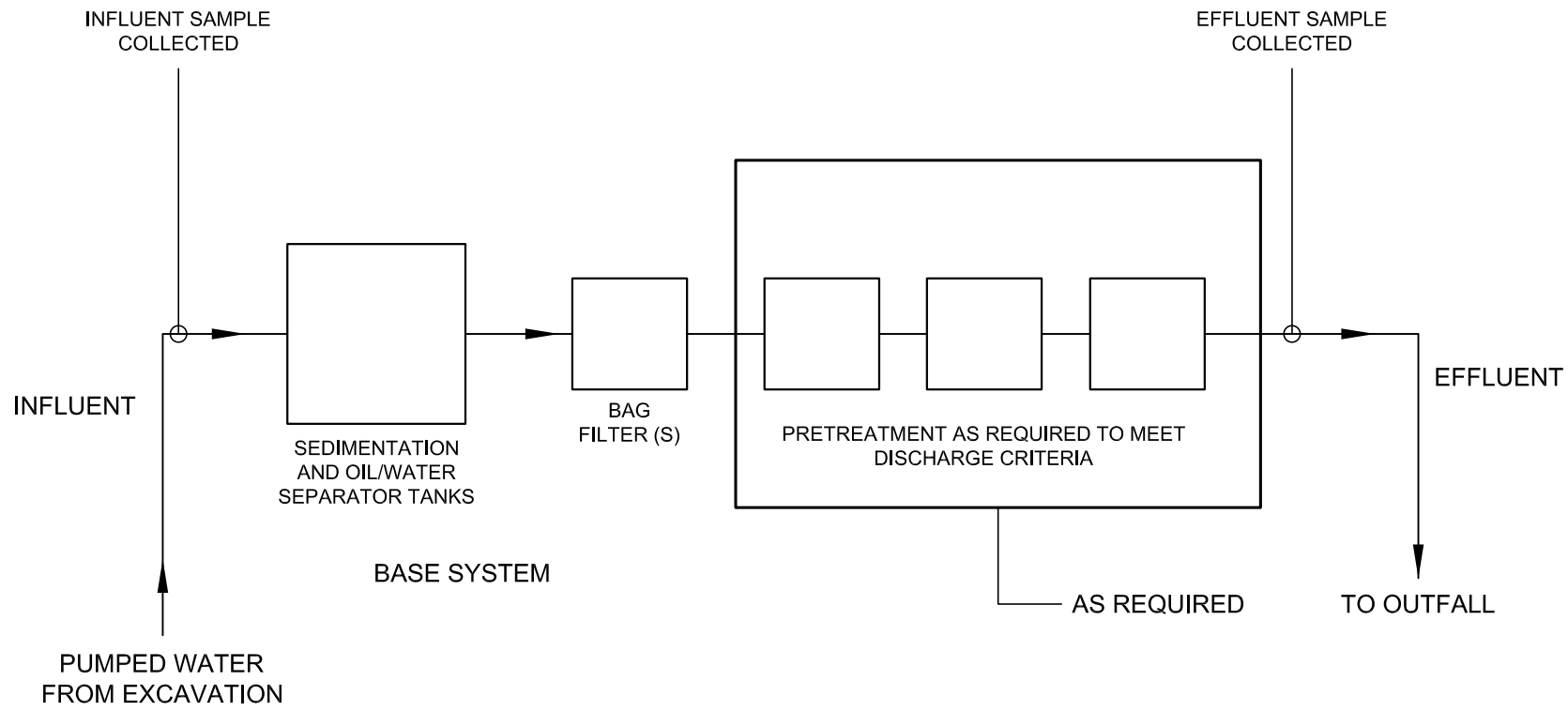
SITE AND HISTORIC SUBSURFACE EXPLORATION LOCATION PLAN

SCALE: AS SHOWN
APRIL 2018

FIGURE 2

ERVIN, DAYNA Printed: 11/17/2016 3:00 PM Layout: D047
J:\GRAPHICS\122871\12287-200-D047.DWG

G:\38625\NPDES\FIGURES\COPY-A142.DWG



LEGEND:

DIRECTION OF FLOW

NOTE:

1. DETAILS OF TREATMENT SYSTEM MAY VARY FROM SYSTEM INDICATED ABOVE. SPECIFIC MEANS AND METHODS OF TREATMENT TO BE SELECTED BY CONTRACTOR. WATER WILL BE TREATED TO MEET REQUIRED EFFLUENT STANDARDS.

HALEY ALDRICH

BOSTON SOUTH STATION
BOSTON, MASSACHUSETTS

PROPOSED TREATMENT SYSTEM SCHEMATIC

SCALE: NONE
APRIL 2018

FIGURE 3

BOSTON WATER AND SEWER

N W E S

200 150 100 50 0 100 200 300 Feet

1 inch = 100 feet

HALEY ALDRICH

BOSTON SOUTH STATION
BOSTON, MASSACHUSETTS

PROPOSED DISCHARGE ROUTE

SCALE AS SHOWN
APRIL 2018

FIGURE 4

APPENDIX A

Notice of Intent (NOI)
for Remediation General Permit (RGP)

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: Boston South Station Tower - Phase 1</td><td colspan="3">Site address:
Street: 700 Atlantic Avenue</td></tr>
<tr><td>City: Boston</td><td>State: MA</td><td>Zip: 02111</td></tr>
<tr><td rowspan="4">2. Site owner
South Station Phase 1 Owner, LLC
c/o Hines Interests LP

Owner is (check one): ☐ Federal ☐ State/Tribal ☒ Private
☐ Other; if so, specify:</td><td colspan="3">Contact Person: Gregory B. Spivey, Vice President Construction</td></tr>
<tr><td colspan="2">Telephone: 617-261-2264</td><td>Email: Greg.Spivey@hines.com</td></tr>
<tr><td colspan="3">Mailing address:
Street: One International Place, Suite 1120</td></tr>
<tr><td>City: Boston</td><td>State: MA</td><td>Zip: 02110</td></tr>
<tr><td rowspan="4">3. Site operator, if different than owner
Suffolk Construction Company, Inc.</td><td colspan="3">Contact Person: Dennis Crowe, Senior Project Manager</td></tr>
<tr><td colspan="2">Telephone: 617-517-4570</td><td>Email: DCrowe@suffolk.com</td></tr>
<tr><td colspan="3">Mailing address:
Street: 65 Allerton Street</td></tr>
<tr><td>City: Boston</td><td>State: MA</td><td>Zip: 02119</td></tr>
<tr><td>4. NPDES permit number assigned by EPA: N/A

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):
Fort Point Channel	MA70-02	SB

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. No

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.	N/A - Receiving water is an ocean
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.	1 - Receiving water is an ocean

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: Receiving water is an ocean, dilution factor not required

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: ☒ Other; if so, specify: Although "Contaminated Groundwater" is listed. See table for compounds actually detected.

2. Source water contaminants: None above RGP effluent criteria - see Table	
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): CSO064	Outfall location(s): (Latitude, Longitude) 42 21 05 71 03 10
Discharges enter the receiving water(s) via (check any that apply): ☐ Direct discharge to the receiving water ☒ Indirect discharge, if so, specify: ☐ 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: BWSC permit application being submitted concurrently with this NOI 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): September 2018- March 2020 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		X	1	4500NH3-BH	75	1240	1240	Report mg/L	---
Chloride		X	1	300.0	25000	635000	635000	Report µg/l	---
Total Residual Chlorine	X		1	4500CL	20	ND	ND	0.2 mg/L	**7.5 ug/L**
Total Suspended Solids	X		1	2540D	5000	ND	ND	30 mg/L	—
Antimony Total	X		1	6020A	4	ND	ND	206 µg/L	640
Arsenic Total	X		1	6020A	1	ND	ND	104 µg/L	36
Cadmium Total	X		1	6020A	0.2	ND	ND	10.2 µg/L	8.9
Chromium III	X		1	6020A	10	1.67	ND	323 µg/L	100
Chromium VI	X		1	3500CR	10	ND	ND	323 µg/L	50
Copper Total	X		1	6020A	1	ND	ND	242 µg/L	3.7
Iron Total		X	1	200.7	50	562	562	5,000 µg/L	
Lead Total		X	1	6020A	0.5	2.52	2.52	160 µg/L	8.5
Mercury Total	X		1	245.1	0.2	ND	ND	0.739 µg/L	1.11
Nickel Total		X	1	6020A	2	2.11	2.11	1,450 µg/L	8.3
Selenium Total	X		1	6020A	5	ND	ND	235.8 µg/L	71
Silver Total	X		1	6020A	0.4	ND	ND	35.1 µg/L	2.2
Zinc Total	X		1	6020A	10	ND	ND	420 µg/L	86
Cyanide Total	X		1	4500CN	5	ND	ND	178 mg/L	1.0
B. Non-Halogenated VOCs									
Total BTEX	X		2	8260C	NA	ND	ND	100 µg/L	---
Benzene	X		2	8260C	0.5	ND	ND	5.0 µg/L	---
1,4 Dioxane	X		2	8260C-SIM	3.0	ND	ND	200 µg/L	---
Acetone	X		2	8260C	5.0	ND	ND	7.97 mg/L	---
Phenol	X		2	8270D	5.0	ND	ND	1,080 µg/L	300

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	X		1	8260C	0.5	ND	ND	4.4 µg/L	1.6
1,2 Dichlorobenzene	X		1	8260C	2.5	ND	ND	600 µg/L	---
1,3 Dichlorobenzene	X		1	8260C	2.5	ND	ND	320 µg/L	---
1,4 Dichlorobenzene	X		1	8260C	2.5	ND	ND	5.0 µg/L	---
Total dichlorobenzene	X		1	8260C	NA	NA	NA	763 µg/L in NH	---
1,1 Dichloroethane	X		1	8260C	0.75	ND	ND	70 µg/L	---
1,2 Dichloroethane	X		1	8260C	0.5	ND	ND	5.0 µg/L	---
1,1 Dichloroethylene	X		1	8260C	0.5	ND	ND	3.2 µg/L	---
Ethylene Dibromide	X		1	8260C	2.0	ND	ND	0.05 µg/L	---
Methylene Chloride	X		1	8260C	3.0	ND	ND	4.6 µg/L	---
1,1,1 Trichloroethane	X		1	8260C	0.5	ND	ND	200 µg/L	---
1,1,2 Trichloroethane	X		1	8260C	0.75	ND	ND	5.0 µg/L	---
Trichloroethylene	X		1	8260C	0.5	ND	ND	5.0 µg/L	---
Tetrachloroethylene	X		1	8260C	0.5	ND	ND	5.0 µg/L	3.3
cis-1,2 Dichloroethylene	X		1	8260C	0.5	ND	ND	70 µg/L	---
Vinyl Chloride	X		1	8260C	1.0	ND	ND	2.0 µg/L	---
D. Non-Halogenated SVOCs									
Total Phthalates	X		1	8270D	NA	ND	ND	190 µg/L	
Diethylhexyl phthalate	X		1	8270D	5.0	ND	ND	101 µg/L	2.2
Total Group I PAHs	X		1	8270D	NA	ND	ND	1.0 µg/L	---
Benzo(a)anthracene	X		1	8270D	0.1	ND	ND	As Total PAHs	0.0038
Benzo(a)pyrene	X		1	8270D	0.1	ND	ND		0.0038
Benzo(b)fluoranthene	X		1	8270D	0.1	ND	ND		0.0038
Benzo(k)fluoranthene	X		1	8270D	0.1	ND	ND		0.0038
Chrysene	X		1	8270D	0.1	ND	ND		0.0038
Dibenzo(a,h)anthracene	X		1	8270D	0.1	ND	ND		0.0038
Indeno(1,2,3-cd)pyrene	X		1	8270D	0.1	ND	ND		0.0038

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		X	1	8270D	NA	2.84	2.84	100 µg/L	---
Naphthalene	X		1	8260C	2.5	ND	ND	20 µg/L	---
E. Halogenated SVOCs									
Total PCBs	X		1	608	0.25	ND	ND	0.000064 µg/L	---
Pentachlorophenol	X		1	8270D	0.4	ND	ND	1.0 µg/L	---
F. Fuels Parameters									
Total Petroleum Hydrocarbons	X		1	1664A	4	ND	ND	5.0 mg/L	---
Ethanol								Report mg/L	---
Methyl-tert-Butyl Ether	X		1	8260C	1.0	ND	ND	70 µg/L	
tert-Butyl Alcohol	X		1	8260C	10	ND	ND	120 µg/L in MA 40 µg/L in NH	---
tert-Amyl Methyl Ether	X		1	8260C	2	ND	ND	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:									
Hardness		X	1	200.7	0.660	458,000	458,000		
Salinity		X	1	2520	2	ND	ND		
pH		X	1			7.1	7.1		
See Attached Table 1									

E. Treatment system information

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

Following will be applied IF REQUIRED per effluent monitoring sampling

☐ 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.

Prior to discharge, collected water will be routed through a sedimentation tank and a bag filter and other necessary treatment components (potentially: Ion exchange, GAC, oil/water seperator), to remove suspended solids and undissolved chemical constituents, as shown on Figure 3 of the NPDES permit application.

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:

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: 150 gpm Is use of a flow meter feasible? (check one): ☒ Yes ☐ No, if so, provide justification:	
Provide the proposed maximum effluent flow in gpm. 150 gpm	
Provide the average effluent flow in gpm. 50 gpm	
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)
No chemicals or additives planned for use at this time.

☐ 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:

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

Find attached

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 ☒ N/A

I. Supplemental information

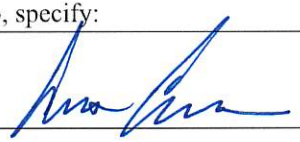
Describe any supplemental information being provided with the NOI. Include attachments if required or otherwise necessary.

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 implemented upon initiation of discharge.
Notification provided to the appropriate State, including a copy of this NOI, if required.	Check one: Yes ☐ No ☐ N/A
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: 	Date: 4/25/18
Print Name and Title:	Dennis Crowe, Senior Project Manager, Suffolk Construction Company, Inc.

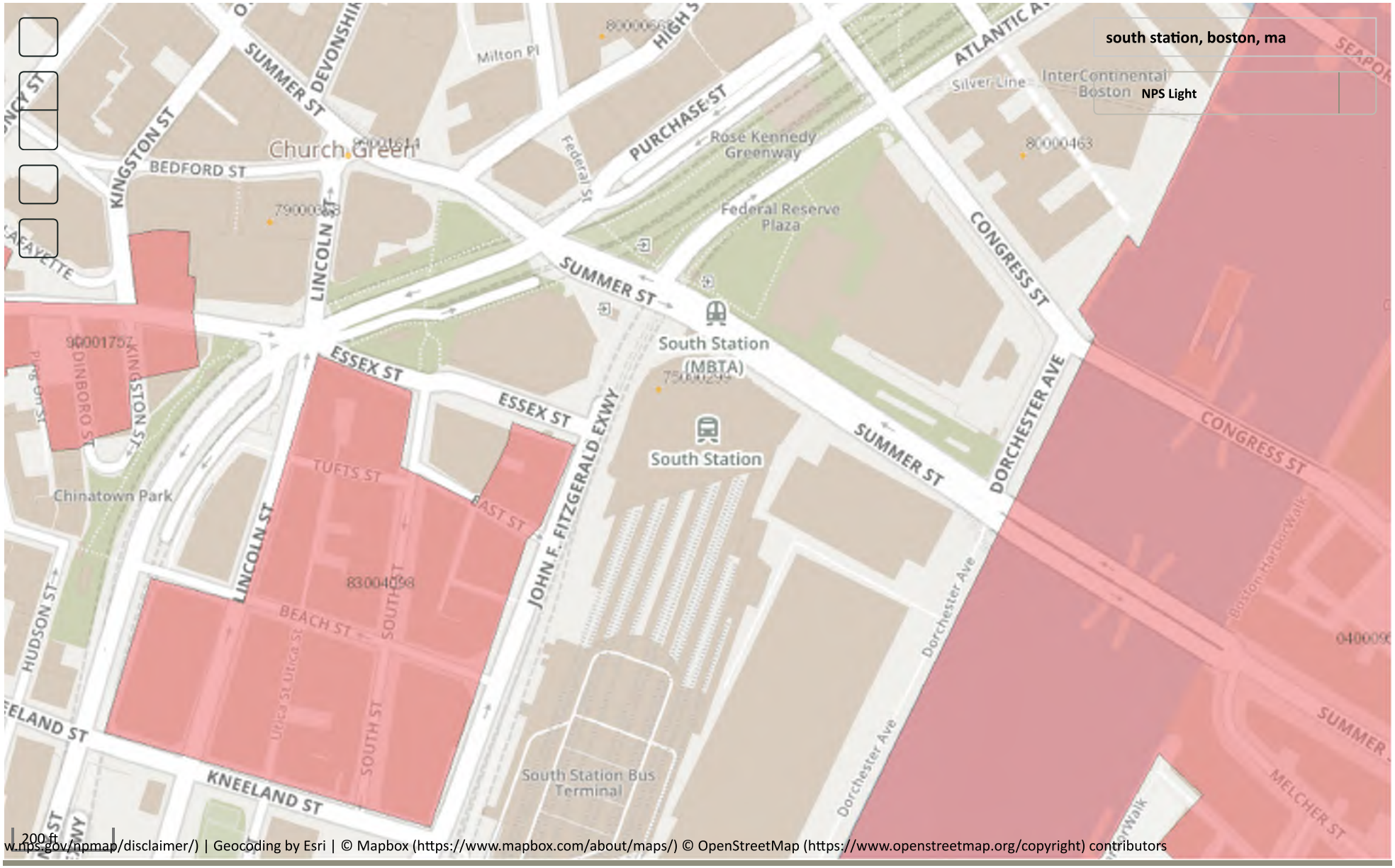
APPENDIX B

National Register of Historic Places and
Massachusetts Historical Commission Documentation

National Register of Historic Places

National Park Service
U.S. Department of the Interior

Public, non-restricted data depicting National Register spatial data processed by the Cultural Resources GIS facility. ...



National Register of Historic Places: Listed Properties
As of July 2015

Note: Not all properties are digitized

Reference Number	State	County	City	Resource Name	Address	Listed Date	Text Click me	Photos Cl;ick me
83000601	MASSACHUSETTS	Suffolk	Boston	Charles Street African Methodist Episcopal Church	551 Warren St.	19830901	Text	Photos
83000602	MASSACHUSETTS	Suffolk	Boston	Codman Square District	Norfolk, Talbot, Epping, Lithgow, Cer	19830623	Text	Photos
83000603	MASSACHUSETTS	Suffolk	Boston	Gardner, Isabella Stewart, Museum	280 The Fenway	19830127	Text	Photos
83000605	MASSACHUSETTS	Suffolk	Boston	Harvard Avenue Fire Station	16 Harvard Ave.	19830331	Text	Photos
83000606	MASSACHUSETTS	Suffolk	Boston	Lawrence Model Lodging Houses	79, 89, 99 and 109 E. Canton St.	19830922	Text	Photos
83000607	MASSACHUSETTS	Suffolk	Boston	Newspaper Row	322-328 Washington St., 5-23 Milk St	19830707	Text	Photos
82000486	MASSACHUSETTS	Suffolk	Boston	Wigglesworth Building	89-83 Franklin St.	19821021	Text	Photos
83004098	MASSACHUSETTS	Suffolk	Boston	Leather District	Roughly bounded by Atlantic Ave., K	19831221	Text	Photos
83004285	MASSACHUSETTS	Suffolk	Boston	Baker, Sarah J., School	33 Perrin St.	19830707	Text	Photos
79000370	MASSACHUSETTS	Suffolk	Boston	Washington Street Theatre District	511-559 Washington St.	19790319	Text	Photos
85000318	MASSACHUSETTS	Suffolk	Boston	Dorchester Pottery Works	101-105 Victory Rd.	19850221	Text	Photos
79000368	MASSACHUSETTS	Suffolk	Boston	Bedford Building	89-103 Bedford St.	19790821	Text	Photos
80000442	MASSACHUSETTS	Suffolk	Boston	Wirth, Jacob, Buildings	31-39 Stuart St.	19801209	Text	Photos
80000445	MASSACHUSETTS	Suffolk	Boston	Metropolitan Theatre	252-272 Tremont St.	19801209	Text	Photos
80000446	MASSACHUSETTS	Suffolk	Boston	Hayden Building	681-683 Washington St.	19801209	Text	Photos
80000448	MASSACHUSETTS	Suffolk	Boston	Dill Building	11-25 Stuart St.	19801209	Text	Photos
80000450	MASSACHUSETTS	Suffolk	Boston	Boylston Building	2-22 Boylston St.	19801209	Text	Photos
80000451	MASSACHUSETTS	Suffolk	Boston	Boston Young Men's Christian Union	48 Boylston St.	19801209	Text	Photos
80000453	MASSACHUSETTS	Suffolk	Boston	Boston Edison Electric Illuminating Company	25-39 Boylston St.	19801209	Text	Photos
80000455	MASSACHUSETTS	Suffolk	Boston	West Street District	West St.	19801209	Text	Photos
80000460	MASSACHUSETTS	Suffolk	Boston	Liberty Tree District	Roughly bounded by Harrison Ave., \	19801209	Text	Photos
80000462	MASSACHUSETTS	Suffolk	Boston	Beach-Knapp District	Roughly bounded by Harrison Ave., \	19801209	Text	Photos
80000465	MASSACHUSETTS	Suffolk	Boston	Oak Square School	35 Nonantum St.	19801110	Text	Photos
66000127	MASSACHUSETTS	Suffolk	Boston	Arnold Arboretum	22 Divinity Ave.	19661015	Text	Photos
73000313	MASSACHUSETTS	Suffolk	Boston	Arlington Street Church	Arlington and Boylston Sts.	19730504	Text	Photos
73000322	MASSACHUSETTS	Suffolk	Boston	Old Corner Bookstore	NW corner of Washington and Schoc	19730411	Text	Photos
75000299	MASSACHUSETTS	Suffolk	Boston	South Station Headhouse	Atlantic Ave. and Summer St.	19750213	Text	Photos
74000392	MASSACHUSETTS	Suffolk	Boston	Winthrop Building	7 Water St.	19740418	Text	Photos
80000668	MASSACHUSETTS	Suffolk	Boston	United Shoe Machinery Corporation Building	138-164 Federal St.	19800819	Text	Photos
75000300	MASSACHUSETTS	Suffolk	Boston	St. Stephen's Church	Hanover St. between Clark and Harri	19750414	Text	Photos
80000669	MASSACHUSETTS	Suffolk	Boston	Union Wharf	295-353 Commercial St.	19800622	Text	Photos
80000670	MASSACHUSETTS	Suffolk	Boston	Suffolk County Jail	215 Charles St.	19800423	Text	Photos
80000674	MASSACHUSETTS	Suffolk	Boston	Garrison, William Lloyd, School	20 Hutchings St.	19800416	Text	Photos
80001683	MASSACHUSETTS	Suffolk	Boston	Dillaway School	16-20 Kenilworth St.	19800409	Text	Photos
66000366	MASSACHUSETTS	Suffolk	Boston	Ether Dome, Massachusetts General Hospital	Fruit St.	19661015	Text	Photos
70000539	MASSACHUSETTS	Suffolk	Boston	Otis, (First) Harrison Gray, House	141 Cambridge St.	19701230	Text	Photos
73000314	MASSACHUSETTS	Suffolk	Boston	Armory of the First Corps of Cadets	97-105 Arlington St. and 130 Columb	19730522	Text	Photos
73000315	MASSACHUSETTS	Suffolk	Boston	Blackstone Block Historic District	Area bound by Union, Hanover, Blac	19730526	Text	Photos
72000145	MASSACHUSETTS	Suffolk	Boston	Crowninshield House	164 Marlborough St.	19720223	Text	Photos
72000146	MASSACHUSETTS	Suffolk	Boston	First Baptist Church	Commonwealth Ave. and Clarendon	19720223	Text	Photos
74000391	MASSACHUSETTS	Suffolk	Boston	John Adams Courthouse	Pemberton Sq.	19740508	Text	Photos
72000150	MASSACHUSETTS	Suffolk	Boston	Trinity Rectory	Clarendon and Newbury Sts.	19720223	Text	Photos
74000385	MASSACHUSETTS	Suffolk	Boston	Copp's Hill Burial Ground	Charter, Snowhill, and Hull Sts.	19740418	Text	Photos
74000393	MASSACHUSETTS	Suffolk	Boston	Youth's Companion Building	209 Columbus Ave.	19740502	Text	Photos
66000764	MASSACHUSETTS	Suffolk	Boston	Harding, Chester, House	16 Beacon St.	19661015	Text	Photos
74002044	MASSACHUSETTS	Suffolk	Boston	Howe, Samuel Gridley and Julia Ward, House	13 Chestnut St.	19740913	Text	Photos
74002045	MASSACHUSETTS	Suffolk	Boston	King's Chapel	Tremont and School Sts.	19740502	Text	Photos
70000682	MASSACHUSETTS	Suffolk	Boston	Massachusetts General Hospital	Fruit Street	19701230	Text	Photos
80000678	MASSACHUSETTS	Suffolk	Boston	All Saints' Church	211 Ashmont St.	19800616	Text	Photos
81000620	MASSACHUSETTS	Suffolk	Boston	Fields Corner Municipal Building	1 Arcadia St., 195 Adams St.	19811112	Text	Photos
66000770	MASSACHUSETTS	Suffolk	Boston	Massachusetts Historical Society Building	1154 Boylston St.	19661015	Text	Photos
66000771	MASSACHUSETTS	Suffolk	Boston	Massachusetts Statehouse	Beacon Hill	19661015	Text	Photos
76001979	MASSACHUSETTS	Suffolk	Boston	Nell, William C., House	3 Smith Ct.	19760511	Text	Photos
70000687	MASSACHUSETTS	Suffolk	Boston	Old City Hall	School and Providence Sts.	19701230	Text	Photos
70000690	MASSACHUSETTS	Suffolk	Boston	Old South Church in Boston	645 Boylston St.	19701230	Text	Photos
70000691	MASSACHUSETTS	Suffolk	Boston	Old West Church	131 Cambridge St.	19701230	Text	Photos
66000782	MASSACHUSETTS	Suffolk	Boston	Parkman, Francis, House	50 Chestnut St.	19661015	Text	Photos
80000444	MASSACHUSETTS	Suffolk	Boston	Shubert, Sam S., Theatre	263-265 Tremont St.	19801209	Text	Photos
80000458	MASSACHUSETTS	Suffolk	Boston	Piano Row District	Boston Common, Park Sq., Boylston	19801209	Text	Photos
80000443	MASSACHUSETTS	Suffolk	Boston	Wilbur Theatre	244-250 Tremont St.	19801209	Text	Photos
66000765	MASSACHUSETTS	Suffolk	Boston	Headquarters House	55 Beacon St.	19661015	Text	Photos
68000042	MASSACHUSETTS	Suffolk	Boston	Pierce-Hichborn House	29 North Sq.	19681124	Text	Photos
66000784	MASSACHUSETTS	Suffolk	Boston	Quincy Market	S. Market St.	19661113	Text	Photos

70000730	MASSACHUSETTS	Suffolk	Boston	St. Paul's Church	136 Tremont St.	19701230	Text	Photos
70000731	MASSACHUSETTS	Suffolk	Boston	Sears, David, House	42 Beacon St.	19701230	Text	Photos
73001953	MASSACHUSETTS	Suffolk	Boston	Sumner, Charles, House	20 Hancock St.	19731107	Text	Photos
66000130	MASSACHUSETTS	Suffolk	Boston	Beacon Hill Historic District	Bounded by Beacon St., the Charles I	19661015	Text	Photos
73001955	MASSACHUSETTS	Suffolk	Boston	Otis, (Second) Harrison Gray, House	85 Mt. Vernon St.	19730727	Text	Photos
66000768	MASSACHUSETTS	Suffolk	Boston	Long Wharf and Customhouse Block	Foot of State St.	19661113	Text	Photos
66000132	MASSACHUSETTS	Suffolk	Boston	Boston Athenaeum	10 1/2 Beacon St.	19661015	Text	Photos
66000788	MASSACHUSETTS	Suffolk	Boston	Tremont Street Subway	Beneath Tremont, Boylston, and Wa	19661015	Text	Photos
70000733	MASSACHUSETTS	Suffolk	Boston	Trinity Church	Copley Sq.	19700701	Text	Photos
82004456	MASSACHUSETTS	Suffolk	Boston	Adams-Nervine Asylum	990-1020 Centre St.	19820601	Text	Photos
79000369	MASSACHUSETTS	Suffolk	Boston	International Trust Company Building	39-47 Milk St.	19790910	Text	Photos
74000388	MASSACHUSETTS	Suffolk	Boston	Eliot Burying Ground	Eustis and Washington Sts.	19740625	Text	Photos
80000463	MASSACHUSETTS	Suffolk	Boston	Russia Wharf Buildings	518-540 Atlantic Ave., 270 Congress	19801202	Text	Photos
71000087	MASSACHUSETTS	Suffolk	Boston	African Meetinghouse	8 Smith St.	19711007	Text	Photos
85002015	MASSACHUSETTS	Suffolk	Boston	Building at 138--142 Portland Street	138--142 Portland St.	19850905	Text	Photos
84000421	MASSACHUSETTS	Suffolk	Boston	Vermont Building	6-12 Thacher St.	19841113	Text	Photos
75000301	MASSACHUSETTS	Suffolk	Boston	Symphony and Horticultural Halls	Massachusetts and Huntington Aves	19750530	Text	Photos
73000324	MASSACHUSETTS	Suffolk	Boston	South End District	South Bay area between Huntington	19730508	Text	Photos
74000390	MASSACHUSETTS	Suffolk	Boston	Park Street District	Tremont, Park, and Beacon Sts.	19740501	Text	Photos
73000319	MASSACHUSETTS	Suffolk	Boston	Fulton-Commercial Streets District	Fulton, Commercial, Mercantile, Lew	19730321	Text	Photos
84002875	MASSACHUSETTS	Suffolk	Boston	Fenway-Boylston Street District	Fenway, Boylston, Westland, and He	19840904	Text	Photos
78000473	MASSACHUSETTS	Suffolk	Boston	Fenway Studios	30 Ipswich St.	19780913	Text	Photos
73000318	MASSACHUSETTS	Suffolk	Boston	Cyclorama Building	543-547 Tremont St.	19730413	Text	Photos
83004097	MASSACHUSETTS	Suffolk	Boston	Codman Building	55 Kilby St.	19831019	Text	Photos
80000676	MASSACHUSETTS	Suffolk	Boston	Charles Playhouse	74-78 Warenton St.	19800616	Text	Photos
74000382	MASSACHUSETTS	Suffolk	Boston	Ames Building	1 Court St.	19740426	Text	Photos
77001541	MASSACHUSETTS	Suffolk	Boston	Appleton, Nathan, Residence	39-40 Beacon St.	19771222	Text	Photos
66000134	MASSACHUSETTS	Suffolk	Boston	Boston Naval Shipyard	E of Chelsea St., Charlestown	19661115	Text	Photos
66000050	MASSACHUSETTS	Suffolk	Boston	Dorchester Heights National Historic Site	South Boston	19661015	Text	Photos
74002222	MASSACHUSETTS	Suffolk	Boston	Boston National Historical Park	Inner harbor at mouth of Charles Riv	19741026	Text	Photos
66000785	MASSACHUSETTS	Suffolk	Boston	Revere, Paul, House	19 North Sq.	19661015	Text	Photos
66000776	MASSACHUSETTS	Suffolk	Boston	Old North Church	193 Salem St.	19661015	Text	Photos
66000778	MASSACHUSETTS	Suffolk	Boston	Old South Meetinghouse	Milk and Washington Sts.	19661015	Text	Photos
66000368	MASSACHUSETTS	Suffolk	Boston	Faneuil Hall	Dock Sq.	19661015	Text	Photos
66000779	MASSACHUSETTS	Suffolk	Boston	Old State House	Washington and State Sts.	19661015	Text	Photos
85003074	MASSACHUSETTS	Suffolk	Boston	Dudley Station Historic District	Washington, Warren, and Dudley Sts	19851205	Text	Photos
86000140	MASSACHUSETTS	Suffolk	Boston	Christ Church	1220 River Rd.	19860130	Text	Photos
73000317	MASSACHUSETTS	Suffolk	Boston	Boston Public Library	Copley Sq.	19730506	Text	Photos
86001909	MASSACHUSETTS	Suffolk	Boston	Filene's Department Store	426 Washington St.	19860724	Text	Photos
86001913	MASSACHUSETTS	Suffolk	Boston	Second Brazer Building	25--29 State St.	19860724	Text	Photos
86001486	MASSACHUSETTS	Suffolk	Boston	Sears' Crescent and Sears' Block	38--68 and 70--72 Cornhill	19860809	Text	Photos
86001504	MASSACHUSETTS	Suffolk	Boston	Richardson Block	113--151 Pearl and 109--119 High Sts	19860809	Text	Photos
85003375	MASSACHUSETTS	Suffolk	Boston	Engine House No. 34	444 Western Ave.	19851024	Text	Photos
80000671	MASSACHUSETTS	Suffolk	Boston	Stearns, R. H., House	140 Tremont St.	19800616	Text	Photos
86001911	MASSACHUSETTS	Suffolk	Boston	Locke--Ober Restaurant	3--4 Winter Pl.	19860724	Text	Photos
80000677	MASSACHUSETTS	Suffolk	Boston	Berger Factory	37 Williams St.	19800409	Text	Photos
85000316	MASSACHUSETTS	Suffolk	Boston	Bigelow School	350 W. 4th St.	19850221	Text	Photos
84002890	MASSACHUSETTS	Suffolk	Boston	Moreland Street Historic District	Roughly bounded by Kearsarge, Blue	19840329	Text	Photos
70000921	MASSACHUSETTS	Suffolk	Boston	Fort Independence	Castle Island	19701015	Text	Photos
86000375	MASSACHUSETTS	Suffolk	Boston	Harriswood Crescent	60--88 Harold St.	19860313	Text	Photos
66000789	MASSACHUSETTS	Suffolk	Boston	U.S.S. CONSTITUTION	Boston Naval Shipyard	19661015	Text	Photos
87000757	MASSACHUSETTS	Suffolk	Boston	Harvard Stadium	60 N. Harvard St.	19870227	Text	Photos
72000144	MASSACHUSETTS	Suffolk	Boston	Boston Common and Public Garden	Beacon, Park, Tremont, Boylston, an	19720712	Text	Photos
87000760	MASSACHUSETTS	Suffolk	Boston	Boston Common	Beacon, Park, Tremont, Boylston, an	19870227	Text	Photos
87000761	MASSACHUSETTS	Suffolk	Boston	Boston Public Garden	Beacon, Charles, Boylston, and Arling	19870227	Text	Photos
87001128	MASSACHUSETTS	Suffolk	Boston	Monument Square Historic District	Monument Sq.	19870602	Text	Photos
66000138	MASSACHUSETTS	Suffolk	Boston	Bunker Hill Monument	Breed's Hill	19661015	Text	Photos
86000274	MASSACHUSETTS	Suffolk	Boston	Bulfinch Triangle Historic District	Roughly bounded by Canal, Market,	19860227	Text	Photos
80000675	MASSACHUSETTS	Suffolk	Boston	Dorchester-Milton Lower Mills Industrial District	Both sides of Neponset River	19800402	Text	Photos
86000084	MASSACHUSETTS	Suffolk	Boston	USS CASSIN YOUNG (destroyer)	Charlestown Navy Yard	19860114	Text	Photos
66000133	MASSACHUSETTS	Suffolk	Boston	Boston Light	Little Brewster Island, Boston Harbo	19661015	Text	Photos
87001481	MASSACHUSETTS	Suffolk	Boston	Long Island Head Light	Long Island	19870615	Text	Photos
87001394	MASSACHUSETTS	Suffolk	Boston	New Riding Club	52 Hemenway St.	19870820	Text	Photos
87001396	MASSACHUSETTS	Suffolk	Boston	Congress Street Fire Station	344 Congress St.	19870903	Text	Photos
87000885	MASSACHUSETTS	Suffolk	Boston	Abbotsford	300 Walnut Ave.	19870916	Text	Photos
87001889	MASSACHUSETTS	Suffolk	Boston	Sumner Hill Historic District	Roughly bounded by Seaverns Ave.,	19871022	Text	Photos
87001771	MASSACHUSETTS	Suffolk	Boston	Bunker Hill School	65 Baldwin St.	19871015	Text	Photos
87001398	MASSACHUSETTS	Suffolk	Boston	House at 17 Cranston Street	17 Cranston St.	19871120	Text	Photos
87001399	MASSACHUSETTS	Suffolk	Boston	Hoxie, Timothy, House	135 Hillside St.	19871120	Text	Photos
87001495	MASSACHUSETTS	Suffolk	Boston	Saint Augustine Chapel and Cemetery	Dorchester St. between W. Sixth and	19870918	Text	Photos

87002549	MASSACHUSETTS	Suffolk	Boston	District 13 Police Station	28 Seaverns Ave.	19880210	Text	Photos
85003323	MASSACHUSETTS	Suffolk	Boston	Boston Harbor Islands Archeological District	Address Restricted	19851221	Text	Photos
82004448	MASSACHUSETTS	Suffolk	Boston	Roughan Hall	15-18 City Sq.	19820415	Text	Photos
82004450	MASSACHUSETTS	Suffolk	Boston	McKay, Donald, House	78-80 White St.	19820602	Text	Photos
82004453	MASSACHUSETTS	Suffolk	Boston	Haffenreffer Brewery	Germania St.	19820502	Text	Photos
73000850	MASSACHUSETTS	Suffolk	Boston	Town Hill District	Bounded roughly by Rutherford Ave.	19730511	Text	Photos
74000907	MASSACHUSETTS	Suffolk	Boston	Phipps Street Burying Ground	Phipps St.	19740514	Text	Photos
74000911	MASSACHUSETTS	Suffolk	Boston	Clapp Houses	199 and 195 Boston St.	19740502	Text	Photos
74000915	MASSACHUSETTS	Suffolk	Boston	Dorchester North Burying Ground	Stroughton St. and Columbia Rd.	19740418	Text	Photos
80004396	MASSACHUSETTS	Suffolk	Boston	Boston African American National Historic Site	Museum of Afro American History, I	19801010	Text	Photos
66000141	MASSACHUSETTS	Suffolk	Boston	Brook Farm	670 Baker St.	19661015	Text	Photos
73000856	MASSACHUSETTS	Suffolk	Boston	Roxbury High Fort	Beech Glen St. at Fort Ave.	19730423	Text	Photos
73000855	MASSACHUSETTS	Suffolk	Boston	Kittredge, Alvah, House	12 Linwood St.	19730508	Text	Photos
73000854	MASSACHUSETTS	Suffolk	Boston	John Eliot Square District	John Eliot Sq.	19730423	Text	Photos
66000653	MASSACHUSETTS	Suffolk	Boston	Garrison, William Lloyd, House	125 Highland St.	19661015	Text	Photos
72000544	MASSACHUSETTS	Suffolk	Boston	Loring-Greenough House	12 South St.	19720426	Text	Photos
74000917	MASSACHUSETTS	Suffolk	Boston	Pierce House	24 Oakton Ave.	19740426	Text	Photos
70000540	MASSACHUSETTS	Suffolk	Boston	Fort Warren	Georges Island, Boston Harbor	19700829	Text	Photos
74002350	MASSACHUSETTS	Suffolk	Boston	Blake, James, House	735 Columbia Rd.	19740501	Text	Photos
83000604	MASSACHUSETTS	Suffolk	Boston	Loring, Harrison, House	789 E. Broadway St.	19830901	Text	Photos
88000908	MASSACHUSETTS	Suffolk	Boston	Goodwin, Ozias, House	7 Jackson Ave.	19880623	Text	Photos
88000957	MASSACHUSETTS	Suffolk	Boston	Greek Orthodox Cathedral of New England	520 Parker St.	19880630	Text	Photos
88000427	MASSACHUSETTS	Suffolk	Boston	Temple Place Historic District	11--55, 26--58 Temple Pl.	19880726	Text	Photos
88000959	MASSACHUSETTS	Suffolk	Boston	Eliot Hall	7A Eliot St.	19880715	Text	Photos
87001478	MASSACHUSETTS	Suffolk	Boston	Austin, Francis B., House	58 High St.	19881021	Text	Photos
89000004	MASSACHUSETTS	Suffolk	Boston	Mount Pleasant Historic District	Roughly bounded by Forest St. and M	19890209	Text	Photos
89000147	MASSACHUSETTS	Suffolk	Boston	Roxbury Highlands Historic District	Roughly bounded by Dudley St., Was	19890222	Text	Photos
73000325	MASSACHUSETTS	Suffolk	Boston	Hale, Edward Everett, House	12 Morley St.	19790321	Text	Photos
83004099	MASSACHUSETTS	Suffolk	Boston	LUNA (tugboat)	NDC Pier, Charles River	19831006	Text	Photos
89000974	MASSACHUSETTS	Suffolk	Boston	Massachusetts School of Art	364 Brookline Ave.	19890803	Text	Photos
89001747	MASSACHUSETTS	Suffolk	Boston	Mission Hill Triangle Historic District	Roughly bounded by Smith St., Wort	19891106	Text	Photos
89002169	MASSACHUSETTS	Suffolk	Boston	St. Joseph's Roman Catholic Church Complex	Bounded by Circuit, Regent, Hulbert,	19891228	Text	Photos
89002251	MASSACHUSETTS	Suffolk	Boston	Bellevue Standpipe	On Bellevue Hill at Washington St. ar	19900118	Text	Photos
88000955	MASSACHUSETTS	Suffolk	Boston	First Church of Jamaica Plain	6 Eliot St.	19880715	Text	Photos
90000631	MASSACHUSETTS	Suffolk	Boston	Copp's Hill Terrace	Between Commercial and Charter St	19900419	Text	Photos
89002271	MASSACHUSETTS	Suffolk	Boston	Chestnut Hill Reservoir Historic District	Beacon St. and Commonwealth Ave.	19900118	Text	Photos
90001095	MASSACHUSETTS	Suffolk	Boston	Calf Pasture Pumping Station Complex	435 Mount Vernon St.	19900802	Text	Photos
90001145	MASSACHUSETTS	Suffolk	Boston	Bowditch School	80--82 Greene St.	19900803	Text	Photos
90001536	MASSACHUSETTS	Suffolk	Boston	Monument Square Historic District	Roughly bounded by Jamaicaway, Pc	19901011	Text	Photos
90001537	MASSACHUSETTS	Suffolk	Boston	Upham's Corner Market	600 Columbia Rd.	19901011	Text	Photos
89002125	MASSACHUSETTS	Suffolk	Boston	Roxbury Presbyterian Church	328 Warren St.	19910315	Text	Photos
90001992	MASSACHUSETTS	Suffolk	Boston	Sears Roebuck and Company Mail Order Store	309 Park Dr. and 201 Brookline Ave.	19910115	Text	Photos
92000356	MASSACHUSETTS	Suffolk	Boston	Trinity Neighborhood House	406 Meridian St.	19920414	Text	Photos
73001948	MASSACHUSETTS	Suffolk	Boston	Back Bay Historic District	Roughly bounded by the Charles Rive	19730814	Text	Photos
90001757	MASSACHUSETTS	Suffolk	Boston	Textile District	Roughly, Essex St. from Phillips Sq. to	19901129	Text	Photos
93001489	MASSACHUSETTS	Suffolk	Boston	Massachusetts Mental Health Center	74 Fenwood Rd.	19940121	Text	Photos
93001573	MASSACHUSETTS	Suffolk	Boston	House at 1 Bay Street	1 Bay St.	19940209	Text	Photos
93001587	MASSACHUSETTS	Suffolk	Boston	Eliot Congregational Church	56 Dale St., corner 118--120 Walnut S	19940209	Text	Photos
85000317	MASSACHUSETTS	Suffolk	Boston	Dimock Community Health Center Complex	41 and 55 Dimock St.	19850221	Text	Photos
80000672	MASSACHUSETTS	Suffolk	Boston	New England Conservatory of Music	290 Huntington Ave.	19800514	Text	Photos
94001494	MASSACHUSETTS	Suffolk	Boston	Lower Roxbury Historic District	Roughly, area surrounding Coventry,	19941209	Text	Photos
94001492	MASSACHUSETTS	Suffolk	Boston	Faneuil, Peter, School	60 Joy St.	19941216	Text	Photos
95001450	MASSACHUSETTS	Suffolk	Boston	Riviera, The	270 Huntington Ave.	19951207	Text	Photos
73000321	MASSACHUSETTS	Suffolk	Boston	Custom House District	Between J.F.K. Expwy. and Kirby St. a	19730511	Text	Photos
96001063	MASSACHUSETTS	Suffolk	Boston	Douglass, Frederick, Square Historic District	Roughly bounded by Hammond St., (	19961003	Text	Photos
97000969	MASSACHUSETTS	Suffolk	Boston	Charlestown Heights	Roughly bounded by St. Martin, Bunl	19980108	Text	Photos
97000920	MASSACHUSETTS	Suffolk	Boston	Brighton Evangelical Congregational Church	404-410 Washington St.	19970821	Text	Photos
97000970	MASSACHUSETTS	Suffolk	Boston	Students House	96 The Fenway	19970911	Text	Photos
97000971	MASSACHUSETTS	Suffolk	Boston	North Terminal Garage	600 Commercial St.	19970911	Text	Photos
97001239	MASSACHUSETTS	Suffolk	Boston	Dorchester Temple Baptist Church	670 Washington St.	19980116	Text	Photos
97001377	MASSACHUSETTS	Suffolk	Boston	Allston Congregational Church	31-41 Quint Ave.	19971107	Text	Photos
97001472	MASSACHUSETTS	Suffolk	Boston	St. Luke's and St. Margaret's Church	5-7 St. Luke's Rd.	19971112	Text	Photos
98000149	MASSACHUSETTS	Suffolk	Boston	Eagle Hill Historic District	Roughly bounded by Border, Lexingt	19980226	Text	Photos
98001082	MASSACHUSETTS	Suffolk	Boston	Boston Young Men's Christian Association	312-320 Huntington Ave.	19980820	Text	Photos
97001278	MASSACHUSETTS	Suffolk	Boston	ROSEWAY (schooner)	Boston Harbor	19970925	Text	Photos
98001292	MASSACHUSETTS	Suffolk	Boston	St. Mary's Episcopal Church	14-16 Cushing Ave.	19981030	Text	Photos
98001330	MASSACHUSETTS	Suffolk	Boston	Roslindale Baptist Church	52 Cummins Hwy.	19981105	Text	Photos
98001361	MASSACHUSETTS	Suffolk	Boston	Cathedral of St. George Historic District	517-523-525 E. Broadway	19981125	Text	Photos
98001381	MASSACHUSETTS	Suffolk	Boston	Baker Congregational Church	760 Saratoga St.	19981119	Text	Photos
99000593	MASSACHUSETTS	Suffolk	Boston	Woodbourne Historic District	Roughly bounded by Walk Hill, Good	19990604	Text	Photos

99000633	MASSACHUSETTS	Suffolk	Boston	Symphony Hall	301 Massachusetts Avenue	19990120	Text	Photos
99001302	MASSACHUSETTS	Suffolk	Boston	Mariner's House	11 North Square	19991112	Text	Photos
99001304	MASSACHUSETTS	Suffolk	Boston	Congregation Adath Jeshurun	397 Blue Hill Ave.	19991112	Text	Photos
99001308	MASSACHUSETTS	Suffolk	Boston	First Congregational Church of Hyde Park	6 Webster St.	19991112	Text	Photos
99001614	MASSACHUSETTS	Suffolk	Boston	Church Green Buildings Historic District	101-113 Summer St.	19991230	Text	Photos
00000160	MASSACHUSETTS	Suffolk	Boston	Fulton-Commercial Streets Historic District (Boundary Incre	81-95 Richmond St.	20000303	Text	Photos
00000415	MASSACHUSETTS	Suffolk	Boston	Harvard Avenue Historic District	Roughly bounded by Linden St., Com	20000428	Text	Photos
00000871	MASSACHUSETTS	Suffolk	Boston	Dearborn School	25 Ambrose St.	20000802	Text	Photos
01000088	MASSACHUSETTS	Suffolk	Boston	Brighton Center Historic District	Academy Hill R., Chestnut Hill Ave., D	20010220	Text	Photos
01000872	MASSACHUSETTS	Suffolk	Boston	Peabody, The	195-197 Ashmont St.	20010808	Text	Photos
01001048	MASSACHUSETTS	Suffolk	Boston	Gibson House	137 Beacon St.	20010807	Text	Photos
01001557	MASSACHUSETTS	Suffolk	Boston	Boston Consumptives Hospital	249 River St.	20020207	Text	Photos
02000081	MASSACHUSETTS	Suffolk	Boston	Frances and Isabella Apartments	430-432 and 434-436 Dudley St.	20020222	Text	Photos
02000154	MASSACHUSETTS	Suffolk	Boston	Greenwood Memorial United Methodist Church	378A-380 Washington St.	20020308	Text	Photos
02000548	MASSACHUSETTS	Suffolk	Boston	Bennington Street Burying Ground	Bennington St., bet. Swift and harmo	20020522	Text	Photos
02001039	MASSACHUSETTS	Suffolk	Boston	Paine Furniture Building	75-81 Arlington St.	20020912	Text	Photos
02001190	MASSACHUSETTS	Suffolk	Boston	Harrison Square Historic District	Bounded by MBTA Braintree line em	20021022	Text	Photos
03000385	MASSACHUSETTS	Suffolk	Boston	Savin Hill Historic District	Roughly bounded by Savin Hill Ave.,	20030509	Text	Photos
03000645	MASSACHUSETTS	Suffolk	Boston	Union Oyster House	41-43 Union Street	20030527	Text	Photos
03000781	MASSACHUSETTS	Suffolk	Boston	Publicity Building	40-44 Bromfield St.	20030820	Text	Photos
04000023	MASSACHUSETTS	Suffolk	Boston	Benedict Fenwick School	150 Magnolia St.	20040211	Text	Photos
04000085	MASSACHUSETTS	Suffolk	Boston	Haskell, Edward H., Home for Nurses	220 Fisther Ave., 63 Parker Hill Ave.	20040226	Text	Photos
04000119	MASSACHUSETTS	Suffolk	Boston	YWCA Boston	140 Clarendon St.	20040303	Text	Photos
04000189	MASSACHUSETTS	Suffolk	Boston	Nix's Mate Daybeacon	Nubble Channel, The Narrows, Bosto	20040318	Text	Photos
04000426	MASSACHUSETTS	Suffolk	Boston	Nazing Court Apartments	224-236 Seaver St. and 1-8 Nazing Co	20040512	Text	Photos
04000534	MASSACHUSETTS	Suffolk	Boston	Hibernian Hall	182-186 Dudley St.	20040602	Text	Photos
04000959	MASSACHUSETTS	Suffolk	Boston	Fort Point Channel Historic District	Necco Court, Thomson Place, A, Binfo	20040910	Text	Photos
04001219	MASSACHUSETTS	Suffolk	Boston	Forest Hills Cemetery	95 Forest Hills Ave.	20041117	Text	Photos
04001430	MASSACHUSETTS	Suffolk	Boston	Truman Parkway--Metropolitan Park System of Greater Bos	Truman Parkway	20050105	Text	Photos
04001432	MASSACHUSETTS	Suffolk	Boston	VFW Parkway, Metropolitan Park System of Greater Bostor	VFW Parkway, bet. Spring And Centr	20050105	Text	Photos
04001572	MASSACHUSETTS	Suffolk	Boston	Morton Street, Metropolitan Park System of Greater Bosto	Morton St.	20050124	Text	Photos
04001573	MASSACHUSETTS	Suffolk	Boston	Neponset Valley Parkway, Metorpolitan Park System of Gre	Neponset Valley Parkway	20050124	Text	Photos
05000459	MASSACHUSETTS	Suffolk	Boston	Ayer, Frederick, Mansion	395 Commonwealth Avenue	20050405	Text	Photos
05000559	MASSACHUSETTS	Suffolk	Boston	Collins Building	213-217 Washington St.	20050608	Text	Photos
05000879	MASSACHUSETTS	Suffolk	Boston	Home for Aged Couples	409, 419 Walnut Ave. and 2055 Colu	20050811	Text	Photos
05000936	MASSACHUSETTS	Suffolk	Boston	South Boston Boat Clubs Historic District	1793-1849 William J. Day Blvd.	20050901	Text	Photos
05001509	MASSACHUSETTS	Suffolk	Boston	Stony Brook Reservation Parkways, Metropolitan Park Syst	Dedham, Enneking, Turtle Pond Park	20060103	Text	Photos
06000127	MASSACHUSETTS	Suffolk	Boston	East Boston High School, Old	127 Marion St.	20060315	Text	Photos
01000304	MASSACHUSETTS	Suffolk	Boston	Dorchester--Milton Lower Mills Industrial District (Boundar	Roughly: Adams, River, Medway Sts.,	20010406	Text	Photos
07000510	MASSACHUSETTS	Suffolk	Boston	Goldsmith Block	41 Ruggles St., 746-750 Shawmut Ave	20070605	Text	Photos
07000861	MASSACHUSETTS	Suffolk	Boston	Boston Transit Commission Building	15 Beacon St.	20070831	Text	Photos
08000089	MASSACHUSETTS	Suffolk	Boston	Dorchester Park	Bounded by Dorchester Ave., Richmo	20080220	Text	Photos
08000693	MASSACHUSETTS	Suffolk	Boston	Old Harbor Reservation Parkways, Metropolitan Park Syste	William J. Day Blvd., Columbia Rd. be	20080724	Text	Photos
08000793	MASSACHUSETTS	Suffolk	Boston	Joshua Bates School	731 Harrison Ave.	20080822	Text	Photos
08000795	MASSACHUSETTS	Suffolk	Boston	Ohabei Shalom Cemetery	147 Wordsworth St.	20080819	Text	Photos
08001284	MASSACHUSETTS	Suffolk	Boston	Compton Building	159, 161-175 Devonshire St., 18-20 A	20081231	Text	Photos
09000612	MASSACHUSETTS	Suffolk	Boston	Evergreen Cemetery	2060 Commonwealth Ave.	20090814	Text	Photos
09000717	MASSACHUSETTS	Suffolk	Boston	Fairview Cemetery	45 Fairview Ave.	20090916	Text	Photos
09000767	MASSACHUSETTS	Suffolk	Boston	Mount Hope Cemetery	355 Walk Hill St.	20090924	Text	Photos
10000039	MASSACHUSETTS	Suffolk	Boston	EDNA G. shipwreck (Eastern Rig dragger)	Address Restricted	20101122	Text	Photos
10000300	MASSACHUSETTS	Suffolk	Boston	Highland Spring Brewery Bottling and Storage Buildings	154-166 Terrace St	20100528	Text	Photos
10000391	MASSACHUSETTS	Suffolk	Boston	Second Church in Boston	874, 876, 880 Beacon St	20100624	Text	Photos
10000506	MASSACHUSETTS	Suffolk	Boston	Charles River Reservation (Speedway)--Upper Basin Headq	1420-1440 Soldiers Field Rd	20100719	Text	Photos
10001066	MASSACHUSETTS	Suffolk	Boston	Egleston Substation	3025 Washington St	20101227	Text	Photos
11000160	MASSACHUSETTS	Suffolk	Boston	United State Post Office, Courthouse, and Federal Building	5 Post Office Square	20110408	Text	Photos
12000069	MASSACHUSETTS	Suffolk	Boston	Fenway Park	24, & 2-4 Yawkey Wy., 64-76 Brookli	20120307	Text	Photos
12000099	MASSACHUSETTS	Suffolk	Boston	Terminal Storage Warehouse District	267-281 Medford St., 40 & 50 Termir	20120312	Text	Photos
12000783	MASSACHUSETTS	Suffolk	Boston	Saint Mark's Episcopal Church	73 Columbia Rd.	20140703	Text	Photos
12000978	MASSACHUSETTS	Suffolk	Boston	Sherman Apartments Historic District	544-546 Washington, 4-6, 12-14, 18 I	20121128	Text	Photos
12001012	MASSACHUSETTS	Suffolk	Boston	Central Congregational Church	67 Newbury St.	20121016	Text	Photos
12001162	MASSACHUSETTS	Suffolk	Boston	Commonwealth Pier Five	165 Northern Ave.	19791010	Text	Photos
13000621	MASSACHUSETTS	Suffolk	Boston	Roslindale Substation	4228 Washington St.	20130827	Text	Photos
13000928	MASSACHUSETTS	Suffolk	Boston	Davidson, Sarah, Apartment Block	3 Gaylord St.	20131218	Text	Photos
13000929	MASSACHUSETTS	Suffolk	Boston	Pilgrim Congregational Church	540-544 Columbia Rd.	20131218	Text	Photos
13000930	MASSACHUSETTS	Suffolk	Boston	Walton and Roslin Halls	702-708 & 710-726 Washington St., 3	20131218	Text	Photos
14000272	MASSACHUSETTS	Suffolk	Boston	Blake and Amory Building	59 Temple Pl.	20140602	Text	Photos
14000365	MASSACHUSETTS	Suffolk	Boston	Dorchester South Burying Ground	2095 Dorchester Ave.	20140627	Text	Photos
14000561	MASSACHUSETTS	Suffolk	Boston	Buildings at 825--829 Blue Hill Avenue	825-829 Blue Hill Ave.	20140910	Text	Photos
14000698	MASSACHUSETTS	Suffolk	Boston	Almont Apartments	1439-1443 & 1447-1451 Blue Hill Ave	20140922	Text	Photos
14000974	MASSACHUSETTS	Suffolk	Boston	Gridley Street Historic District	Bounded by Congress, High, Pearl &	20141203	Text	Photos

14000975	MASSACHUSETTS	Suffolk	Boston	Lyman, Theodore, School	30 Gove St.	20141202	Text	Photos
14001095	MASSACHUSETTS	Suffolk	Boston	South End District (Boundary Increase)	200-224 Northampton St.	20141229	Text	Photos
15000048	MASSACHUSETTS	Suffolk	Boston	Boston Police Station Number One--Traffic Tunnel Adminis	128, 150 North & 130 -140 Richmonc	20150303	Text	Photos
15000195	MASSACHUSETTS	Suffolk	Boston	Boston National Historical Park	Charlestown Navy Yard	20150505	Text	Photos
86001378	MASSACHUSETTS	Suffolk	South Bosto	US Post Office Garage	135 A St.	19860626	Text	Photos

Massachusetts Historical Commission

William Francis Galvin, Secretary of the Commonwealth

Massachusetts Cultural Resource Information System

MACRIS

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The Massachusetts Cultural Resource Information System (MACRIS) allows you to search the Massachusetts Historical Commission database for information on historic properties and areas in the Commonwealth.

Users of the database should keep in mind that it does not include information on all historic properties and areas in Massachusetts, nor does it reflect all the information on file on historic properties and areas at the Massachusetts Historical Commission.

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MACRIS

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Inventory No:	BOS.1517 INV NR
Historic Name:	South Station Head House
Common Name:	South Union Terminal
Address:	620-690 Atlantic Ave 195-245 Summer St
City/Town:	Boston
Village/Neighborhood:	Central Business District; Wholesale
Local No:	
Year Constructed:	1898
Architect(s):	Howard, Edward Clock Company; Norcross Brothers; Shepley, Rutan and Coolidge; Worcester, J. R. and Company
Architectural Style(s):	Classical Revival
Use(s):	Business Office; Rail Station; Restaurant; Bus Terminal; Parking Garage
Significance:	Architecture; Commerce; Transportation
Area(s):	
Designation(s):	Nat'l Register Individual Property (02/13/1975)
Building Material(s):	Wall: Brick; Granite; Stone, Cut

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MACRIS

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Inventory No:	BOS.9003
Historic Name:	South Station Waiting Room
Common Name:	
Address:	620-690 Atlantic Ave
City/Town:	Boston
Village/Neighborhood:	Central Business District; Wholesale
Local No:	NRIND
Year Constructed:	
Architect(s):	
Architectural Style(s):	
Use(s):	Other Rail Related
Significance:	Transportation
Area(s):	
Designation(s):	Nat'l Register Individual Property (02/13/1975); Nat'l Register DOE (12/21/1979)
Building Material(s):	

Digital Photo Not Yet Available

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Massachusetts Cultural Resource Information System
MACRIS

MHC Home | MACRIS Home

For more information about this page and how to use it, click here.

Inventory No:	BOS.915 INV
Historic Name:	South Station Interlocking System - Tower 1
Common Name:	
Address:	Atlantic Ave
	Summer St
City/Town:	Boston
Village/Neighborhood:	Central Business District; Wholesale
Local No:	
Year Constructed:	1899
Architect(s):	
Architectural Style(s):	
Use(s):	Other Rail Related
Significance:	Engineering; Transportation
Area(s):	
Designation(s):	Nat'l Register DOE (12/21/1979)
Building Material(s):	

DEMOLISHED

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APPENDIX C

Endangered Species Act Documentation

United States Department of the Interior

FISH AND WILDLIFE SERVICE

New England Field Office
70 Commercial Street, Suite 300
Concord, NH 03301-5087
http://www.fws.gov/newengland

January 20, 2017

To Whom It May Concern:

This project was reviewed for the presence of federally listed or proposed, threatened or endangered species or critical habitat per instructions provided on the U.S. Fish and Wildlife Service's New England Field Office website:

http://www.fws.gov/newengland/EndangeredSpec-Consultation.htm (accessed January 2017)

Based on information currently available to us, no federally listed or proposed, threatened or endangered species or critical habitat under the jurisdiction of the U.S. Fish and Wildlife Service are known to occur in the project area(s). Preparation of a Biological Assessment or further consultation with us under section 7 of the Endangered Species Act is not required. No further Endangered Species Act coordination is necessary for a period of one year from the date of this letter, unless additional information on listed or proposed species becomes available.

Thank you for your cooperation. Please contact Maria Tur of this office at 603-223-2541 if we can be of further assistance.

Sincerely yours,

Thomas R. Chapman
Supervisor
New England Field Office

United States Department of the Interior

FISH AND WILDLIFE SERVICE
New England Ecological Services Field Office
70 Commercial Street, Suite 300
Concord, NH 03301-5094
Phone: (603) 223-2541 Fax: (603) 223-0104
http://www.fws.gov/newengland

In Reply Refer To: January 04, 2018
Consultation Code: 05E1NE00-2018-SLI-0606
Event Code: 05E1NE00-2018-E-01406
Project Name: South Station

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(s):

- Official Species List

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

New England Ecological Services Field Office
70 Commercial Street, Suite 300
Concord, NH 03301-5094
(603) 223-2541

Project Summary

Consultation Code: 05E1NE00-2018-SLI-0606

Event Code: 05E1NE00-2018-E-01406

Project Name: South Station

Project Type: DEVELOPMENT

Project Description: Construction Dewatering

Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/place/42.35175717896644N71.05498482998264W

Counties: Suffolk, MA

Endangered Species Act Species

There is a total of 0 threatened, endangered, or candidate species on this 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. See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

IPaC Information for Planning and Consultation **U.S. Fish & Wildlife Service**

IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as trust resources) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

Location

Suffolk County, Massachusetts

Local office

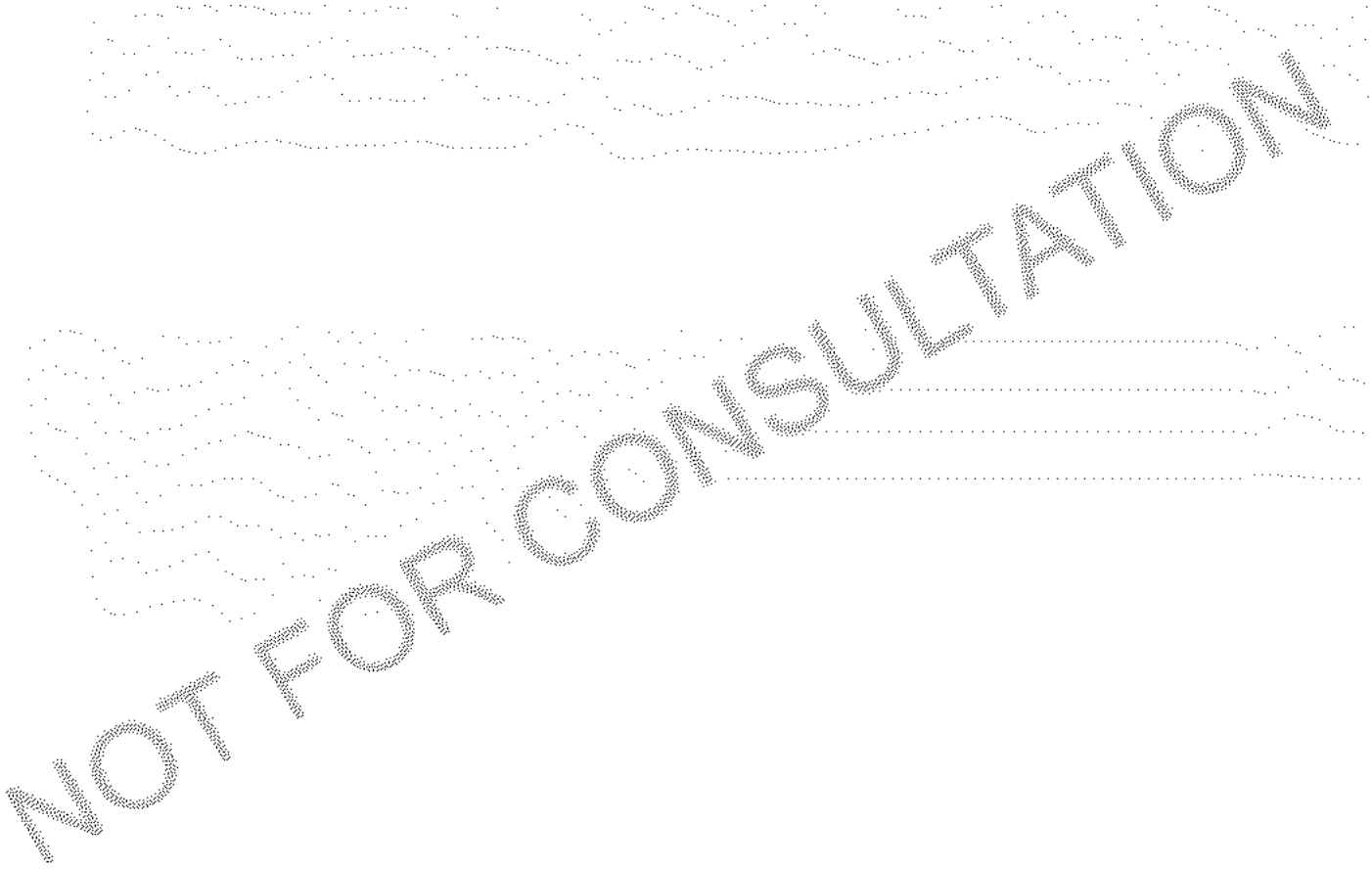
New England Ecological Services Field Office

(603) 223-2541
(603) 223-0104

70 Commercial Street, Suite 300

Concord, NH 03301-5094

http://www.fws.gov/newengland



Endangered species

This resource list is for informational purposes only and does not constitute an analysis of project level impacts.

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population, even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can **only** be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

1. Draw the project location and click CONTINUE.
2. Click DEFINE PROJECT.
3. Log in (if directed to do so).
4. Provide a name and description for your project.
5. Click REQUEST SPECIES LIST.

Listed species[1] are managed by the Ecological Services Program of the U.S. Fish and Wildlife Service.

1. Species listed under the Endangered Species Act are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the listing status page for more information.

The following species are potentially affected by activities in this location:

Birds

NAME	STATUS

Red Knot Calidris canutus rufa — Threatened

No critical habitat has been designated for this species.

https://ecos.fws.gov/ecp/species/1864

Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

THERE ARE NO CRITICAL HABITATS AT THIS LOCATION.

Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act[1] and the Bald and Golden Eagle Protection Act[2].

Any activity that results in the take (to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct) of migratory birds or eagles is prohibited unless authorized by the U.S. Fish and Wildlife Service[3]. There are no provisions for allowing the take of migratory birds that are unintentionally killed or injured. Any person or organization who plans or conducts activities that may result in the take of migratory birds is responsible for complying with the appropriate regulations and implementing appropriate conservation measures, as described below.

1. The Migratory Birds Treaty Act of 1918.
2. The Bald and Golden Eagle Protection Act of 1940.
3. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

Additional information can be found using the following links:

- Birds of Conservation Concern http://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php
- Measures for avoiding and minimizing impacts to birds http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/conservation-measures.php
- Nationwide conservation measures for birds http://www.fws.gov/migratorybirds/pdf/management/nationwidestandardconservationmeasures.pdf

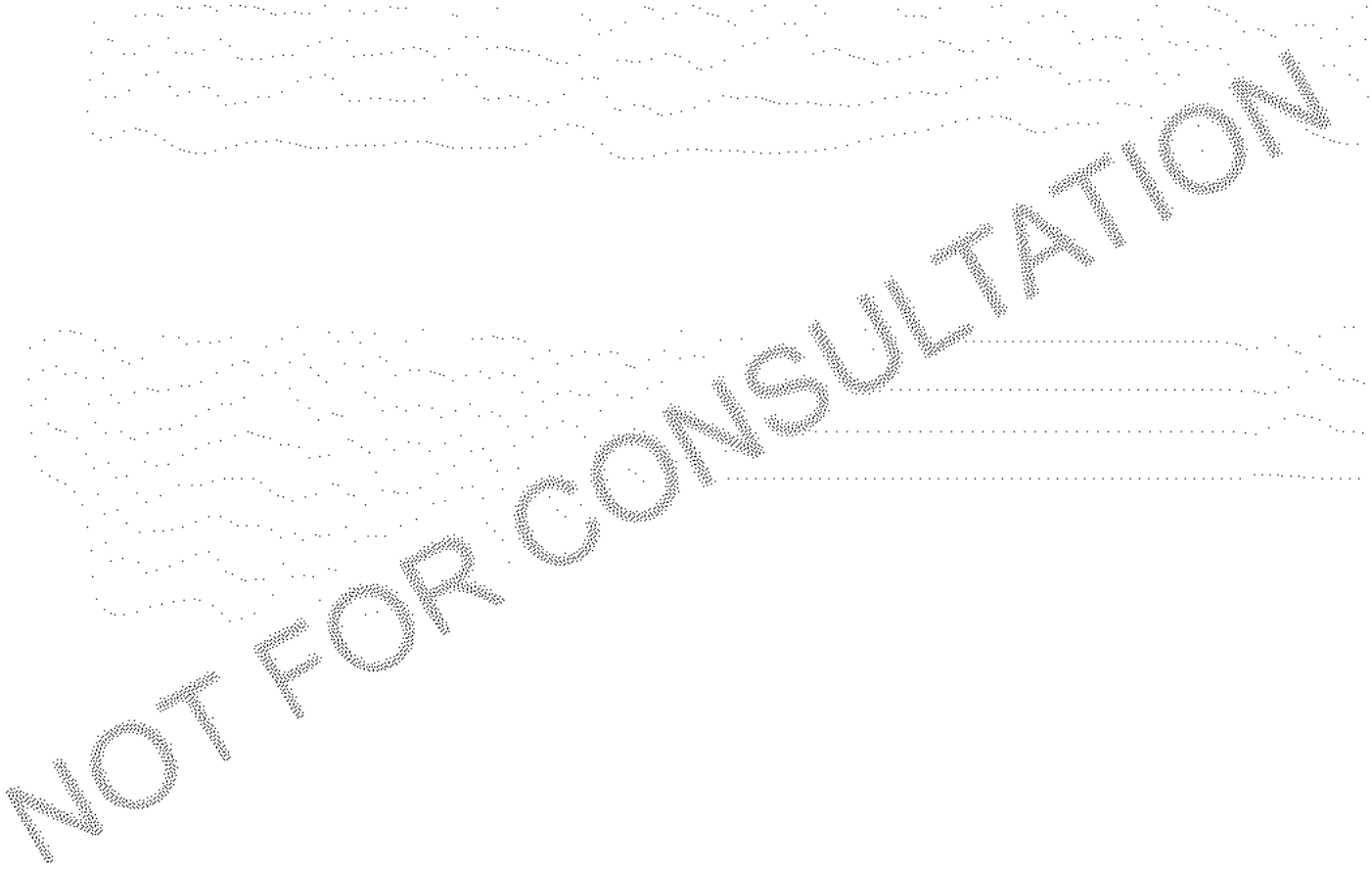
The birds listed below are USFWS Birds of Conservation Concern that might be affected by activities in this location. The list does not contain every bird you may find in this location, nor is it guaranteed that all of the birds on the list will be found on or near this location. To get a better idea of the specific locations where certain species have been reported and their level of

occurrence, please refer to resources such as the E-bird data mapping tool (year-round bird sightings by birders and the general public) and Breeding Bird Survey (relative abundance maps for breeding birds). Although it is important to try to avoid and minimize impacts to all birds, special attention should be given to the birds on the list below. To get a list of all birds potentially present in your project area, visit the E-bird Explore Data Tool.

NAME	BREEDING SEASON
American Oystercatcher Haematopus palliatus https://ecos.fws.gov/ecp/species/8935	Breeds Apr 15 to Aug 31
Black Skimmer Rynchops niger https://ecos.fws.gov/ecp/species/5234	Breeds May 20 to Sep 15
Black-billed Cuckoo Coccyzus erythropthalmus https://ecos.fws.gov/ecp/species/9399	Breeds May 15 to Oct 10
Bobolink Dolichonyx oryzivorus	Breeds May 20 to Jul 31
Buff-breasted Sandpiper Tryngites subruficollis	Breeds elsewhere
Canada Warbler Wilsonia canadensis	Breeds May 20 to Aug 10
Cerulean Warbler Dendroica cerulea https://ecos.fws.gov/ecp/species/2974	Breeds Aug 20 to Jul 20
Dunlin Calidris alpina hudsonia	Breeds elsewhere
Eastern Whip-poor-will Antrostomus vociferus	Breeds May 1 to Aug 20
Evening Grosbeak Coccothraustes vespertinus	Breeds elsewhere
Hudsonian Godwit Limosa haemastica	Breeds elsewhere
Kentucky Warbler Oporornis formosus	Breeds Apr 20 to Aug 20
King Rail Rallus elegans https://ecos.fws.gov/ecp/species/8936	Breeds May 1 to Sep 5
Least Tern Sterna antillarum	Breeds Apr 20 to Sep 10

Lesser Yellowlegs *Tringa flavipes* https://ecos.fws.gov/ecp/species/9679	Breeds elsewhere
Long-eared Owl *asio otus* https://ecos.fws.gov/ecp/species/3631	Breeds elsewhere
Nelson's Sparrow *Ammodramus nelsoni*	Breeds May 15 to Sep 5
Prairie Warbler *Dendroica discolor*	Breeds May 1 to Jul 31
Prothonotary Warbler *Protonotaria citrea*	Breeds Apr 1 to Jul 31
Purple Sandpiper *Calidris maritima*	Breeds elsewhere
Red-headed Woodpecker *Melanerpes erythrocephalus*	Breeds May 10 to Sep 10
Red-throated Loon *Gavia stellata*	Breeds elsewhere
Ruddy Turnstone *Arenaria interpres morinella*	Breeds elsewhere
Rusty Blackbird *Euphagus carolinus*	Breeds elsewhere
Saltmarsh Sparrow *Ammodramus caudacutus*	Breeds May 15 to Sep 5
Seaside Sparrow *Ammodramus maritimus*	Breeds May 10 to Aug 20
Semipalmated Sandpiper *Calidris pusilla*	Breeds elsewhere
Short-billed Dowitcher *Limnodromus griseus* https://ecos.fws.gov/ecp/species/9480	Breeds elsewhere
Snowy Owl *Bubo scandiacus*	Breeds elsewhere
Whimbrel *Numenius phaeopus* https://ecos.fws.gov/ecp/species/9483	Breeds elsewhere
Willet *Tringa semipalmata*	Breeds Apr 20 to Aug 5

Wood Thrush *Hylocichla mustelina* Breeds May 10 to Aug 31



Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in your project's counties during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

Breeding Season (■)

Yellow bars denote when the bird breeds in the Bird Conservation Region(s) in which your project lies. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort (|)

Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the counties of your project area. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

To see a bar's survey effort range, simply hover your mouse cursor over the bar.

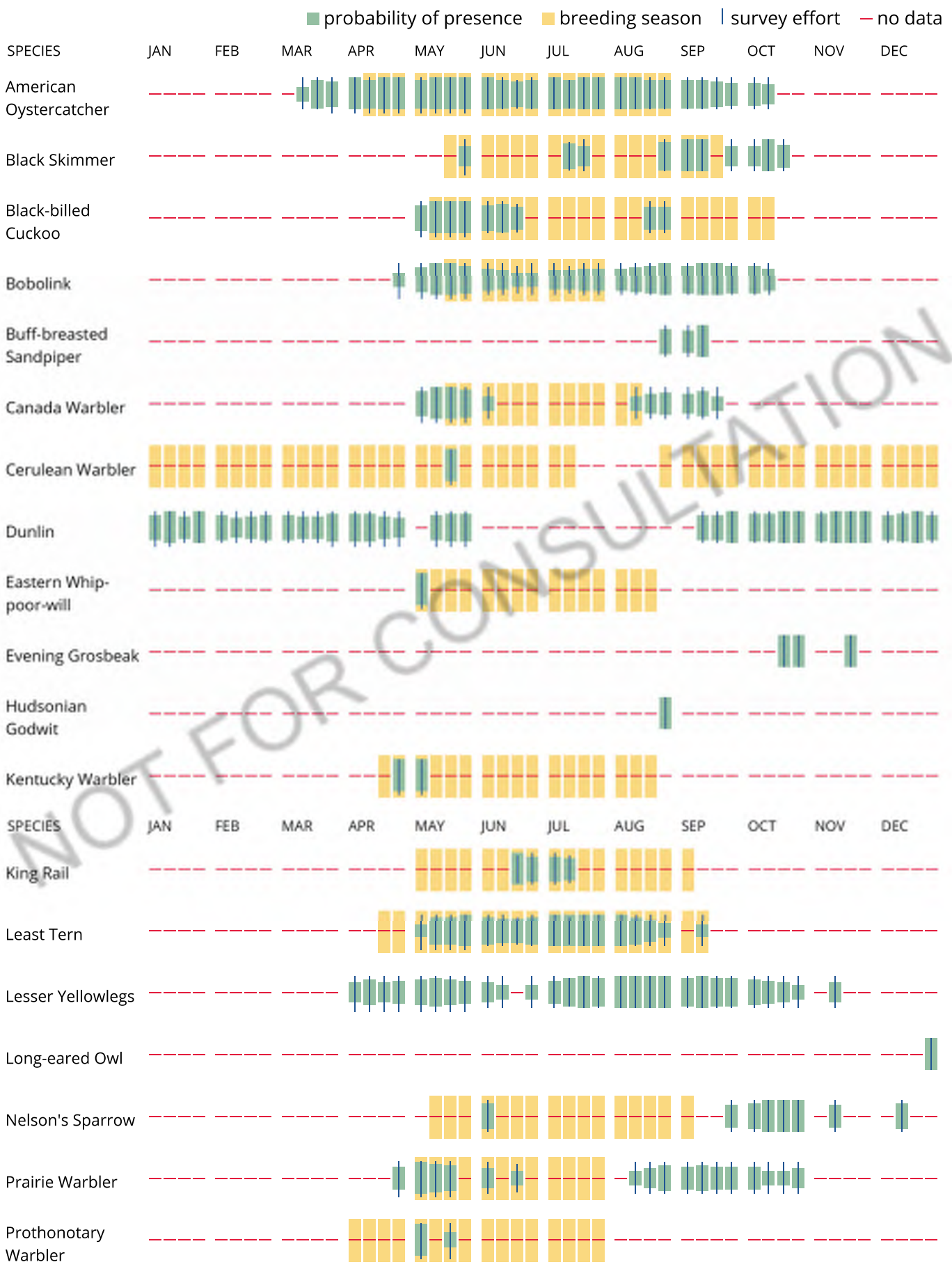
No Data (–)

A week is marked as having no data if there were no survey events for that week.

Survey Timeframe

Surveys from only the last 10 years are used in order to ensure delivery of currently relevant

information.



Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

Nationwide Conservation Measures describes measures that can help avoid and minimize impacts to all birds at any location year round. Such measures are particularly important when birds are most likely to occur in the project area. To see when birds are most likely to occur in your project area, view the Probability of Presence Summary. Special attention should be made to look for nests and avoid nest destruction during the breeding season. The best information about when birds are breeding can be found in Birds of North America (BNA) Online under the "Breeding Phenology" section of each species profile. Note that accessing this information may require a subscription. Additional measures and/or permits may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the migratory birds potentially occurring in my specified location?

The Migratory Bird Resource List is comprised of USFWS Birds of Conservation Concern (BCC) that might be affected by activities in your project location. These birds are of priority concern because it has been determined that without additional conservation actions, they are likely to become candidates for listing

under the Endangered Species Act (ESA).

The migratory bird list generated for your project is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets. The AKN list represents all birds reported to be occurring at some level throughout the year in the counties in which your project lies. That list is then narrowed to only the Birds of Conservation Concern for your project area.

Again, the Migratory Bird Resource list only includes species of particular priority concern, and is not representative of all birds that may occur in your project area. Although it is important to try to avoid and minimize impacts to all birds, special attention should be made to avoid and minimize impacts to birds of priority concern. To get a list of all birds potentially present in your project area, please visit the E-bird Explore Data Tool.

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the Avian Knowledge Network (AKN). This data is derived from a growing collection of survey, banding, and citizen science datasets.

Probability of presence data is continuously being updated as new and better information becomes available.

How do I know if a bird is breeding, wintering, migrating or present year-round in my project area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may refer to the following resources: The The Cornell Lab of Ornithology All About Birds Bird Guide, or (if you are unsuccessful in locating the bird of interest there), the Cornell Lab of Ornithology Neotropical Birds guide. If a bird entry on your migratory bird species list indicates a breeding season, it is probable the bird breeds in your project's counties at some point within the time-frame specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

Facilities

National Wildlife Refuge lands

Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS AT THIS LOCATION.

Fish hatcheries

THERE ARE NO FISH HATCHERIES AT THIS LOCATION.

Wetlands in the National Wetlands Inventory

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

THERE ARE NO KNOWN WETLANDS AT THIS LOCATION.

Data limitations

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

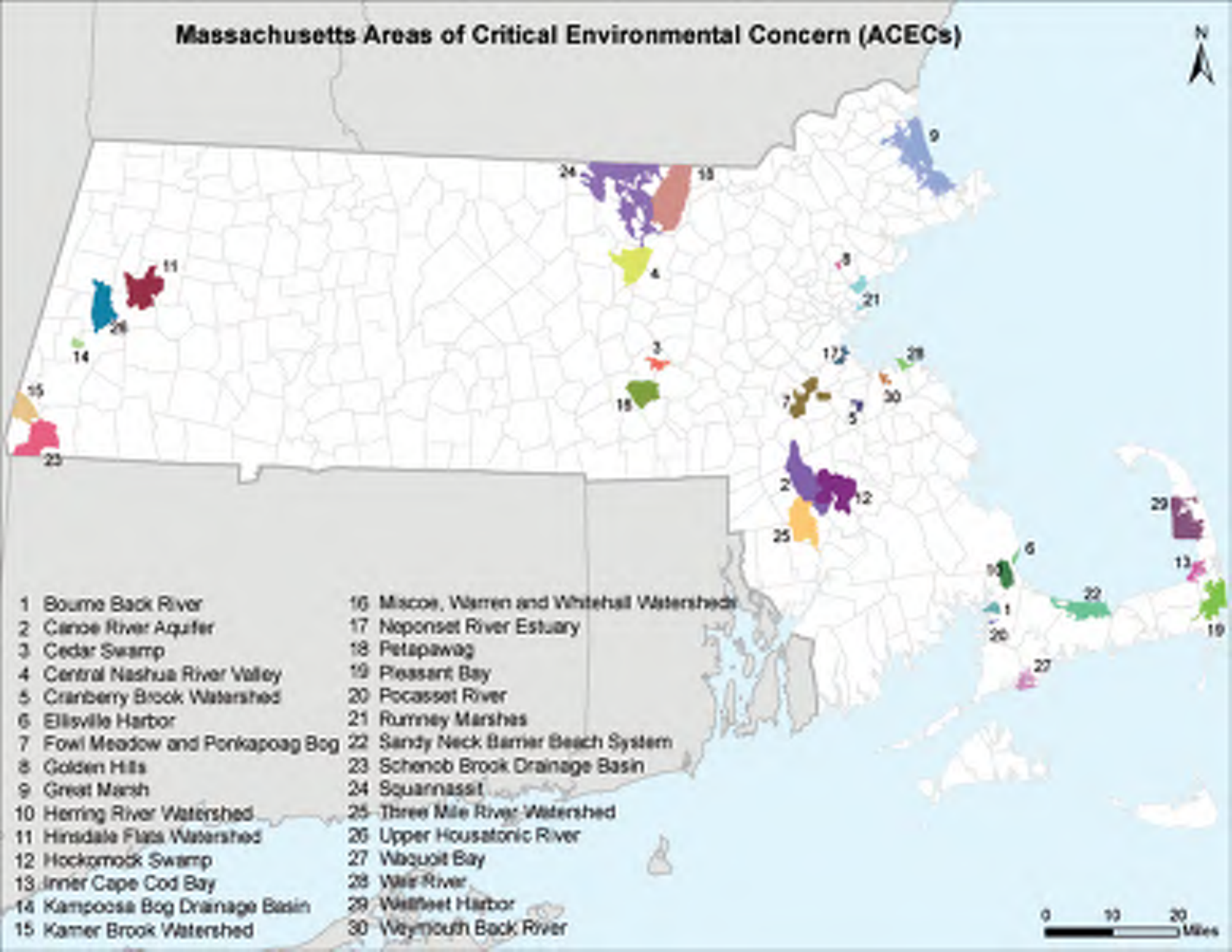
Data exclusions

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tuberficid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

Data precautions

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

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 Miacoe, 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

MASSACHUSETTS AREAS OF CRITICAL ENVIRONMENTAL CONCERN
November 2010

Total Approximate Acreage: 268,000 acres
Approximate acreage and designation date follow ACEC names below.

Bourne Back River
(1,850 acres, 1989) Bourne

Canoe River Aquifer and Associated Areas (17,200 acres, 1991) Easton, Foxborough, Mansfield, Norton, Sharon, and Taunton

Cedar Swamp
(1,650 acres, 1975) Hopkinton and Westborough

Central Nashua River Valley
(12,900 acres, 1996) Bolton, Harvard, Lancaster, and Leominster

Cranberry Brook Watershed
(1,050 acres, 1983) Braintree and Holbrook

Ellisville Harbor
(600 acres, 1980) Plymouth

Fowl Meadow and Ponkapoag Bog
(8,350 acres, 1992) Boston, Canton, Dedham, Milton, Norwood, Randolph, Sharon, and Westwood

Golden Hills
(500 acres, 1987) Melrose, Saugus, and Wakefield

Great Marsh (originally designated as Parker River/Essex Bay)
(25,500 acres, 1979) Essex, Gloucester, Ipswich, Newbury, and Rowley

Herring River Watershed
(4,450 acres, 1991) Bourne and Plymouth

Hinsdale Flats Watershed
(14,500 acres, 1992) Dalton, Hinsdale, Peru, and Washington

Hockomock Swamp
(16,950 acres, 1990) Bridgewater, Easton, Norton, Raynham, Taunton, and West Bridgewater

Inner Cape Cod Bay
(2,600 acres, 1985) Brewster, Eastham, and Orleans

Kampoosa Bog Drainage Basin
(1,350 acres, 1995) Lee and Stockbridge

Karner Brook Watershed
(7,000 acres, 1992) Egremont and Mount Washington

Miscoe, Warren, and Whitehall Watersheds
(8,700 acres, 2000) Grafton, Hopkinton, and Upton

Neponset River Estuary
(1,300 acres, 1995) Boston, Milton, and Quincy

Petapawag
(25,680 acres, 2002) Ayer, Dunstable, Groton, Pepperell, and Tyngsborough

Pleasant Bay
(9,240 acres, 1987) Brewster, Chatham, Harwich, and Orleans

Pocasset River
(160 acres, 1980) Bourne

Rumney Marshes
(2,800 acres, 1988) Boston, Lynn, Revere, Saugus, and Winthrop

Sandy Neck Barrier Beach System
(9,130 acres, 1978) Barnstable and Sandwich

Schenob Brook Drainage Basin
(13,750 acres, 1990) Mount Washington and Sheffield

Squannassit
(37,420 acres, 2002) Ashby, Ayer, Groton, Harvard, Lancaster, Lunenburg, Pepperell, Shirley, and Townsend

Three Mile River Watershed
(14,280 acres, 2008) Dighton, Norton, Taunton

Upper Housatonic River
(12,280 acres, 2009) Lee, Lenox, Pittsfield, Washington

Waquoit Bay
(2,580 acres, 1979) Falmouth and Mashpee

Weir River
(950 acres, 1986) Cohasset, Hingham, and Hull

Wellfleet Harbor
(12,480 acres, 1989) Eastham, Truro, and Wellfleet

Weymouth Back River
(800 acres, 1982) Hingham and Weymouth

ACEC acreages above are based on MassGIS calculations and may differ from numbers originally presented in designation documents and other ACEC publications due to improvements in accuracy of GIS data and boundary clarifications. Listed acreages have been rounded to the nearest 50 or 10 depending on whether boundary clarification has occurred. For more information please see, http://www.mass.gov/dcr/stewardship/acec/aboutMaps.htm.

Towns with ACECs within their Boundaries — November 2010

TOWN	ACEC
Ashby	Squannassit
Ayer	Petapawag
	Squannassit
Barnstable	Sandy Neck Barrier Beach System
Bolton	Central Nashua River Valley
Boston	Rumney Marshes
	Fowl Meadow and Ponkapoag Bog
	Neponset River Estuary
Bourne	Pocasset River
	Bourne Back River
	Herring River Watershed
Braintree	Cranberry Brook Watershed
Brewster	Pleasant Bay
	Inner Cape Cod Bay
Bridgewater	Hockomock Swamp
Canton	Fowl Meadow and Ponkapoag Bog
Chatham	Pleasant Bay
Cohasset	Weir River
Dalton	Hinsdale Flats Watershed
Dedham	Fowl Meadow and Ponkapoag Bog
Dighton	Three Mile River Watershed
Dunstable	Petapawag
Eastham	Inner Cape Cod Bay
	Wellfleet Harbor
Easton	Canoe River Aquifer
	Hockomock Swamp
Egremont	Karner Brook Watershed
Essex	Great Marsh
Falmouth	Waquoit Bay
Foxborough	Canoe River Aquifer
Gloucester	Great Marsh
Grafton	Miscoe-Warren-Whitehall Watersheds
Groton	Petapawag
	Squannassit
Harvard	Central Nashua River Valley
	Squannassit
Harwich	Pleasant Bay
Hingham	Weir River
	Weymouth Back River
Hinsdale	Hinsdale Flats Watershed
Holbrook	Cranberry Brook Watershed
Hopkinton	Miscoe-Warren-Whitehall Watersheds
	Cedar Swamp
Hull	Weir River
Ipswich	Great Marsh
Lancaster	Central Nashua River Valley
	Squannassit
Lee	Kampoosa Bog Drainage Basin
	Upper Housatonic River
Lenox	Upper Housatonic River
Leominster	Central Nashua River Valley
Lunenburg	Squannassit
Lynn	Rumney Marshes
Mansfield	Canoe River Aquifer
Mashpee	Waquoit Bay
Melrose	Golden Hills
Milton	Fowl Meadow and Ponkapoag Bog
	Neponset River Estuary
Mt. Washington	Karner Brook Watershed
	Schenob Brook
Newbury	Great Marsh
Norton	Hockomock Swamp
	Canoe River Aquifer
	Three Mile River Watershed
Norwood	Fowl Meadow and Ponkapoag Bog
Orleans	Inner Cape Cod Bay
	Pleasant Bay
Pepperell	Petapawag
	Squannassit
Peru	Hinsdale Flats Watershed
Pittsfield	Upper Housatonic River
Plymouth	Herring River Watershed
	Ellisville Harbor
Quincy	Neponset River Estuary
Randolph	Fowl Meadow and Ponkapoag Bog
Raynham	Hockomock Swamp
Revere	Rumney Marshes
Rowley	Great Marsh
Sandwich	Sandy Neck Barrier Beach System
Saugus	Rumney Marshes
	Golden Hills
Sharon	Canoe River Aquifer
	Fowl Meadow and Ponkapoag Bog
Sheffield	Schenob Brook
Shirley	Squannassit
Stockbridge	Kampoosa Bog Drainage Basin
Taunton	Hockomock Swamp
	Canoe River Aquifer
	Three Mile River Watershed
Truro	Wellfleet Harbor
Townsend	Squannassit
Tyngsborough	Petapawag
Upton	Miscoe-Warren-Whitehall Watersheds
Wakefield	Golden Hills
Washington	Hinsdale Flats Watershed
	Upper Housatonic River
Wellfleet	Wellfleet Harbor
W Bridgewater	Hockomock Swamp
Westborough	Cedar Swamp
Westwood	Fowl Meadow and Ponkapoag Bog
Weymouth	Weymouth Back River
Winthrop	Rumney Marshes

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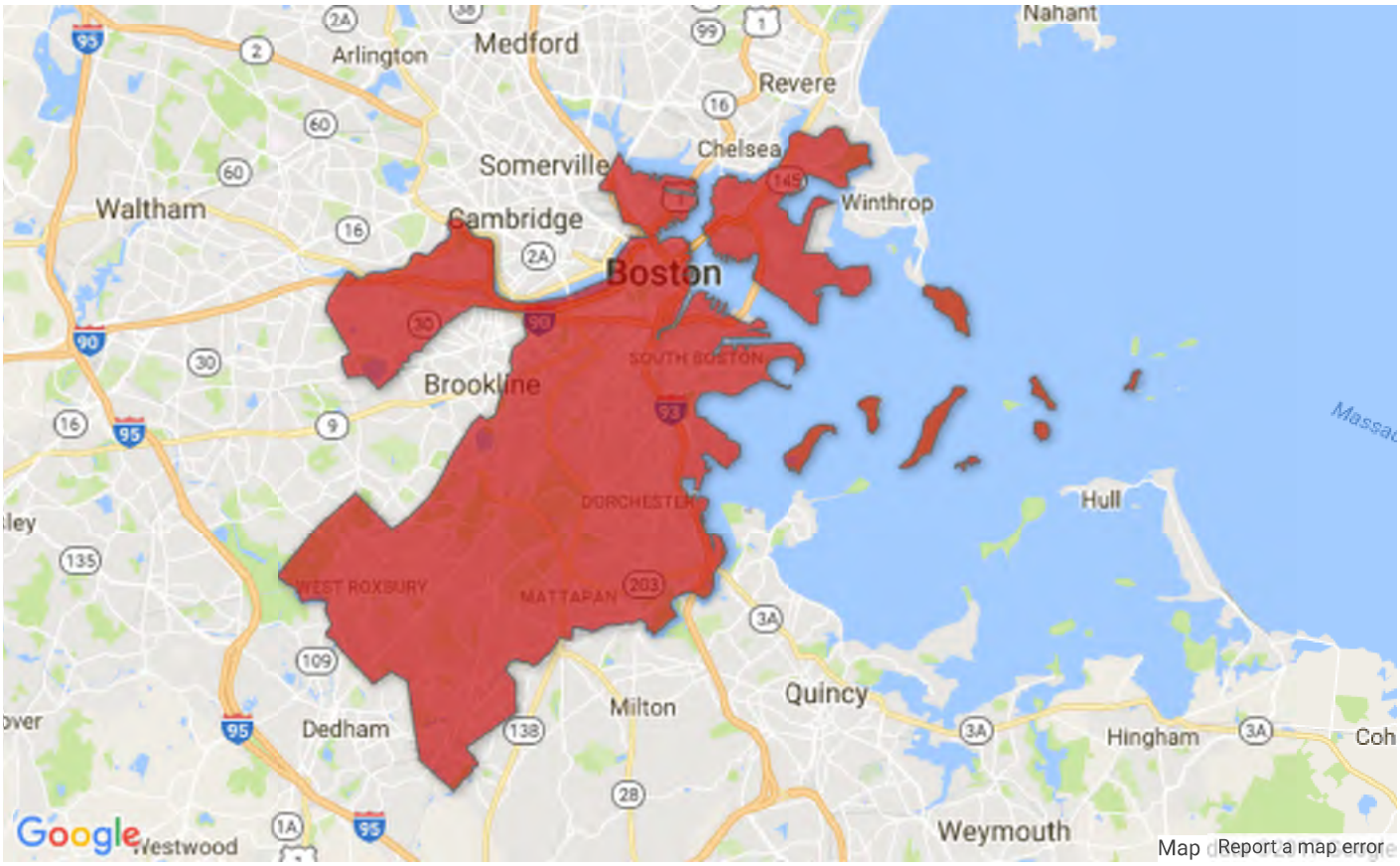
The Natural Heritage & Endangered Species Program maintains a list of all documented MESA-listed species observations in the Commonwealth. Please select a town if you would like to see a table showing which listed species have been observed in that town. The selected town will also be highlighted on the map. Alternatively you can specify either the Common Name or Scientific Name of a species to see it's distribution on the map and table showing the towns it has been observed in. Clicking on a column header in the table will sort the column. Clicking again on the same column heading will reverse the sort order.

The Town List and Species Viewer will be updated at regular intervals as new data is accepted and entered into the NHESP database.

Town: BOSTON or Species (Common Name): or Species (Scientific Name):



Showing 1 to 46 of 46 entries Search:

First Previous 1 Next Last

Town	Taxonomic Group	Scientific Name	Common Name	MESA Status	Most Recent Obs
BOSTON	Butterfly/Moth	Abagrotis nefascia	Coastal Heathland Cutworm	SC	2001
BOSTON	Vascular Plant	Ageratina aromatica	Lesser Snakeroot	E	1896
BOSTON	Amphibian	Ambystoma laterale	Blue-spotted Salamander	SC	2015
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	Historic
BOSTON	Vascular Plant	Aristida tuberculosa	Seabeach Needlegrass	T	1877

Town	Taxonomic Group	Scientific Name	Common Name	MESA Status	Most Recent Obs
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	2016
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	T	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	Vascular Plant	Malaxis unifolia	Green Adder's Mouth	T	1883
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	2014
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

Show 100 ▼ entries

Show Additional Info

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

MassDEP - Bureau of Waste Site Cleanup

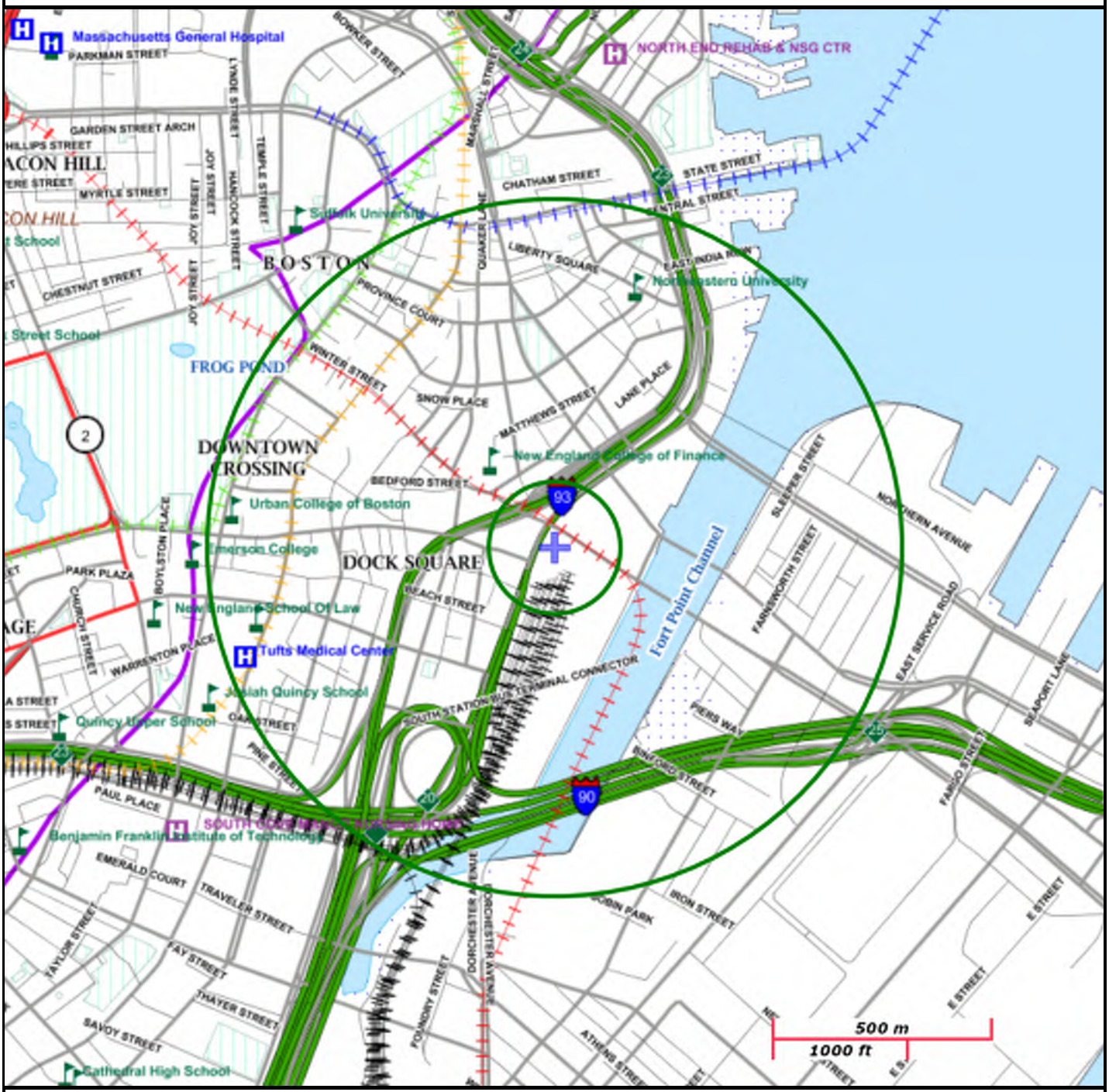
Phase 1 Site Assessment Map: 500 feet & 0.5 Mile Radii

Site Information:
BOSTON SOUTH STATION TOWER - PHASE 1
ATLANTIC AVENUE BOSTON, MA

NAD83 UTM Meters:
4690917mN , 330734mE (Zone: 19)
November 29, 2017

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.

APPENDIX D

BWSC PERMIT

Haley & Aldrich, Inc.
465 Medford St.
Suite 2200
Boston, MA 02129
617.886.7400

26 April 2018
File No. 12287-200

Boston Water and Sewer Commission
Engineering Customer Services
900 Harrison Avenue
Boston, MA 02119

Attention: Matthew Tuttle

Subject: Request for Approval of Temporary Construction Dewatering
Boston South Station Tower - Phase 1
Atlantic Avenue
Boston, Massachusetts

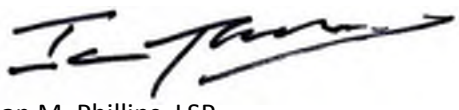
Dear Mr. Tuttle:

On behalf of our client, South Station Phase 1 Owner, LLC c/o Hines Interests LP, this letter submits the Dewatering Discharge Permit Application in support of the proposed Boston South Station Tower - Phase 1 site located in Boston, Massachusetts.

Dewatering is necessary to enable construction excavations in-the-dry, and is anticipated to begin in September 2018 and continue for up to 18 months. Prior to discharge, collected water will be routed through a sedimentation tank and bag filter at minimum to remove suspended solids and un-dissolved chemical constituents. The proposed dewatering discharge route and BWSC outfall locations are shown on Figure 1.

A submittal was provided to USEPA for discharge of the dewatering effluent under the Remediation General Permit (RGP). A copy of the submitted RGP application is attached. If you have any questions, please feel free to contact the undersigned at 617-886-7400.

Sincerely yours,
HALEY & ALDRICH, INC.



Ian M. Phillips, LSP
Senior Associate

Attachments:
Dewatering Discharge Permit Application
Figure 1 – Proposed Discharge Route
Copy of NPDES RGP Permit Application

Boston Water and Sewer Commission
980 Harrison Avenue
Boston, MA 02119-2540

DEWATERING DISCHARGE PERMIT APPLICATION

OWNER / AUTHORIZED APPLICANT PROVIDE INFORMATION HERE:

South Station Phase 1 Owner, LLC

Company Name: c/o Hines Interests LP Address: One International Place, Suite 1120, Boston, MA 02110

Phone Number: 617-261-2264 Fax number: _____

Contact person name: Gregory B. Spivey Title: Vice President Construction

Cell number: 571-499-3890 Email address: Greg.Spivey@hines.com

Permit Request (check one): ☒ New Application ☐ Permit Extension ☐ Other (Specify): _____

Owner's Information (if different from above):

Owner of property being dewatered: _____

Owner's mailing address: _____ Phone number: _____

Location of Discharge & Proposed Treatment System(s):

Street number and name: Atlantic Avenue, South Station Neighborhood Boston

Discharge is to a: ☐ Sanitary Sewer ☐ Combined Sewer ☒ Storm Drain ☐ Other (specify): _____

Describe Proposed Pre-Treatment System(s): Sedimentation Tank, Bag Filter, and any other components as necessary (refer to attached RGP Application)

BWSC Outfall No. CSO064 Receiving Waters Boston Inner Harbor/Fort Point Channel

---

Temporary Discharges (Provide Anticipated Dates of Discharge): From September 2018 To March 2020

- ☐ Groundwater Remediation
- ☐ Utility/Manhole Pumping
- ☒ Accumulated Surface Water
- ☐ Tank Removal/Installation
- ☐ Test Pipe
- ☐ Hydrogeologic Testing
- ☒ Foundation Excavation
- ☒ Trench Excavation
- ☐ Other _____

Permanent Discharges

- ☐ Foundation Drainage
- ☐ Accumulated Surface Water
- ☐ Non-contact/Uncontaminated Process
- ☐ Crawl Space/Footing Drain
- ☐ Non-contact/Uncontaminated Cooling
- ☐ Other; _____

---

1. Attach a Site Plan showing the source of the discharge and the location of the point of discharge (i.e. the sewer pipe or catch basin). Include meter type, meter number, size, make and start reading. Note: All discharges to the Commission's sewer system will be assessed current sewer charges.
2. If discharging to a sanitary or combined sewer, attach a copy of MWRA's Sewer Use Discharge permit or application.
3. If discharging to a separate storm drain, attach a copy of EPA's NPDES Permit or NOI application, or NPDES Permit exclusion letter for the discharge, as well as other relevant information.
4. Dewatering Drainage Permit will be denied or revoked if applicant fails to obtain the necessary permits from MWRA or EPA.

Submit Completed Application to: Boston Water and Sewer Commission
Engineering Customer Services
980 Harrison Avenue, Boston, MA 02119
Attn: Matthew Tuttle, Engineering Customer Service
E-mail: tuttlemp@bwsc.org
Phone: 617-989-7204 Fax: 617-989-7716

Signature of Authorized Representative for Property Owner: _____ Date: 4/25/18

SOUTH STATION

OUTFALL

DISCHARGE ROUTE

BOSTON WATER AND SEWER

N W E S

200 150 100 50 0 100 200 300 Feet

1 inch = 100 feet

HALEY ALDRICH

BOSTON SOUTH STATION
BOSTON, MASSACHUSETTS

PROPOSED DISCHARGE ROUTE

SCALE AS SHOWN
JANUARY 2018

FIGURE 1

APPENDIX E

Laboratory Data Reports

ANALYTICAL REPORT

Lab Number:	L1738446
Client:	Haley & Aldrich, Inc. 465 Medford Street, Suite 2200 Charlestown, MA 02129-1400
ATTN:	Andrew Chan
Phone:	(617) 886-7400
Project Name:	SOUTH STATION
Project Number:	12287-200
Report Date:	10/27/17

Certifications & Approvals: MA (M-MA086), NH NELAP (2064), NJ NELAP (MA935), CT (PH-0574), IL (200077), ME (MA00086), MD (348), NY (11148), NC (25700/666), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #P330-14-00197).

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

Project Name: SOUTH STATION
Project Number: 12287-200

Lab Number: L1738446
Report Date: 10/27/17

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L1738446-01	HA17-SOUTH STATION -SS	WATER	SUMMER STREET	10/23/17 14:35	10/23/17

Project Name: SOUTH STATION
Project Number: 12287-200
Lab Number: L1738446
Report Date: 10/27/17

Case Narrative

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

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

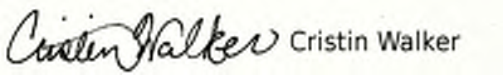
In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances the specific failure is not narrated but noted in the associated QC table. The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

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

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

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

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

Authorized Signature:  Cristin Walker

Title: Technical Director/Representative Date: 10/27/17

INORGANICS
&
MISCELLANEOUS

Project Name: SOUTH STATION
Project Number: 12287-200

Lab Number: L1738446
Report Date: 10/27/17

SAMPLE RESULTS

Lab ID: L1738446-01
Client ID: HA17-SOUTH STATION -SS
Sample Location: SUMMER STREET
Matrix: Water

Date Collected: 10/23/17 14:35
Date Received: 10/23/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
SALINITY	28		SU	2.0	--	1	-	10/26/17 18:37	121,2520B	AS
pH (H)	7.6		SU	-	NA	1	-	10/23/17 23:44	121,4500H+-B	AS
Nitrogen, Ammonia	0.147		mg/l	0.075	--	1	10/24/17 02:15	10/24/17 21:12	121,4500NH3-BH	AT

Project Name: SOUTH STATION
Project Number: 12287-200
Lab Number: L1738446
Report Date: 10/27/17

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG1055463-1										
Nitrogen, Ammonia	ND		mg/l	0.075	--	1	10/24/17 02:15	10/24/17 20:57	121,4500NH3-BH	AT

Lab Control Sample Analysis

Batch Quality Control

Project Name: SOUTH STATION
Project Number: 12287-200

Lab Number: L1738446
Report Date: 10/27/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1055450-1								
pH	100		-		99-101	-		5
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1055463-2								
Nitrogen, Ammonia	92		-		80-120	-		20
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1056756-1								
SALINITY	106		-			-		

Matrix Spike Analysis
Batch Quality Control

Project Name: SOUTH STATION
Project Number: 12287-200

Lab Number: L1738446
Report Date: 10/27/17

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1055463-6 QC Sample: L1737982-01 Client ID: MS Sample												
Nitrogen, Ammonia	ND	4	3.61	90		-	-		80-120	-		20

Lab Duplicate Analysis
Batch Quality Control

Project Name: SOUTH STATION
Project Number: 12287-200

Lab Number: L1738446
Report Date: 10/27/17

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1055450-2 QC Sample: L1738423-01 Client ID: DUP Sample						
pH	7.1	7.1	SU	0		5
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1055463-5 QC Sample: L1737982-01 Client ID: DUP Sample						
Nitrogen, Ammonia	ND	ND	mg/l	NC		20
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1056756-2 QC Sample: L1738448-01 Client ID: DUP Sample						
SALINITY	4.2	4.2	SU	0		

Project Name: SOUTH STATION
Project Number: 12287-200

Lab Number: L1738446
Report Date: 10/27/17

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L1738446-01A	Plastic 250ml HNO3 preserved	A	<2	<2	4.2	Y	Absent		HOLD-METAL(180)
L1738446-01B	Amber 120ml unpreserved	A	7	7	4.2	Y	Absent		SALINITY(28)
L1738446-01C	Plastic 250ml unpreserved	A	7	7	4.2	Y	Absent		PH-4500(.01)
L1738446-01D	Plastic 500ml H2SO4 preserved	A	<2	<2	4.2	Y	Absent		NH3-4500(28)

*Values in parentheses indicate holding time in days

Project Name:	SOUTH STATION	**Lab Number:**	L1738446
Project Number:	12287-200	**Report Date:**	10/27/17

GLOSSARY

Acronyms

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

Footnotes

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

Terms

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

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

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

Data Qualifiers

A	- Spectra identified as "Aldol Condensation Product".
B	- The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related

Report Format: Data Usability Report

Project Name:	SOUTH STATION	**Lab Number:**	L1738446
Project Number:	12287-200	**Report Date:**	10/27/17

Data Qualifiers

projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

C - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

G - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.

H - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

I - The lower value for the two columns has been reported due to obvious interference.

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

P - The RPD between the results for the two columns exceeds the method-specified criteria.

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

J - Estimated value. This represents an estimated concentration for Tentatively Identified Compounds (TICs).

ND - Not detected at the reporting limit (RL) for the sample.

Report Format: Data Usability Report

Project Name:	SOUTH STATION	**Lab Number:**	L1738446
Project Number:	12287-200	**Report Date:**	10/27/17

REFERENCES

121 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. Standard Methods Online.

LIMITATION OF LIABILITIES

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

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

Certification Information

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

Westborough Facility
EPA 624: m/p-xylene, o-xylene
EPA 8260C: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), Methyl methacrylate, 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270D: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
EPA 300: DW: Bromide
EPA 6860: NPW and SCM: Perchlorate
EPA 9010: NPW and SCM: Amenable Cyanide Distillation
EPA 9012B: NPW: Total Cyanide
EPA 9050A: NPW: Specific Conductance
SM3500: NPW: Ferrous Iron
SM4500: NPW: Amenable Cyanide, Dissolved Oxygen; SCM: Total Phosphorus, TKN, NO2, NO3.
SM5310C: DW: Dissolved Organic Carbon

Mansfield Facility
SM 2540D: TSS
EPA 3005A NPW
EPA 8082A: NPW: PCB: 1, 5, 31, 87,101, 110, 141, 151, 153, 180, 183, 187.
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
Biological Tissue Matrix: EPA 3050B

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

Westborough Facility:

Drinking Water
EPA 300.0: Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B**
EPA 332: Perchlorate; **EPA 524.2:** THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D**.

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **SM4500NO3-F, EPA 353.2**: Nitrate-N**, EPA 351.1, SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D.**
EPA 624: Volatile Halocarbons & Aromatics,
EPA 608: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045**: PCB-Oil.
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9221E.**

Mansfield Facility:

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

Non-Potable Water
EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.
EPA 200.8: Al, Sb, As, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn.
EPA 245.1 Hg.
SM2340B

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

CHAIN OF CUSTODY

Page 1 of 1

Date Rec'd in Lab: 10/23/17

ALPHA Job #: L1738446

Project Information

Project Name: South Station
Project Location: Summer Street
Project #: 12287.200
Project Manager: A. Chan
ALPHAQuote #:

Turn-Around Time

Standard: ☑ Due Date:
(only if pre-approved) ☐ # of Days: 5 Day

Deliverables

☑ Email ☐ Fax
☐ EQuIS (1 File) ☑ EQuIS (4 File)
☐ Other:

Billing Information

☑ Same as Client info
PO #

Regulatory Requirements (Program/Criteria)

MA MPDES RGP

Note: Select State from menu & identify criteria

Disposal Site Information

Please identify below location of applicable disposal facilities.
Disposal Facility:
☐ NJ ☐ NY
☐ Other:

A&A Information

A&A Client: Hines
A&A Address: 465 Medford St
Boston, MA 02129-1400
A&A Phone: 617.886.7400
A&A Fax:
A&A Email: Kalepidis, Lhoward

These samples have been previously analyzed by Alpha

Other project specific requirements/comments:

Analyze using the EPA 2017 RGP Approved Testing Methods and Minimum Detection Levels.
pH and Temperature readings to additionally be collected in the field

ANALYSIS

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	Ammonia	pH	Salinity	Sample Specific Comments
38446-01	HATT-SouthStation-SS	10/23/17	1435	WQ	AF	X	X	X	

Sample Filtration

☐ Done
☐ Lab to do
Preservation
☐ Lab to do
(Please Specify below)

Container Type: P P P
Preservative:

Preservative Code: A = None, B = HCl, C = HNO3, D = H2SO4, E = NaOH, F = MeOH, G = NaHSO4, H = Na2S2O3, I = Zn Acetate+NaOH, O = Other

Container Code: P = Plastic, A = Amber Glass, V = Vial, G = Glass, B = Bacteria Cup, C = Cube, O = Other, E = Encore, D = BOD Bottle

Westboro: Certification No: MA935
Mansfield: Certification No: MA015

Relinquished By:	Date/Time	Received By:	Date/Time
	10/23/17	M. Cotter	10/23/17 16:20
M. Cotter	10/23/17 18:24		
	10/23/17 18:24		10/23/17 1830
			10/23/17 1845

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. Alpha Analytical's services under this Chain of Custody shall be performed in accordance with terms and conditions within Blanket Service Agreement# 2015-18-Alpha Analytical by and between Haley & Aldrich, Inc., its subsidiaries and affiliates and Alpha Analytical.

Document ID: 20400 Rev 1 (12/6/2016)

ANALYTICAL REPORT

Lab Number:	L1739283
Client:	Haley & Aldrich, Inc. 465 Medford Street, Suite 2200 Charlestown, MA 02129-1400
ATTN:	Denis Bell
Phone:	(617) 886-7300
Project Name:	SOUTH STATION
Project Number:	12287-200
Report Date:	11/03/17

Certifications & Approvals: MA (M-MA086), NH NELAP (2064), NJ NELAP (MA935), CT (PH-0574), IL (200077), ME (MA00086), MD (348), NY (11148), NC (25700/666), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #P330-14-00197).

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

Project Name: SOUTH STATION
Project Number: 12287-200

Lab Number: L1739283
Report Date: 11/03/17

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L1739283-01	HA-OW-4	WATER	SUMMER STREET	10/27/17 10:55	10/27/17

Project Name:	SOUTH STATION	**Lab Number:**	L1739283
Project Number:	12287-200	**Report Date:**	11/03/17

Case Narrative

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

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

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

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

HOLD POLICY

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

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

Project Name: SOUTH STATION
Project Number: 12287-200
Lab Number: L1739283
Report Date: 11/03/17

Case Narrative (continued)

Semivolatile Organics

The WG1057346-2/-3 LCS/LCSD recoveries, associated with L1739283-01 (HA-OW-4), are below the acceptance criteria for benzidine (7%/2%) and pyridine (LCSD at 6%); however, they have been identified as "difficult" analytes. The results of the associated sample are reported.

Total Metals

The WG1057621-2 LCS recovery, associated with L1739283-01 (HA-OW-4), is above the acceptance criteria for cadmium (116%); however, the associated sample is non-detect for this target analyte. The results of the original analysis are reported.

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

Authorized Signature: Cristin Walker

Title: Technical Director/Representative Date: 11/03/17

ORGANICS

VOLATILES

Project Name: SOUTH STATION
Project Number: 12287-200
Lab Number: L1739283
Report Date: 11/03/17

SAMPLE RESULTS

Lab ID: L1739283-01
Client ID: HA-OW-4
Sample Location: SUMMER STREET
Date Collected: 10/27/17 10:55
Date Received: 10/27/17
Field Prep: Not Specified

Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 11/02/17 09:11
Analyst: MM

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	3.0	--	1
1,1-Dichloroethane	ND		ug/l	0.75	--	1
Chloroform	ND		ug/l	0.75	--	1
Carbon tetrachloride	ND		ug/l	0.50	--	1
1,2-Dichloropropane	ND		ug/l	1.8	--	1
Dibromochloromethane	ND		ug/l	0.50	--	1
1,1,2-Trichloroethane	ND		ug/l	0.75	--	1
Tetrachloroethene	ND		ug/l	0.50	--	1
Chlorobenzene	ND		ug/l	0.50	--	1
Trichlorofluoromethane	ND		ug/l	2.5	--	1
1,2-Dichloroethane	ND		ug/l	0.50	--	1
1,1,1-Trichloroethane	ND		ug/l	0.50	--	1
Bromodichloromethane	ND		ug/l	0.50	--	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	--	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	--	1
1,3-Dichloropropene, Total	ND		ug/l	0.50	--	1
1,1-Dichloropropene	ND		ug/l	2.5	--	1
Bromoform	ND		ug/l	2.0	--	1
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	--	1
Benzene	ND		ug/l	0.50	--	1
Toluene	ND		ug/l	0.75	--	1
Ethylbenzene	ND		ug/l	0.50	--	1
Chloromethane	ND		ug/l	2.5	--	1
Bromomethane	ND		ug/l	1.0	--	1
Vinyl chloride	ND		ug/l	1.0	--	1
Chloroethane	ND		ug/l	1.0	--	1
1,1-Dichloroethene	ND		ug/l	0.50	--	1
1,2-Dichloroethene, Total	ND		ug/l	0.50	--	1
Trichloroethene	ND		ug/l	0.50	--	1
1,2-Dichlorobenzene	ND		ug/l	2.5	--	1

Project Name: SOUTH STATION **Lab Number:** L1739283

Project Number: 12287-200 **Report Date:** 11/03/17

SAMPLE RESULTS

Lab ID: L1739283-01 Date Collected: 10/27/17 10:55

Client ID: HA-OW-4 Date Received: 10/27/17

Sample Location: SUMMER STREET Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,3-Dichlorobenzene	ND		ug/l	2.5	--	1
1,4-Dichlorobenzene	ND		ug/l	2.5	--	1
Methyl tert butyl ether	ND		ug/l	1.0	--	1
p/m-Xylene	ND		ug/l	1.0	--	1
o-Xylene	ND		ug/l	1.0	--	1
Xylenes, Total	ND		ug/l	1.0	--	1
cis-1,2-Dichloroethene	ND		ug/l	0.50	--	1
Dibromomethane	ND		ug/l	5.0	--	1
1,4-Dichlorobutane	ND		ug/l	5.0	--	1
1,2,3-Trichloropropane	ND		ug/l	5.0	--	1
Styrene	ND		ug/l	1.0	--	1
Dichlorodifluoromethane	ND		ug/l	5.0	--	1
Acetone	ND		ug/l	5.0	--	1
Carbon disulfide	ND		ug/l	5.0	--	1
2-Butanone	ND		ug/l	5.0	--	1
Vinyl acetate	ND		ug/l	5.0	--	1
4-Methyl-2-pentanone	ND		ug/l	5.0	--	1
2-Hexanone	ND		ug/l	5.0	--	1
Ethyl methacrylate	ND		ug/l	5.0	--	1
Acrylonitrile	ND		ug/l	5.0	--	1
Bromochloromethane	ND		ug/l	2.5	--	1
Tetrahydrofuran	ND		ug/l	5.0	--	1
2,2-Dichloropropane	ND		ug/l	2.5	--	1
1,2-Dibromoethane	ND		ug/l	2.0	--	1
1,3-Dichloropropane	ND		ug/l	2.5	--	1
1,1,1,2-Tetrachloroethane	ND		ug/l	0.50	--	1
Bromobenzene	ND		ug/l	2.5	--	1
n-Butylbenzene	ND		ug/l	0.50	--	1
sec-Butylbenzene	ND		ug/l	0.50	--	1
tert-Butylbenzene	ND		ug/l	2.5	--	1
o-Chlorotoluene	ND		ug/l	2.5	--	1
p-Chlorotoluene	ND		ug/l	2.5	--	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	--	1
Hexachlorobutadiene	ND		ug/l	0.50	--	1
Isopropylbenzene	ND		ug/l	0.50	--	1
p-Isopropyltoluene	ND		ug/l	0.50	--	1
Naphthalene	ND		ug/l	2.5	--	1
n-Propylbenzene	ND		ug/l	0.50	--	1
1,2,3-Trichlorobenzene	ND		ug/l	2.5	--	1

Project Name: SOUTH STATION
Lab Number: L1739283
Project Number: 12287-200
Report Date: 11/03/17

SAMPLE RESULTS

Lab ID: L1739283-01
Client ID: HA-OW-4
Sample Location: SUMMER STREET
Date Collected: 10/27/17 10:55
Date Received: 10/27/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,2,4-Trichlorobenzene	ND		ug/l	2.5	--	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	--	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	--	1
trans-1,4-Dichloro-2-butene	ND		ug/l	2.5	--	1
Ethyl ether	ND		ug/l	2.5	--	1
Tert-Butyl Alcohol	ND		ug/l	10	--	1
Tertiary-Amyl Methyl Ether	ND		ug/l	2.0	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	99		70-130
Toluene-d8	99		70-130
4-Bromofluorobenzene	94		70-130
Dibromofluoromethane	119		70-130

Project Name: SOUTH STATION
Project Number: 12287-200
Lab Number: L1739283
Report Date: 11/03/17

SAMPLE RESULTS

Lab ID: L1739283-01
Client ID: HA-OW-4
Sample Location: SUMMER STREET
Date Collected: 10/27/17 10:55
Date Received: 10/27/17
Field Prep: Not Specified

Matrix: Water
Analytical Method: 1,8260C-SIM(M)
Analytical Date: 11/02/17 09:11
Analyst: MM

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS-SIM - Westborough Lab						
1,4-Dioxane	ND		ug/l	3.0	--	1

Project Name: SOUTH STATION
Project Number: 12287-200

Lab Number: L1739283
Report Date: 11/03/17

SAMPLE RESULTS

Lab ID: L1739283-01
Client ID: HA-OW-4
Sample Location: SUMMER STREET

Matrix: Water
Analytical Method: 14,504.1
Analytical Date: 11/02/17 10:42
Analyst: NS

Date Collected: 10/27/17 10:55
Date Received: 10/27/17
Field Prep: Not Specified
Extraction Method: EPA 504.1
Extraction Date: 11/02/17 09:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Microextractables by GC - Westborough Lab							
1,2-Dibromoethane	ND		ug/l	0.010	--	1	A
1,2-Dibromo-3-chloropropane	ND		ug/l	0.010	--	1	A

Project Name: SOUTH STATION
Project Number: 12287-200

Lab Number: L1739283
Report Date: 11/03/17

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C-SIM(M)
Analytical Date: 11/02/17 08:38
Analyst: MM

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS-SIM - Westborough Lab for sample(s): 01 Batch: WG1058871-5					
1,4-Dioxane	ND		ug/l	3.0	--

Project Name: SOUTH STATION
Project Number: 12287-200
Lab Number: L1739283
Report Date: 11/03/17

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 11/02/17 08:38
Analyst: MM

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01 Batch: WG1058872-5					
Methylene chloride	ND		ug/l	3.0	--
1,1-Dichloroethane	ND		ug/l	0.75	--
Chloroform	ND		ug/l	0.75	--
Carbon tetrachloride	ND		ug/l	0.50	--
1,2-Dichloropropane	ND		ug/l	1.8	--
Dibromochloromethane	ND		ug/l	0.50	--
1,1,2-Trichloroethane	ND		ug/l	0.75	--
Tetrachloroethene	ND		ug/l	0.50	--
Chlorobenzene	ND		ug/l	0.50	--
Trichlorofluoromethane	ND		ug/l	2.5	--
1,2-Dichloroethane	ND		ug/l	0.50	--
1,1,1-Trichloroethane	ND		ug/l	0.50	--
Bromodichloromethane	ND		ug/l	0.50	--
trans-1,3-Dichloropropene	ND		ug/l	0.50	--
cis-1,3-Dichloropropene	ND		ug/l	0.50	--
1,3-Dichloropropene, Total	ND		ug/l	0.50	--
1,1-Dichloropropene	ND		ug/l	2.5	--
Bromoform	ND		ug/l	2.0	--
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	--
Benzene	ND		ug/l	0.50	--
Toluene	ND		ug/l	0.75	--
Ethylbenzene	ND		ug/l	0.50	--
Chloromethane	ND		ug/l	2.5	--
Bromomethane	ND		ug/l	1.0	--
Vinyl chloride	ND		ug/l	1.0	--
Chloroethane	ND		ug/l	1.0	--
1,1-Dichloroethene	ND		ug/l	0.50	--
1,2-Dichloroethene, Total	ND		ug/l	0.50	--
Trichloroethene	ND		ug/l	0.50	--

Project Name: SOUTH STATION
Project Number: 12287-200
Lab Number: L1739283
Report Date: 11/03/17

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 11/02/17 08:38
Analyst: MM

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01 Batch: WG1058872-5					
1,2-Dichlorobenzene	ND		ug/l	2.5	--
1,3-Dichlorobenzene	ND		ug/l	2.5	--
1,4-Dichlorobenzene	ND		ug/l	2.5	--
Methyl tert butyl ether	ND		ug/l	1.0	--
p/m-Xylene	ND		ug/l	1.0	--
o-Xylene	ND		ug/l	1.0	--
Xylenes, Total	ND		ug/l	1.0	--
cis-1,2-Dichloroethene	ND		ug/l	0.50	--
Dibromomethane	ND		ug/l	5.0	--
1,4-Dichlorobutane	ND		ug/l	5.0	--
1,2,3-Trichloropropane	ND		ug/l	5.0	--
Styrene	ND		ug/l	1.0	--
Dichlorodifluoromethane	ND		ug/l	5.0	--
Acetone	ND		ug/l	5.0	--
Carbon disulfide	ND		ug/l	5.0	--
2-Butanone	ND		ug/l	5.0	--
Vinyl acetate	ND		ug/l	5.0	--
4-Methyl-2-pentanone	ND		ug/l	5.0	--
2-Hexanone	ND		ug/l	5.0	--
Ethyl methacrylate	ND		ug/l	5.0	--
Acrylonitrile	ND		ug/l	5.0	--
Bromochloromethane	ND		ug/l	2.5	--
Tetrahydrofuran	ND		ug/l	5.0	--
2,2-Dichloropropane	ND		ug/l	2.5	--
1,2-Dibromoethane	ND		ug/l	2.0	--
1,3-Dichloropropane	ND		ug/l	2.5	--
1,1,1,2-Tetrachloroethane	ND		ug/l	0.50	--
Bromobenzene	ND		ug/l	2.5	--
n-Butylbenzene	ND		ug/l	0.50	--

Project Name: SOUTH STATION
Project Number: 12287-200
Lab Number: L1739283
Report Date: 11/03/17

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 11/02/17 08:38
Analyst: MM

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01 Batch: WG1058872-5					
sec-Butylbenzene	ND		ug/l	0.50	--
tert-Butylbenzene	ND		ug/l	2.5	--
o-Chlorotoluene	ND		ug/l	2.5	--
p-Chlorotoluene	ND		ug/l	2.5	--
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	--
Hexachlorobutadiene	ND		ug/l	0.50	--
Isopropylbenzene	ND		ug/l	0.50	--
p-Isopropyltoluene	ND		ug/l	0.50	--
Naphthalene	ND		ug/l	2.5	--
n-Propylbenzene	ND		ug/l	0.50	--
1,2,3-Trichlorobenzene	ND		ug/l	2.5	--
1,2,4-Trichlorobenzene	ND		ug/l	2.5	--
1,3,5-Trimethylbenzene	ND		ug/l	2.5	--
1,2,4-Trimethylbenzene	ND		ug/l	2.5	--
trans-1,4-Dichloro-2-butene	ND		ug/l	2.5	--
Ethyl ether	ND		ug/l	2.5	--
Tert-Butyl Alcohol	ND		ug/l	10	--
Tertiary-Amyl Methyl Ether	ND		ug/l	2.0	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	102		70-130
Toluene-d8	100		70-130
4-Bromofluorobenzene	96		70-130
Dibromofluoromethane	107		70-130

Project Name: SOUTH STATION
Project Number: 12287-200

Lab Number: L1739283
Report Date: 11/03/17

Method Blank Analysis
Batch Quality Control

Analytical Method: 14,504.1
Analytical Date: 11/02/17 09:26
Analyst: NS

Extraction Method: EPA 504.1
Extraction Date: 11/02/17 09:00

Parameter	Result	Qualifier	Units	RL	MDL	
Microextractables by GC - Westborough Lab for sample(s): 01 Batch: WG1058876-1						
1,2-Dibromoethane	ND		ug/l	0.010	--	A
1,2-Dibromo-3-chloropropane	ND		ug/l	0.010	--	A

Lab Control Sample Analysis

Batch Quality Control

Project Name: SOUTH STATION

Project Number: 12287-200

Lab Number: L1739283

Report Date: 11/03/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS-SIM - Westborough Lab Associated sample(s): 01 Batch: WG1058871-3 WG1058871-4								
1,4-Dioxane	86		100		70-130	15		25

Lab Control Sample Analysis

Batch Quality Control

Project Name: SOUTH STATION

Project Number: 12287-200

Lab Number: L1739283

Report Date: 11/03/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01 Batch: WG1058872-3 WG1058872-4								
Methylene chloride	86		86		70-130	0		20
1,1-Dichloroethane	100		96		70-130	4		20
Chloroform	100		100		70-130	0		20
Carbon tetrachloride	93		94		63-132	1		20
1,2-Dichloropropane	93		97		70-130	4		20
Dibromochloromethane	98		95		63-130	3		20
1,1,2-Trichloroethane	100		100		70-130	0		20
Tetrachloroethene	95		91		70-130	4		20
Chlorobenzene	95		94		75-130	1		25
Trichlorofluoromethane	89		85		62-150	5		20
1,2-Dichloroethane	99		100		70-130	1		20
1,1,1-Trichloroethane	92		98		67-130	6		20
Bromodichloromethane	85		91		67-130	7		20
trans-1,3-Dichloropropene	98		100		70-130	2		20
cis-1,3-Dichloropropene	85		92		70-130	8		20
1,1-Dichloropropene	95		96		70-130	1		20
Bromoform	85		86		54-136	1		20
1,1,2,2-Tetrachloroethane	98		99		67-130	1		20
Benzene	94		94		70-130	0		25
Toluene	99		100		70-130	1		25
Ethylbenzene	95		94		70-130	1		20
Chloromethane	78		78		64-130	0		20
Bromomethane	71		80		39-139	12		20

Lab Control Sample Analysis
Batch Quality Control

Project Name: SOUTH STATION
Project Number: 12287-200

Lab Number: L1739283
Report Date: 11/03/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01 Batch: WG1058872-3 WG1058872-4								
Vinyl chloride	88		86		55-140	2		20
Chloroethane	95		85		55-138	11		20
1,1-Dichloroethene	85		86		61-145	1		25
Trichloroethene	94		94		70-130	0		25
1,2-Dichlorobenzene	100		99		70-130	1		20
1,3-Dichlorobenzene	97		99		70-130	2		20
1,4-Dichlorobenzene	94		97		70-130	3		20
Methyl tert butyl ether	85		86		63-130	1		20
p/m-Xylene	95		95		70-130	0		20
o-Xylene	100		100		70-130	0		20
cis-1,2-Dichloroethene	95		96		70-130	1		20
Dibromomethane	100		100		70-130	0		20
1,4-Dichlorobutane	95		99		70-130	4		20
1,2,3-Trichloropropane	97		98		64-130	1		20
Styrene	100		100		70-130	0		20
Dichlorodifluoromethane	78		82		36-147	5		20
Acetone	98		96		58-148	2		20
Carbon disulfide	79		78		51-130	1		20
2-Butanone	110		110		63-138	0		20
Vinyl acetate	110		110		70-130	0		20
4-Methyl-2-pentanone	100		110		59-130	10		20
2-Hexanone	110		100		57-130	10		20
Ethyl methacrylate	110		100		70-130	10		20

Lab Control Sample Analysis
Batch Quality Control

Project Name: SOUTH STATION
Project Number: 12287-200

Lab Number: L1739283
Report Date: 11/03/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01 Batch: WG1058872-3 WG1058872-4								
Acrylonitrile	110		110		70-130	0		20
Bromochloromethane	92		93		70-130	1		20
Tetrahydrofuran	110		120		58-130	9		20
2,2-Dichloropropane	100		100		63-133	0		20
1,2-Dibromoethane	91		97		70-130	6		20
1,3-Dichloropropane	98		100		70-130	2		20
1,1,1,2-Tetrachloroethane	89		91		64-130	2		20
Bromobenzene	90		88		70-130	2		20
n-Butylbenzene	91		95		53-136	4		20
sec-Butylbenzene	92		89		70-130	3		20
tert-Butylbenzene	89		85		70-130	5		20
o-Chlorotoluene	91		91		70-130	0		20
p-Chlorotoluene	94		94		70-130	0		20
1,2-Dibromo-3-chloropropane	97		97		41-144	0		20
Hexachlorobutadiene	98		96		63-130	2		20
Isopropylbenzene	88		88		70-130	0		20
p-Isopropyltoluene	93		92		70-130	1		20
Naphthalene	88		89		70-130	1		20
n-Propylbenzene	89		90		69-130	1		20
1,2,3-Trichlorobenzene	95		92		70-130	3		20
1,2,4-Trichlorobenzene	96		88		70-130	9		20
1,3,5-Trimethylbenzene	93		88		64-130	6		20
1,2,4-Trimethylbenzene	95		93		70-130	2		20

Lab Control Sample Analysis
Batch Quality Control

Project Name: SOUTH STATION
Project Number: 12287-200

Lab Number: L1739283
Report Date: 11/03/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01 Batch: WG1058872-3 WG1058872-4								
trans-1,4-Dichloro-2-butene	94		95		70-130	1		20
Ethyl ether	91		86		59-134	6		20
Tert-Butyl Alcohol	86		92		70-130	7		20
Tertiary-Amyl Methyl Ether	91		93		66-130	2		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	103		103		70-130
Toluene-d8	107		104		70-130
4-Bromofluorobenzene	99		95		70-130
Dibromofluoromethane	103		104		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: SOUTH STATION

Project Number: 12287-200

Lab Number: L1739283

Report Date: 11/03/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
Microextractables by GC - Westborough Lab	Associated sample(s): 01		Batch: WG1058876-2						
1,2-Dibromoethane	95		-		80-120	-			A
1,2-Dibromo-3-chloropropane	94		-		80-120	-			A

Matrix Spike Analysis

Batch Quality Control

Project Name: SOUTH STATION

Project Number: 12287-200

Lab Number: L1739283

Report Date: 11/03/17

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits	Column
Microextractables by GC - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1058876-3 QC Sample: L1739283-01 Client ID: HA-OW-4													
1,2-Dibromoethane	ND	0.257	0.253	98		-	-		80-120	-		20	A
1,2-Dibromo-3-chloropropane	ND	0.257	0.245	95		-	-		80-120	-		20	A

SEMIVOLATILES

Project Name: SOUTH STATION
Project Number: 12287-200
Lab Number: L1739283
Report Date: 11/03/17

SAMPLE RESULTS

Lab ID: L1739283-01
Client ID: HA-OW-4
Sample Location: SUMMER STREET

Matrix: Water
Analytical Method: 1,8270D
Analytical Date: 10/30/17 22:42
Analyst: RC

Date Collected: 10/27/17 10:55
Date Received: 10/27/17
Field Prep: Not Specified
Extraction Method: EPA 3510C
Extraction Date: 10/28/17 11:50

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Benzidine	ND		ug/l	20	--	1
1,2,4-Trichlorobenzene	ND		ug/l	5.0	--	1
Bis(2-chloroethyl)ether	ND		ug/l	2.0	--	1
1,2-Dichlorobenzene	ND		ug/l	2.0	--	1
1,3-Dichlorobenzene	ND		ug/l	2.0	--	1
1,4-Dichlorobenzene	ND		ug/l	2.0	--	1
3,3'-Dichlorobenzidine	ND		ug/l	5.0	--	1
2,4-Dinitrotoluene	ND		ug/l	5.0	--	1
2,6-Dinitrotoluene	ND		ug/l	5.0	--	1
Azobenzene	ND		ug/l	2.0	--	1
4-Chlorophenyl phenyl ether	ND		ug/l	2.0	--	1
4-Bromophenyl phenyl ether	ND		ug/l	2.0	--	1
Bis(2-chloroisopropyl)ether	ND		ug/l	2.0	--	1
Bis(2-chloroethoxy)methane	ND		ug/l	5.0	--	1
Hexachlorocyclopentadiene	ND		ug/l	20	--	1
Isophorone	ND		ug/l	5.0	--	1
Nitrobenzene	ND		ug/l	2.0	--	1
NDPA/DPA	ND		ug/l	2.0	--	1
n-Nitrosodi-n-propylamine	ND		ug/l	5.0	--	1
Bis(2-ethylhexyl)phthalate	ND		ug/l	3.0	--	1
Butyl benzyl phthalate	ND		ug/l	5.0	--	1
Di-n-butylphthalate	ND		ug/l	5.0	--	1
Di-n-octylphthalate	ND		ug/l	5.0	--	1
Diethyl phthalate	ND		ug/l	5.0	--	1
Dimethyl phthalate	ND		ug/l	5.0	--	1
Biphenyl	ND		ug/l	2.0	--	1
Aniline	ND		ug/l	2.0	--	1
4-Chloroaniline	ND		ug/l	5.0	--	1
2-Nitroaniline	ND		ug/l	5.0	--	1
3-Nitroaniline	ND		ug/l	5.0	--	1

Project Name: SOUTH STATION **Lab Number:** L1739283

Project Number: 12287-200 **Report Date:** 11/03/17

SAMPLE RESULTS

Lab ID: L1739283-01 Date Collected: 10/27/17 10:55

Client ID: HA-OW-4 Date Received: 10/27/17

Sample Location: SUMMER STREET Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
4-Nitroaniline	ND		ug/l	5.0	--	1
Dibenzofuran	ND		ug/l	2.0	--	1
n-Nitrosodimethylamine	ND		ug/l	2.0	--	1
2,4,6-Trichlorophenol	ND		ug/l	5.0	--	1
p-Chloro-m-cresol	ND		ug/l	2.0	--	1
2-Chlorophenol	ND		ug/l	2.0	--	1
2,4-Dichlorophenol	ND		ug/l	5.0	--	1
2,4-Dimethylphenol	ND		ug/l	5.0	--	1
2-Nitrophenol	ND		ug/l	10	--	1
4-Nitrophenol	ND		ug/l	10	--	1
2,4-Dinitrophenol	ND		ug/l	20	--	1
4,6-Dinitro-o-cresol	ND		ug/l	10	--	1
Phenol	ND		ug/l	5.0	--	1
2-Methylphenol	ND		ug/l	5.0	--	1
3-Methylphenol/4-Methylphenol	ND		ug/l	5.0	--	1
2,4,5-Trichlorophenol	ND		ug/l	5.0	--	1
Benzoic Acid	ND		ug/l	50	--	1
Benzyl Alcohol	ND		ug/l	2.0	--	1
Carbazole	ND		ug/l	2.0	--	1
Pyridine	ND		ug/l	3.5	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	53		21-120
Phenol-d6	36		10-120
Nitrobenzene-d5	79		23-120
2-Fluorobiphenyl	75		15-120
2,4,6-Tribromophenol	85		10-120
4-Terphenyl-d14	82		41-149

Project Name: SOUTH STATION
Project Number: 12287-200
Lab Number: L1739283
Report Date: 11/03/17

SAMPLE RESULTS

Lab ID: L1739283-01
Client ID: HA-OW-4
Sample Location: SUMMER STREET

Matrix: Water
Analytical Method: 1,8270D-SIM
Analytical Date: 10/30/17 17:06
Analyst: DV

Date Collected: 10/27/17 10:55
Date Received: 10/27/17
Field Prep: Not Specified
Extraction Method: EPA 3510C
Extraction Date: 10/28/17 12:02

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Acenaphthene	0.88		ug/l	0.10	--	1
2-Chloronaphthalene	ND		ug/l	0.20	--	1
Fluoranthene	0.76		ug/l	0.10	--	1
Hexachlorobutadiene	ND		ug/l	0.50	--	1
Naphthalene	ND		ug/l	0.10	--	1
Benzo(a)anthracene	ND		ug/l	0.10	--	1
Benzo(a)pyrene	ND		ug/l	0.10	--	1
Benzo(b)fluoranthene	ND		ug/l	0.10	--	1
Benzo(k)fluoranthene	ND		ug/l	0.10	--	1
Chrysene	ND		ug/l	0.10	--	1
Acenaphthylene	ND		ug/l	0.10	--	1
Anthracene	ND		ug/l	0.10	--	1
Benzo(ghi)perylene	ND		ug/l	0.10	--	1
Fluorene	ND		ug/l	0.10	--	1
Phenanthrene	0.20		ug/l	0.10	--	1
Dibenzo(a,h)anthracene	ND		ug/l	0.10	--	1
Indeno(1,2,3-cd)pyrene	ND		ug/l	0.10	--	1
Pyrene	1.0		ug/l	0.10	--	1
1-Methylnaphthalene	ND		ug/l	0.10	--	1
2-Methylnaphthalene	ND		ug/l	0.10	--	1
Pentachlorophenol	ND		ug/l	0.80	--	1
Hexachlorobenzene	ND		ug/l	0.80	--	1
Hexachloroethane	ND		ug/l	0.80	--	1

Project Name: SOUTH STATION
Lab Number: L1739283
Project Number: 12287-200
Report Date: 11/03/17

SAMPLE RESULTS

Lab ID: L1739283-01
Client ID: HA-OW-4
Sample Location: SUMMER STREET
Date Collected: 10/27/17 10:55
Date Received: 10/27/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor

Semivolatile Organics by GC/MS-SIM - Westborough Lab

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	47		21-120
Phenol-d6	33		10-120
Nitrobenzene-d5	83		23-120
2-Fluorobiphenyl	69		15-120
2,4,6-Tribromophenol	78		10-120
4-Terphenyl-d14	68		41-149

Project Name: SOUTH STATION
Project Number: 12287-200
Lab Number: L1739283
Report Date: 11/03/17

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D
Analytical Date: 10/29/17 14:47
Analyst: EK

Extraction Method: EPA 3510C
Extraction Date: 10/28/17 11:50

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 01 Batch: WG1057346-1					
Acenaphthene	ND		ug/l	2.0	--
Benzidine	ND		ug/l	20	--
1,2,4-Trichlorobenzene	ND		ug/l	5.0	--
Hexachlorobenzene	ND		ug/l	2.0	--
Bis(2-chloroethyl)ether	ND		ug/l	2.0	--
2-Chloronaphthalene	ND		ug/l	2.0	--
1,2-Dichlorobenzene	ND		ug/l	2.0	--
1,3-Dichlorobenzene	ND		ug/l	2.0	--
1,4-Dichlorobenzene	ND		ug/l	2.0	--
3,3'-Dichlorobenzidine	ND		ug/l	5.0	--
2,4-Dinitrotoluene	ND		ug/l	5.0	--
2,6-Dinitrotoluene	ND		ug/l	5.0	--
Azobenzene	ND		ug/l	2.0	--
Fluoranthene	ND		ug/l	2.0	--
4-Chlorophenyl phenyl ether	ND		ug/l	2.0	--
4-Bromophenyl phenyl ether	ND		ug/l	2.0	--
Bis(2-chloroisopropyl)ether	ND		ug/l	2.0	--
Bis(2-chloroethoxy)methane	ND		ug/l	5.0	--
Hexachlorobutadiene	ND		ug/l	2.0	--
Hexachlorocyclopentadiene	ND		ug/l	20	--
Hexachloroethane	ND		ug/l	2.0	--
Isophorone	ND		ug/l	5.0	--
Naphthalene	ND		ug/l	2.0	--
Nitrobenzene	ND		ug/l	2.0	--
NDPA/DPA	ND		ug/l	2.0	--
n-Nitrosodi-n-propylamine	ND		ug/l	5.0	--
Bis(2-ethylhexyl)phthalate	ND		ug/l	3.0	--
Butyl benzyl phthalate	ND		ug/l	5.0	--
Di-n-butylphthalate	ND		ug/l	5.0	--

Project Name: SOUTH STATION
Project Number: 12287-200

Lab Number: L1739283
Report Date: 11/03/17

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D
Analytical Date: 10/29/17 14:47
Analyst: EK

Extraction Method: EPA 3510C
Extraction Date: 10/28/17 11:50

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 01 Batch: WG1057346-1					
Di-n-octylphthalate	ND		ug/l	5.0	--
Diethyl phthalate	ND		ug/l	5.0	--
Dimethyl phthalate	ND		ug/l	5.0	--
Benzo(a)anthracene	ND		ug/l	2.0	--
Benzo(a)pyrene	ND		ug/l	2.0	--
Benzo(b)fluoranthene	ND		ug/l	2.0	--
Benzo(k)fluoranthene	ND		ug/l	2.0	--
Chrysene	ND		ug/l	2.0	--
Acenaphthylene	ND		ug/l	2.0	--
Anthracene	ND		ug/l	2.0	--
Benzo(ghi)perylene	ND		ug/l	2.0	--
Fluorene	ND		ug/l	2.0	--
Phenanthrene	ND		ug/l	2.0	--
Dibenzo(a,h)anthracene	ND		ug/l	2.0	--
Indeno(1,2,3-cd)pyrene	ND		ug/l	2.0	--
Pyrene	ND		ug/l	2.0	--
Biphenyl	ND		ug/l	2.0	--
Aniline	ND		ug/l	2.0	--
4-Chloroaniline	ND		ug/l	5.0	--
1-Methylnaphthalene	ND		ug/l	2.0	--
2-Nitroaniline	ND		ug/l	5.0	--
3-Nitroaniline	ND		ug/l	5.0	--
4-Nitroaniline	ND		ug/l	5.0	--
Dibenzofuran	ND		ug/l	2.0	--
2-Methylnaphthalene	ND		ug/l	2.0	--
n-Nitrosodimethylamine	ND		ug/l	2.0	--
2,4,6-Trichlorophenol	ND		ug/l	5.0	--
p-Chloro-m-cresol	ND		ug/l	2.0	--
2-Chlorophenol	ND		ug/l	2.0	--

Project Name: SOUTH STATION
Project Number: 12287-200
Lab Number: L1739283
Report Date: 11/03/17

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D
Analytical Date: 10/29/17 14:47
Analyst: EK

Extraction Method: EPA 3510C
Extraction Date: 10/28/17 11:50

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 01 Batch: WG1057346-1					
2,4-Dichlorophenol	ND		ug/l	5.0	--
2,4-Dimethylphenol	ND		ug/l	5.0	--
2-Nitrophenol	ND		ug/l	10	--
4-Nitrophenol	ND		ug/l	10	--
2,4-Dinitrophenol	ND		ug/l	20	--
4,6-Dinitro-o-cresol	ND		ug/l	10	--
Pentachlorophenol	ND		ug/l	10	--
Phenol	ND		ug/l	5.0	--
2-Methylphenol	ND		ug/l	5.0	--
3-Methylphenol/4-Methylphenol	ND		ug/l	5.0	--
2,4,5-Trichlorophenol	ND		ug/l	5.0	--
Benzoic Acid	ND		ug/l	50	--
Benzyl Alcohol	ND		ug/l	2.0	--
Carbazole	ND		ug/l	2.0	--
Pyridine	ND		ug/l	3.5	--

Tentatively Identified Compounds

Total TIC Compounds	7.45	J	ug/l
Unknown	7.45	J	ug/l

Project Name: SOUTH STATION
Project Number: 12287-200
Lab Number: L1739283
Report Date: 11/03/17

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D
Analytical Date: 10/29/17 14:47
Analyst: EK

Extraction Method: EPA 3510C
Extraction Date: 10/28/17 11:50

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 01 Batch: WG1057346-1					

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	45		21-120
Phenol-d6	30		10-120
Nitrobenzene-d5	65		23-120
2-Fluorobiphenyl	62		15-120
2,4,6-Tribromophenol	65		10-120
4-Terphenyl-d14	72		41-149

Project Name: SOUTH STATION
Project Number: 12287-200

Lab Number: L1739283
Report Date: 11/03/17

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D-SIM
Analytical Date: 10/29/17 09:03
Analyst: DV

Extraction Method: EPA 3510C
Extraction Date: 10/28/17 12:02

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS-SIM - Westborough Lab for sample(s): 01 Batch: WG1057350-1					
Acenaphthene	ND		ug/l	0.10	--
2-Chloronaphthalene	ND		ug/l	0.20	--
Fluoranthene	ND		ug/l	0.10	--
Hexachlorobutadiene	ND		ug/l	0.50	--
Naphthalene	ND		ug/l	0.10	--
Benzo(a)anthracene	ND		ug/l	0.10	--
Benzo(a)pyrene	ND		ug/l	0.10	--
Benzo(b)fluoranthene	ND		ug/l	0.10	--
Benzo(k)fluoranthene	ND		ug/l	0.10	--
Chrysene	ND		ug/l	0.10	--
Acenaphthylene	ND		ug/l	0.10	--
Anthracene	ND		ug/l	0.10	--
Benzo(ghi)perylene	ND		ug/l	0.10	--
Fluorene	ND		ug/l	0.10	--
Phenanthrene	ND		ug/l	0.10	--
Dibenzo(a,h)anthracene	ND		ug/l	0.10	--
Indeno(1,2,3-cd)pyrene	ND		ug/l	0.10	--
Pyrene	ND		ug/l	0.10	--
1-Methylnaphthalene	ND		ug/l	0.10	--
2-Methylnaphthalene	ND		ug/l	0.10	--
Pentachlorophenol	ND		ug/l	0.80	--
Hexachlorobenzene	ND		ug/l	0.80	--
Hexachloroethane	ND		ug/l	0.80	--

Project Name: SOUTH STATION
Project Number: 12287-200

Lab Number: L1739283
Report Date: 11/03/17

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D-SIM
Analytical Date: 10/29/17 09:03
Analyst: DV

Extraction Method: EPA 3510C
Extraction Date: 10/28/17 12:02

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS-SIM - Westborough Lab for sample(s): 01 Batch: WG1057350-1					

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	40		21-120
Phenol-d6	28		10-120
Nitrobenzene-d5	68		23-120
2-Fluorobiphenyl	89		15-120
2,4,6-Tribromophenol	99		10-120
4-Terphenyl-d14	98		41-149

Lab Control Sample Analysis
Batch Quality Control

Project Name: SOUTH STATION
Project Number: 12287-200

Lab Number: L1739283
Report Date: 11/03/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01 Batch: WG1057346-2 WG1057346-3								
Acenaphthene	84		67		37-111	23		30
Benzidine	**7**	Q	**2**	Q	10-75	**100**	Q	30
1,2,4-Trichlorobenzene	75		72		39-98	4		30
Hexachlorobenzene	89		73		40-140	20		30
Bis(2-chloroethyl)ether	78		76		40-140	3		30
2-Chloronaphthalene	88		72		40-140	20		30
1,2-Dichlorobenzene	67		70		40-140	4		30
1,3-Dichlorobenzene	63		68		40-140	8		30
1,4-Dichlorobenzene	64		67		36-97	5		30
3,3'-Dichlorobenzidine	77		54		40-140	**35**	Q	30
2,4-Dinitrotoluene	106		83		48-143	24		30
2,6-Dinitrotoluene	105		82		40-140	25		30
Azobenzene	98		77		40-140	24		30
Fluoranthene	98		76		40-140	25		30
4-Chlorophenyl phenyl ether	93		75		40-140	21		30
4-Bromophenyl phenyl ether	92		73		40-140	23		30
Bis(2-chloroisopropyl)ether	83		80		40-140	4		30
Bis(2-chloroethoxy)methane	94		79		40-140	17		30
Hexachlorobutadiene	71		67		40-140	6		30
Hexachlorocyclopentadiene	72		68		40-140	6		30
Hexachloroethane	66		69		40-140	4		30
Isophorone	95		82		40-140	15		30
Naphthalene	76		70		40-140	8		30

Lab Control Sample Analysis
Batch Quality Control

Project Name: SOUTH STATION
Project Number: 12287-200

Lab Number: L1739283
Report Date: 11/03/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01 Batch: WG1057346-2 WG1057346-3								
Nitrobenzene	86		79		40-140	8		30
NDPA/DPA	95		75		40-140	24		30
n-Nitrosodi-n-propylamine	99		84		29-132	16		30
Bis(2-ethylhexyl)phthalate	125		90		40-140	**33**	Q	30
Butyl benzyl phthalate	119		91		40-140	27		30
Di-n-butylphthalate	111		84		40-140	28		30
Di-n-octylphthalate	125		90		40-140	**33**	Q	30
Diethyl phthalate	99		78		40-140	24		30
Dimethyl phthalate	96		76		40-140	23		30
Benzo(a)anthracene	99		73		40-140	30		30
Benzo(a)pyrene	108		81		40-140	29		30
Benzo(b)fluoranthene	107		77		40-140	**33**	Q	30
Benzo(k)fluoranthene	101		78		40-140	26		30
Chrysene	98		71		40-140	**32**	Q	30
Acenaphthylene	91		75		45-123	19		30
Anthracene	96		75		40-140	25		30
Benzo(ghi)perylene	102		74		40-140	**32**	Q	30
Fluorene	90		73		40-140	21		30
Phenanthrene	93		72		40-140	25		30
Dibenzo(a,h)anthracene	102		74		40-140	**32**	Q	30
Indeno(1,2,3-cd)pyrene	103		75		40-140	**31**	Q	30
Pyrene	94		71		26-127	28		30
Biphenyl	74		60		40-140	21		30

Lab Control Sample Analysis
Batch Quality Control

Project Name: SOUTH STATION
Project Number: 12287-200

Lab Number: L1739283
Report Date: 11/03/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01 Batch: WG1057346-2 WG1057346-3								
Aniline	52		**29**	Q	40-140	**57**	Q	30
4-Chloroaniline	68		50		40-140	**31**	Q	30
1-Methylnaphthalene	83		72		41-103	14		30
2-Nitroaniline	108		85		52-143	24		30
3-Nitroaniline	86		67		25-145	25		30
4-Nitroaniline	99		76		51-143	26		30
Dibenzofuran	90		72		40-140	22		30
2-Methylnaphthalene	82		71		40-140	14		30
n-Nitrosodimethylamine	45		45		22-74	0		30
2,4,6-Trichlorophenol	100		80		30-130	22		30
p-Chloro-m-cresol	**102**	Q	82		23-97	22		30
2-Chlorophenol	79		80		27-123	1		30
2,4-Dichlorophenol	97		83		30-130	16		30
2,4-Dimethylphenol	88		86		30-130	2		30
2-Nitrophenol	95		86		30-130	10		30
4-Nitrophenol	58		53		10-80	9		30
2,4-Dinitrophenol	93		71		20-130	27		30
4,6-Dinitro-o-cresol	97		77		20-164	23		30
Pentachlorophenol	86		68		9-103	23		30
Phenol	42		46		12-110	9		30
2-Methylphenol	79		75		30-130	5		30
3-Methylphenol/4-Methylphenol	77		73		30-130	5		30
2,4,5-Trichlorophenol	102		82		30-130	22		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: SOUTH STATION

Project Number: 12287-200

Lab Number: L1739283

Report Date: 11/03/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01 Batch: WG1057346-2 WG1057346-3								
Benzoic Acid	28		29		10-164	4		30
Benzyl Alcohol	78		67		26-116	15		30
Carbazole	98		76		55-144	25		30
Pyridine	32		**6**	Q	10-66	**135**	Q	30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2-Fluorophenol	43		50		21-120
Phenol-d6	33		37		10-120
Nitrobenzene-d5	71		68		23-120
2-Fluorobiphenyl	69		61		15-120
2,4,6-Tribromophenol	80		63		10-120
4-Terphenyl-d14	76		60		41-149

Lab Control Sample Analysis

Batch Quality Control

Project Name: SOUTH STATION

Project Number: 12287-200

Lab Number: L1739283

Report Date: 11/03/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS-SIM - Westborough Lab Associated sample(s): 01 Batch: WG1057350-2 WG1057350-3								
Acenaphthene	100		110		37-111	10		40
2-Chloronaphthalene	102		113		40-140	10		40
Fluoranthene	114		124		40-140	8		40
Hexachlorobutadiene	101		115		40-140	13		40
Naphthalene	95		107		40-140	12		40
Benzo(a)anthracene	117		127		40-140	8		40
Benzo(a)pyrene	108		118		40-140	9		40
Benzo(b)fluoranthene	117		127		40-140	8		40
Benzo(k)fluoranthene	113		124		40-140	9		40
Chrysene	123		132		40-140	7		40
Acenaphthylene	107		115		40-140	7		40
Anthracene	106		115		40-140	8		40
Benzo(ghi)perylene	122		130		40-140	6		40
Fluorene	112		122		40-140	9		40
Phenanthrene	104		113		40-140	8		40
Dibenzo(a,h)anthracene	121		131		40-140	8		40
Indeno(1,2,3-cd)pyrene	123		133		40-140	8		40
Pyrene	110		121		26-127	10		40
1-Methylnaphthalene	105		117		40-140	11		40
2-Methylnaphthalene	102		115		40-140	12		40
Pentachlorophenol	99		**106**	Q	9-103	7		40
Hexachlorobenzene	120		130		40-140	8		40
Hexachloroethane	77		88		40-140	13		40

Lab Control Sample Analysis
Batch Quality Control

Project Name: SOUTH STATION
Project Number: 12287-200

Lab Number: L1739283
Report Date: 11/03/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS-SIM - Westborough Lab Associated sample(s): 01 Batch: WG1057350-2 WG1057350-3								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2-Fluorophenol	43		54		21-120
Phenol-d6	30		40		10-120
Nitrobenzene-d5	68		76		23-120
2-Fluorobiphenyl	92		101		15-120
2,4,6-Tribromophenol	111		119		10-120
4-Terphenyl-d14	96		105		41-149

PCBS

Project Name: SOUTH STATION
Project Number: 12287-200

Lab Number: L1739283
Report Date: 11/03/17

SAMPLE RESULTS

Lab ID: L1739283-01
Client ID: HA-OW-4
Sample Location: SUMMER STREET

Matrix: Water
Analytical Method: 5,608
Analytical Date: 11/03/17 02:42
Analyst: JA

Date Collected: 10/27/17 10:55
Date Received: 10/27/17
Field Prep: Not Specified
Extraction Method: EPA 608
Extraction Date: 10/29/17 11:48
Cleanup Method: EPA 3665A
Cleanup Date: 10/29/17
Cleanup Method: EPA 3660B
Cleanup Date: 10/30/17

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Polychlorinated Biphenyls by GC - Westborough Lab							
Aroclor 1016	ND		ug/l	0.250	--	1	A
Aroclor 1221	ND		ug/l	0.250	--	1	A
Aroclor 1232	ND		ug/l	0.250	--	1	A
Aroclor 1242	ND		ug/l	0.250	--	1	A
Aroclor 1248	ND		ug/l	0.250	--	1	A
Aroclor 1254	ND		ug/l	0.250	--	1	A
Aroclor 1260	ND		ug/l	0.200	--	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	83		30-150	A
Decachlorobiphenyl	91		30-150	A

Project Name: SOUTH STATION
Project Number: 12287-200
Lab Number: L1739283
Report Date: 11/03/17

Method Blank Analysis
Batch Quality Control

Analytical Method: 5,608
Analytical Date: 11/03/17 01:03
Analyst: JA

Extraction Method: EPA 608
Extraction Date: 10/29/17 11:48
Cleanup Method: EPA 3665A
Cleanup Date: 10/29/17
Cleanup Method: EPA 3660B
Cleanup Date: 10/30/17

Parameter	Result	Qualifier	Units	RL	MDL	Column
Polychlorinated Biphenyls by GC - Westborough Lab for sample(s): 01 Batch: WG1057474-1						
Aroclor 1016	ND		ug/l	0.250	--	A
Aroclor 1221	ND		ug/l	0.250	--	A
Aroclor 1232	ND		ug/l	0.250	--	A
Aroclor 1242	ND		ug/l	0.250	--	A
Aroclor 1248	ND		ug/l	0.250	--	A
Aroclor 1254	ND		ug/l	0.250	--	A
Aroclor 1260	ND		ug/l	0.200	--	A

Surrogate	%Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	72		30-150	A
Decachlorobiphenyl	80		30-150	A

Lab Control Sample Analysis

Batch Quality Control

Project Name: SOUTH STATION

Project Number: 12287-200

Lab Number: L1739283

Report Date: 11/03/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
Polychlorinated Biphenyls by GC - Westborough Lab Associated sample(s): 01 Batch: WG1057474-2									
Aroclor 1016	76		-		30-150	-		30	A
Aroclor 1260	73		-		30-150	-		30	A

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	74				30-150	A
Decachlorobiphenyl	75				30-150	A

Matrix Spike Analysis

Batch Quality Control

Project Name: SOUTH STATION

Project Number: 12287-200

Lab Number: L1739283

Report Date: 11/03/17

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits	Column
Polychlorinated Biphenyls by GC - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1057474-3 QC Sample: L1734693-37 Client ID: MS Sample													
Aroclor 1016	ND	3.12	2.21	71		-	-		40-126	-		30	A
Aroclor 1260	ND	3.12	2.19	70		-	-		40-127	-		30	A

Surrogate	MS % Recovery	MS Qualifier	MSD % Recovery	MSD Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	73				30-150	A
Decachlorobiphenyl	74				30-150	A

Lab Duplicate Analysis
Batch Quality Control

Project Name: SOUTH STATION
Project Number: 12287-200

Lab Number: L1739283
Report Date: 11/03/17

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits	
Polychlorinated Biphenyls by GC - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1057474-4 QC Sample: L1734693-37 Client ID: DUP Sample							
Aroclor 1016	ND	ND	ug/l	NC		30	A
Aroclor 1221	ND	ND	ug/l	NC		30	A
Aroclor 1232	ND	ND	ug/l	NC		30	A
Aroclor 1242	ND	ND	ug/l	NC		30	A
Aroclor 1248	ND	ND	ug/l	NC		30	A
Aroclor 1254	ND	ND	ug/l	NC		30	A
Aroclor 1260	ND	ND	ug/l	NC		30	A

Surrogate	%Recovery	Qualifier	%Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	74		61		30-150	A
Decachlorobiphenyl	82		71		30-150	A

METALS

Project Name: SOUTH STATION
Project Number: 12287-200
Lab Number: L1739283
Report Date: 11/03/17

SAMPLE RESULTS

Lab ID: L1739283-01
Client ID: HA-OW-4
Sample Location: SUMMER STREET
Matrix: Water
Date Collected: 10/27/17 10:55
Date Received: 10/27/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Antimony, Total	ND		mg/l	0.00400	--	1	10/30/17 11:30	10/31/17 11:53	EPA 3005A	3,200.8	AM
Arsenic, Total	ND		mg/l	0.00100	--	1	10/30/17 11:30	10/31/17 11:53	EPA 3005A	3,200.8	AM
Cadmium, Total	ND		mg/l	0.00020	--	1	10/30/17 11:30	10/31/17 11:53	EPA 3005A	3,200.8	AM
Chromium, Total	0.00167		mg/l	0.00100	--	1	10/30/17 11:30	10/31/17 11:53	EPA 3005A	3,200.8	AM
Copper, Total	ND		mg/l	0.00100	--	1	10/30/17 11:30	10/31/17 11:53	EPA 3005A	3,200.8	AM
Iron, Total	0.562		mg/l	0.050	--	1	10/30/17 11:30	10/30/17 17:44	EPA 3005A	19,200.7	AB
Lead, Total	0.00252		mg/l	0.00050	--	1	10/30/17 11:30	10/31/17 11:53	EPA 3005A	3,200.8	AM
Mercury, Total	ND		mg/l	0.00020	--	1	10/30/17 11:11	10/30/17 19:32	EPA 245.1	3,245.1	EA
Nickel, Total	0.00211		mg/l	0.00200	--	1	10/30/17 11:30	10/31/17 11:53	EPA 3005A	3,200.8	AM
Selenium, Total	ND		mg/l	0.00500	--	1	10/30/17 11:30	10/31/17 11:53	EPA 3005A	3,200.8	AM
Silver, Total	ND		mg/l	0.00040	--	1	10/30/17 11:30	10/31/17 11:53	EPA 3005A	3,200.8	AM
Zinc, Total	ND		mg/l	0.01000	--	1	10/30/17 11:30	10/31/17 11:53	EPA 3005A	3,200.8	AM
Total Hardness by SM 2340B - Mansfield Lab											
Hardness	458		mg/l	0.660	NA	1	10/30/17 11:30	10/30/17 17:44	EPA 3005A	19,200.7	AB
General Chemistry - Mansfield Lab											
Chromium, Trivalent	ND		mg/l	0.010	--	1		10/31/17 11:53	NA	107,-	

Project Name: SOUTH STATION
Project Number: 12287-200
Lab Number: L1739283
Report Date: 11/03/17

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01 Batch: WG1057621-1										
Antimony, Total	ND		mg/l	0.00400	--	1	10/30/17 11:30	10/31/17 10:21	3,200.8	AM
Arsenic, Total	ND		mg/l	0.0010	--	1	10/30/17 11:30	10/31/17 10:21	3,200.8	AM
Cadmium, Total	ND		mg/l	0.00020	--	1	10/30/17 11:30	10/31/17 10:21	3,200.8	AM
Chromium, Total	ND		mg/l	0.00100	--	1	10/30/17 11:30	10/31/17 10:21	3,200.8	AM
Copper, Total	ND		mg/l	0.00100	--	1	10/30/17 11:30	10/31/17 10:21	3,200.8	AM
Lead, Total	ND		mg/l	0.0005	--	1	10/30/17 11:30	10/31/17 10:21	3,200.8	AM
Nickel, Total	ND		mg/l	0.00200	--	1	10/30/17 11:30	10/31/17 10:21	3,200.8	AM
Selenium, Total	ND		mg/l	0.00500	--	1	10/30/17 11:30	10/31/17 10:21	3,200.8	AM
Silver, Total	ND		mg/l	0.00040	--	1	10/30/17 11:30	10/31/17 10:21	3,200.8	AM
Zinc, Total	ND		mg/l	0.01000	--	1	10/30/17 11:30	10/31/17 10:21	3,200.8	AM

Prep Information

Digestion Method: EPA 3005A

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01 Batch: WG1057626-1										
Iron, Total	ND		mg/l	0.050	--	1	10/30/17 11:30	10/30/17 15:28	19,200.7	PS

Prep Information

Digestion Method: EPA 3005A

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Hardness by SM 2340B - Mansfield Lab for sample(s): 01 Batch: WG1057626-1										
Hardness	ND		mg/l	0.660	NA	1	10/30/17 11:30	10/30/17 15:28	19,200.7	PS

Prep Information

Digestion Method: EPA 3005A

Project Name: SOUTH STATION
Project Number: 12287-200
Lab Number: L1739283
Report Date: 11/03/17

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01 Batch: WG1057634-1										
Mercury, Total	ND		mg/l	0.0002	--	1	10/30/17 11:11	10/30/17 18:49	3,245.1	EA

Prep Information

Digestion Method: EPA 245.1

Lab Control Sample Analysis

Batch Quality Control

Project Name: SOUTH STATION

Project Number: 12287-200

Lab Number: L1739283

Report Date: 11/03/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01 Batch: WG1057621-2								
Antimony, Total	99		-		85-115	-		
Arsenic, Total	101		-		85-115	-		
Cadmium, Total	**116**	Q	-		85-115	-		
Chromium, Total	101		-		85-115	-		
Copper, Total	101		-		85-115	-		
Lead, Total	105		-		85-115	-		
Nickel, Total	101		-		85-115	-		
Selenium, Total	112		-		85-115	-		
Silver, Total	100		-		85-115	-		
Zinc, Total	108		-		85-115	-		
Total Metals - Mansfield Lab Associated sample(s): 01 Batch: WG1057626-2								
Iron, Total	107		-		85-115	-		
Total Hardness by SM 2340B - Mansfield Lab Associated sample(s): 01 Batch: WG1057626-2								
Hardness	104		-		85-115	-		
Total Metals - Mansfield Lab Associated sample(s): 01 Batch: WG1057634-2								
Mercury, Total	109		-		85-115	-		

Matrix Spike Analysis
Batch Quality Control

Project Name: SOUTH STATION
Project Number: 12287-200

Lab Number: L1739283
Report Date: 11/03/17

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1057621-3 QC Sample: L1738919-01 Client ID: MS Sample												
Antimony, Total	ND	0.5	0.5094	102		-	-		70-130	-		20
Arsenic, Total	0.0044	0.12	0.1315	106		-	-		70-130	-		20
Cadmium, Total	ND	0.051	0.05920	116		-	-		70-130	-		20
Chromium, Total	0.00178	0.2	0.2035	101		-	-		70-130	-		20
Copper, Total	0.00332	0.25	0.2574	102		-	-		70-130	-		20
Lead, Total	0.00865	0.51	0.5398	104		-	-		70-130	-		20
Nickel, Total	ND	0.5	0.5100	102		-	-		70-130	-		20
Selenium, Total	ND	0.12	0.1382	115		-	-		70-130	-		20
Silver, Total	ND	0.05	0.04904	98		-	-		70-130	-		20
Zinc, Total	0.06628	0.5	0.5904	105		-	-		70-130	-		20
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1057621-5 QC Sample: L1739090-01 Client ID: MS Sample												
Antimony, Total	ND	0.5	0.4904	98		-	-		70-130	-		20
Arsenic, Total	ND	0.12	0.1254	104		-	-		70-130	-		20
Cadmium, Total	ND	0.051	0.05635	110		-	-		70-130	-		20
Chromium, Total	ND	0.2	0.1993	100		-	-		70-130	-		20
Copper, Total	0.0902	0.25	0.3418	101		-	-		70-130	-		20
Lead, Total	ND	0.51	0.5284	104		-	-		70-130	-		20
Nickel, Total	ND	0.5	0.4938	99		-	-		70-130	-		20
Selenium, Total	ND	0.12	0.1294	108		-	-		70-130	-		20
Silver, Total	ND	0.05	0.04870	97		-	-		70-130	-		20
Zinc, Total	0.0375	0.5	0.5690	106		-	-		70-130	-		20

Matrix Spike Analysis
Batch Quality Control

Project Name: SOUTH STATION
Project Number: 12287-200

Lab Number: L1739283
Report Date: 11/03/17

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	MSD Found	MSD %Recovery	Recovery Limits	RPD	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1057626-3 QC Sample: L1738919-01 Client ID: MS Sample									
Iron, Total	0.420	1	1.52	110	-	-	75-125	-	20
Total Hardness by SM 2340B - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1057626-3 QC Sample: L1738919-01 Client ID: MS Sample									
Hardness	254	66.2	314	91	-	-	75-125	-	20
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1057634-3 QC Sample: L1739256-01 Client ID: MS Sample									
Mercury, Total	ND	0.005	0.0047	95	-	-	70-130	-	20
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1057634-5 QC Sample: L1739256-10 Client ID: MS Sample									
Mercury, Total	ND	0.005	0.0040	81	-	-	70-130	-	20

Lab Duplicate Analysis
Batch Quality Control

Project Name: SOUTH STATION
Project Number: 12287-200

Lab Number: L1739283
Report Date: 11/03/17

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1057621-4 QC Sample: L1738919-01 Client ID: DUP Sample						
Cadmium, Total	ND	ND	mg/l	NC		20
Chromium, Total	0.00178	0.00180	mg/l	1		20
Copper, Total	0.00332	0.00356	mg/l	7		20
Lead, Total	0.00865	0.0089	mg/l	3		20
Zinc, Total	0.06628	0.06545	mg/l	1		20
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1057626-4 QC Sample: L1738919-01 Client ID: DUP Sample						
Iron, Total	0.420	0.417	mg/l	1		20
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1057634-4 QC Sample: L1739256-01 Client ID: DUP Sample						
Mercury, Total	ND	ND	mg/l	NC		20
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1057634-6 QC Sample: L1739256-10 Client ID: DUP Sample						
Mercury, Total	ND	ND	mg/l	NC		20

INORGANICS
&
MISCELLANEOUS

Project Name: SOUTH STATION
Project Number: 12287-200
Lab Number: L1739283
Report Date: 11/03/17

SAMPLE RESULTS

Lab ID: L1739283-01
Client ID: HA-OW-4
Sample Location: SUMMER STREET
Matrix: Water
Date Collected: 10/27/17 10:55
Date Received: 10/27/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
SALINITY	ND		SU	2.0	--	1	-	10/30/17 18:02	121,2520B	AS
Solids, Total Suspended	ND		mg/l	5.0	NA	1	-	10/28/17 03:20	121,2540D	VB
Cyanide, Total	ND		mg/l	0.005	--	1	10/29/17 12:30	10/30/17 14:02	121,4500CN-CE	LH
Chlorine, Total Residual	ND		mg/l	0.02	--	1	-	10/27/17 22:38	121,4500CL-D	AS
Nitrogen, Ammonia	1.24		mg/l	0.075	--	1	10/28/17 15:30	10/30/17 18:32	121,4500NH3-BH	AT
TPH, SGT-HEM	ND		mg/l	4.00	--	1	10/28/17 08:30	10/28/17 09:30	74,1664A	KZ
Phenolics, Total	ND		mg/l	0.030	--	1	11/02/17 19:45	11/02/17 22:59	4,420.1	ML
Chromium, Hexavalent	ND		mg/l	0.010	--	1	10/28/17 00:45	10/28/17 00:46	1,7196A	UN
Anions by Ion Chromatography - Westborough Lab										
Chloride	635.		mg/l	25.0	--	50	-	10/28/17 16:16	44,300.0	JC

Project Name: SOUTH STATION
Project Number: 12287-200
Lab Number: L1739283
Report Date: 11/03/17

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG1057221-1										
Chlorine, Total Residual	ND		mg/l	0.02	--	1	-	10/27/17 22:38	121,4500CL-D	AS
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG1057244-1										
Chromium, Hexavalent	ND		mg/l	0.010	--	1	10/28/17 00:45	10/28/17 00:45	1,7196A	UN
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG1057248-1										
Solids, Total Suspended	ND		mg/l	5.0	NA	1	-	10/28/17 03:20	121,2540D	VB
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG1057309-1										
TPH, SGT-HEM	ND		mg/l	4.00	--	1	10/28/17 08:30	10/28/17 09:30	74,1664A	KZ
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG1057332-1										
Nitrogen, Ammonia	ND		mg/l	0.075	--	1	10/28/17 15:30	10/30/17 18:21	121,4500NH3-BH	AT
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG1057472-1										
Cyanide, Total	ND		mg/l	0.005	--	1	10/29/17 12:30	10/30/17 13:37	121,4500CN-CE	LH
Anions by Ion Chromatography - Westborough Lab for sample(s): 01 Batch: WG1057513-1										
Chloride	ND		mg/l	0.500	--	1	-	10/28/17 10:04	44,300.0	JC
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG1058061-1										
Phenolics, Total	ND		mg/l	0.030	--	1	11/02/17 19:45	11/02/17 22:55	4,420.1	ML

Lab Control Sample Analysis

Batch Quality Control

Project Name: SOUTH STATION
Project Number: 12287-200

Lab Number: L1739283
Report Date: 11/03/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1057221-2								
Chlorine, Total Residual	101		-		90-110	-		
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1057244-2								
Chromium, Hexavalent	100		-		85-115	-		20
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1057309-2								
TPH	89		-		64-132	-		34
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1057332-2								
Nitrogen, Ammonia	90		-		80-120	-		20
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1057472-2								
Cyanide, Total	91		-		90-110	-		
Anions by Ion Chromatography - Westborough Lab Associated sample(s): 01 Batch: WG1057513-2								
Chloride	106		-		90-110	-		
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1057782-1								
SALINITY	104		-			-		

Lab Control Sample Analysis

Batch Quality Control

Project Name: SOUTH STATION

Project Number: 12287-200

Lab Number: L1739283

Report Date: 11/03/17

Parameter	LCS %Recovery	LCSD %Recovery	%Recovery Limits	RPD	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1058061-2					
Phenolics, Total	98	-	70-130	-	

Matrix Spike Analysis
Batch Quality Control

Project Name: SOUTH STATION
Project Number: 12287-200

Lab Number: L1739283
Report Date: 11/03/17

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1057221-4 QC Sample: L1739289-02 Client ID: MS Sample												
Chlorine, Total Residual	19	24.8	40	86		-	-		80-120	-		20
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1057244-4 QC Sample: L1739283-01 Client ID: HA-OW-4												
Chromium, Hexavalent	ND	0.1	0.095	95		-	-		85-115	-		20
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1057309-4 QC Sample: L1739164-01 Client ID: MS Sample												
TPH	ND	20	14.7	74		-	-		64-132	-		34
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1057332-4 QC Sample: L1739283-01 Client ID: HA-OW-4												
Nitrogen, Ammonia	1.24	4	5.00	94		-	-		80-120	-		20
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1057472-4 WG1057472-5 QC Sample: L1739069-08 Client ID: MS Sample												
Cyanide, Total	0.014	0.2	0.200	93		0.204	95		90-110	2		30
Anions by Ion Chromatography - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1057513-3 QC Sample: L1738993-02 Client ID: MS Sample												
Chloride	8.31	4	8.63	**8**	Q	-	-		90-110	-		18
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1058061-4 QC Sample: L1739283-01 Client ID: HA-OW-4												
Phenolics, Total	ND	0.4	0.42	106		-	-		70-130	-		20

Lab Duplicate Analysis
Batch Quality Control

Project Name: SOUTH STATION
Project Number: 12287-200

Lab Number: L1739283
Report Date: 11/03/17

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1057221-3 QC Sample: L1739289-01 Client ID: DUP Sample						
Chlorine, Total Residual	51	53	mg/l	4		20
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1057244-3 QC Sample: L1739283-01 Client ID: HA-OW-4						
Chromium, Hexavalent	ND	ND	mg/l	NC		20
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1057248-2 QC Sample: L1739026-01 Client ID: DUP Sample						
Solids, Total Suspended	960	930	mg/l	3		29
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1057309-3 QC Sample: L1739283-01 Client ID: HA-OW-4						
TPH, SGT-HEM	ND	ND	mg/l	NC		34
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1057332-3 QC Sample: L1739283-01 Client ID: HA-OW-4						
Nitrogen, Ammonia	1.24	1.22	mg/l	2		20
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1057472-3 QC Sample: L1739069-08 Client ID: DUP Sample						
Cyanide, Total	0.014	0.011	mg/l	20		30
Anions by Ion Chromatography - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1057513-4 QC Sample: L1738993-02 Client ID: DUP Sample						
Chloride	8.31	8.32	mg/l	0		18
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1057782-2 QC Sample: L1739283-01 Client ID: HA-OW-4						
SALINITY	ND	ND	SU	NC		
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1058061-3 QC Sample: L1739283-01 Client ID: HA-OW-4						
Phenolics, Total	ND	ND	mg/l	NC		20

Project Name: SOUTH STATION
Project Number: 12287-200

Lab Number: L1739283
Report Date: 11/03/17

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L1739283-01A	Vial HCl preserved	A	NA		2.2	Y	Absent		8260-SIM(14),8260(14)
L1739283-01B	Vial HCl preserved	A	NA		2.2	Y	Absent		8260-SIM(14),8260(14)
L1739283-01C	Vial HCl preserved	A	NA		2.2	Y	Absent		8260-SIM(14),8260(14)
L1739283-01D	Vial Na2S2O3 preserved	A	NA		2.2	Y	Absent		504(14)
L1739283-01E	Vial Na2S2O3 preserved	A	NA		2.2	Y	Absent		504(14)
L1739283-01F	Plastic 250ml HNO3 preserved	A	<2	<2	2.2	Y	Absent		CD-2008T(180),NI-2008T(180),ZN-2008T(180),CU-2008T(180),FE-UI(180),HARDU(180),AG-2008T(180),AS-2008T(180),HG-U(28),SE-2008T(180),CR-2008T(180),PB-2008T(180),SB-2008T(180)
L1739283-01G	Plastic 250ml unpreserved	A	7	7	2.2	Y	Absent		HOLD-METAL-DISSOLVED(180)
L1739283-01H	Amber 1000ml Na2S2O3	A	7	7	2.2	Y	Absent		PCB-608(7)
L1739283-01H1	Amber 1000ml Na2S2O3	A	7	7	2.2	Y	Absent		PCB-608(7)
L1739283-01I	Amber 1000ml unpreserved	A	7	7	2.2	Y	Absent		8270TCL(7),8270TCL-SIM(7)
L1739283-01J	Amber 1000ml unpreserved	A	7	7	2.2	Y	Absent		8270TCL(7),8270TCL-SIM(7)
L1739283-01K	Plastic 950ml unpreserved	A	7	7	2.2	Y	Absent		CL-300(28),HEXCR-7196(1),SALINITY(28),TRC-4500(1)
L1739283-01K1	Plastic 950ml unpreserved	A	7	7	2.2	Y	Absent		TSS-2540(7)
L1739283-01L	Plastic 250ml NaOH preserved	A	>12	>12	2.2	Y	Absent		HOLD-WETCHEM()
L1739283-01M	Plastic 500ml H2SO4 preserved	A	<2	<2	2.2	Y	Absent		NH3-4500(28)
L1739283-01N	Plastic 250ml NaOH preserved	A	>12	>12	2.2	Y	Absent		TCN-4500(14)
L1739283-01O	Amber 1000ml HCl preserved	A	NA		2.2	Y	Absent		TPH-1664(28)
L1739283-01P	Amber 1000ml HCl preserved	A	NA		2.2	Y	Absent		TPH-1664(28)
L1739283-01Q	Amber 1000ml H2SO4 preserved	A	<2	<2	2.2	Y	Absent		TPHENOL-420(28)

*Values in parentheses indicate holding time in days

Project Name:	SOUTH STATION	**Lab Number:**	L1739283
Project Number:	12287-200	**Report Date:**	11/03/17

GLOSSARY

Acronyms

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

Footnotes

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

Terms

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

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

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

Data Qualifiers

A	- Spectra identified as "Aldol Condensation Product".
B	- The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related

Report Format: Data Usability Report

Project Name:	SOUTH STATION	**Lab Number:**	L1739283
Project Number:	12287-200	**Report Date:**	11/03/17

Data Qualifiers

projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

C - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

G - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.

H - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

I - The lower value for the two columns has been reported due to obvious interference.

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

P - The RPD between the results for the two columns exceeds the method-specified criteria.

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

J - Estimated value. This represents an estimated concentration for Tentatively Identified Compounds (TICs).

ND - Not detected at the reporting limit (RL) for the sample.

Report Format: Data Usability Report

Project Name: SOUTH STATION **Lab Number:** L1739283

Project Number: 12287-200 **Report Date:** 11/03/17

REFERENCES

1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - IV, 2007.

3 Methods for the Determination of Metals in Environmental Samples, Supplement I. EPA/600/R-94/111. May 1994.

4 Methods for Chemical Analysis of Water and Wastes. EPA 600/4-79-020. Revised March 1983.

5 Methods for the Organic Chemical Analysis of Municipal and Industrial Wastewater. Appendix A, Part 136, 40 CFR (Code of Federal Regulations).

14 Methods for the Determination of Organic Compounds in Finished Drinking Water and Raw Source Water. EPA/600/4-88/039, Revised July 1991.

19 Inductively Coupled Plasma Atomic Emission Spectrometric Method for Trace Element Analysis of Water and Wastes. Appendix C, Part 136, 40 CFR (Code of Federal Regulations). July 1, 1999 edition.

44 Methods for the Determination of Inorganic Substances in Environmental Samples, EPA/600/R-93/100, August 1993.

74 Method 1664,Revision A: N-Hexane Extractable Material (HEM; Oil & Grease) and Silica Gel Treated N-Hexane Extractable Material (SGT-HEM; Non-polar Material) by Extraction and Gravimetry, EPA-821-R-98-002, February 1999.

107 Alpha Analytical - In-house calculation method.

121 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. Standard Methods Online.

LIMITATION OF LIABILITIES

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

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

Certification Information

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

Westborough Facility
EPA 624: m/p-xylene, o-xylene
EPA 8260C: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), Methyl methacrylate, 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270D: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
EPA 300: DW: Bromide
EPA 6860: NPW and SCM: Perchlorate
EPA 9010: NPW and SCM: Amenable Cyanide Distillation
EPA 9012B: NPW: Total Cyanide
EPA 9050A: NPW: Specific Conductance
SM3500: NPW: Ferrous Iron
SM4500: NPW: Amenable Cyanide, Dissolved Oxygen; SCM: Total Phosphorus, TKN, NO2, NO3.
SM5310C: DW: Dissolved Organic Carbon

Mansfield Facility
SM 2540D: TSS
EPA 3005A NPW
EPA 8082A: NPW: PCB: 1, 5, 31, 87,101, 110, 141, 151, 153, 180, 183, 187.
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
Biological Tissue Matrix: EPA 3050B

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

Westborough Facility:

Drinking Water
EPA 300.0: Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B**
EPA 332: Perchlorate; **EPA 524.2:** THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D**.

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **SM4500NO3-F, EPA 353.2**: Nitrate-N**, EPA 351.1, SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D.**
EPA 624: Volatile Halocarbons & Aromatics,
EPA 608: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045**: PCB-Oil.
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9221E.**

Mansfield Facility:

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

Non-Potable Water
EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.
EPA 200.8: Al, Sb, As, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn.
EPA 245.1 Hg.
SM2340B

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

COC edits by Gina Hall AAL 10/30/17
also analyze for Tri Cr, 504

CHAIN OF CUSTODY

ALPHA ANALYTICAL

Page 1 of 1

Date Rec'd in Lab: 10/27/17

ALPHA Job #: L1739283

Westborough, MA 01581 — 8 Walkup Dr. — TEL: 508-898-9220 — FAX: 508-898-9193

Mansfield, MA 02048 — 320 Forbes Blvd — TEL: 508-822-9300 — FAX: 508-822-3288

Client Services

Project Information

Project Name: South Station

Project Location: Summer Street

Project #: 12297-200

Use Project name as Project #

Project Manager: D. Bell

ALPHAQuote #:

Turn-Around Time

Standard ☑ Due Date:

(only if pre-approved) ☐ # of Days: 5 Day

Deliverables

☑ Email ☐ Fax

☐ EQuIS (1 File) ☑ EQuIS (4 File)

☐ Other:

Billing Information

☑ Same as Client Info

PO #:

Regulatory Requirements (Program/Criteria)

MA MPDES RGP

Note: Select State from menu & identify criteria.

Disposal Site Information

Please identify below location of applicable disposal facilities.

Disposal Facility:

☐ NJ ☐ NY

☐ Other:

A&A Information

A&A Client: Hines

A&A Address: 455 Medford St

Boston, MA 02129-1400

A&A Phone: 617-886-7400

A&A Fax:

A&A Email: Kalepidis, Lhouard

These samples have been previously analyzed by Alpha

Other project specific requirements/comments:

Yield Filtered

PLEASE RUN FOR FULL 2017 RGP SUITE, MINUS ETHANOL

Analysis using the EPA 2017 RGP Approved Testing Methods

Please specify Metals or TAL:

ANALYSIS

Sample Filtration

☐ Done ☐ Lab to do

Preservation

☐ Lab to do

(Please Specify below)

Sample Specific Comments

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	TSS-2540, TKN-4500	TCN-4500, 304	8260, 624/0 SIM for Dioxane	HEXCR-3500, Trivalent Chromium	8270TCL (also including Diethylhexylphthalate)	8270TCL-SIM	Total Metals: Ag, Al, Cd, Cr, Cu, Ni, Pb, Sb, Se, Zn, Fe, Hg	CL-300	Ammonia	Salinity, hardness	TPH 1664, PCB-608, TPHENOL-420, HOLD PAGN	HOLD WCN	**HOLD DISSOLVED METALS			Sample Specific Comments	
39263-01	WA-OW-4	10/27/17	1055	AQ	AE	X	X	X	X	X	X	X	X	X	X	X	X	X	X			19

Preservative Code: A = None; B = HCl; C = HNO_3; D = H_2SO_4; E = NaOH; F = MeOH; G = $NaHSO_4$; H = $Na_2S_2O_3$; KI = Zn Ac/NaOH; O = Other

Container Code: P = Plastic; A = Amber Glass; V = Vial; G = Glass; B = Bacteria Cup; C = Cube; O = Other; E = Encore; D = BOD Bottle

Westboro: Certification No: MA935

Mansfield: Certification No: MA015

	Container Type																					
	Preservative																					

Relinquished By:	Date/Time	Received By:	Date/Time
	10/27/17		10/27/17 1615
	10/27/17 1615		10/27/17 1900
	10/27/17 1850		10/27/17 1850

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. Alpha Analytical's services under this Chain of Custody shall be performed in accordance with terms and conditions within (Blanket Service Agreement# 2015-19-Alpha Analytical by and between Haley & Aldrich, Inc., its subsidiaries and affiliates and Alpha Analytical.

Document ID: 20455 Rev 1 (10/5/2016)

ALPHA CHAIN OF CUSTODY

Service Centers: Brewer, ME 04412 · Portsmouth, NH 03801 · Mahwah, NJ 07430 · Albany, NY 12205 · Tonawanda, NY 14150 · Holmes, PA 19043

Westborough, MA 01581, 8 Walkup Dr., TEL: 508-898-9220, FAX: 508-898-9193

Mansfield, MA 02048, 320 Forbes Blvd, TEL: 508-822-9300, FAX: 508-822-3288

Page 1 of 1

Date Rec'd in Lab: 10/27/17

ALPHA Job #: L1739283

Project Information

Project Name: South Station
Project Location: Summer Street
Project #: 12297-200
(Use Project name as Project) ☐
Project Manager: D. Bell
ALPHAQuote #:

H&A Information

H&A Client: Hines
H&A Address: 465 Medford St, Boston, MA 02129-1400
H&A Phone: 617-886-7400
H&A Fax:
H&A Email: Kalepidis, Lhoward

Turn-Around Time

Standard ☑ Due Date:
(only if pre approved) ☐ # of Days: 5 Day

Deliverables

☑ Email ☐ Fax
☐ EQuIS (1 File) ☑ EQuIS (4 File)
☐ Other:

Billing Information

☑ Same as Client Info
PO #

Regulatory Requirements (Program/Criteria)

MA NPDES RGP

Note: Select State from menu & identify criteria.

Disposal Site Information

Please identify below location of applicable disposal facilities.

Disposal Facility: ☐ NJ ☐ NY ☐ Other:

These samples have been previously analyzed by Alpha

Other project specific requirements/comments:
**Field Filtered
PLEASE RUN FOR FULL 2017 RGP SUITE, MINUS ETHANOL
Analyze using the EPA 2017 RGP Approved Testing Methods

Please specify Metals or TAL.

Sample Filtration: ☐ Done ☐ Lab to do; **Preservation** ☐ Lab to do (Please Specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	TSS-2540, TRC-4500	TCN-4500, 304	8260, 8260 SIM for Dioxane	HEXCR-3500, Trivalent Chromium	8270TCL (also including Diethylhexylphthalate)	8270TCL-SIM	Total Metals: Ag, As, Cd, Cr, Cu, Ni, Pb, Sb, Zn, Fe, Hg	CL-300	Ammonia	Salinity, hardness	TPH-1664, PCB-608, [illegible]	HOLD PACN	HOLD VOY	**HOLD DISSOLVED METALS			Sample Specific Comments	Total Bottles
39283-01	HA-OW-4	10/27/17	1055	AQ	AF	X	X	X	X	X	X	X	X	X	X	X	X	X	X				19

Preservative Code: A = None, B = HCl, C = HNO_3, D = H_2SO_4, E = NaOH, F = MeOH, G = $NaHSO_4$, H = $Na_2S_2O_3$, K/E = Zn Ac/NaOH, O = Other

Container Code: P = Plastic, A = Amber Glass, V = Vial, G = Glass, B = Bacteria Cup, C = Cube, O = Other, E = Encore, D = BOD Bottle

Westboro: Certification No: MA935
Mansfield: Certification No: MA015

Container Type
Preservative

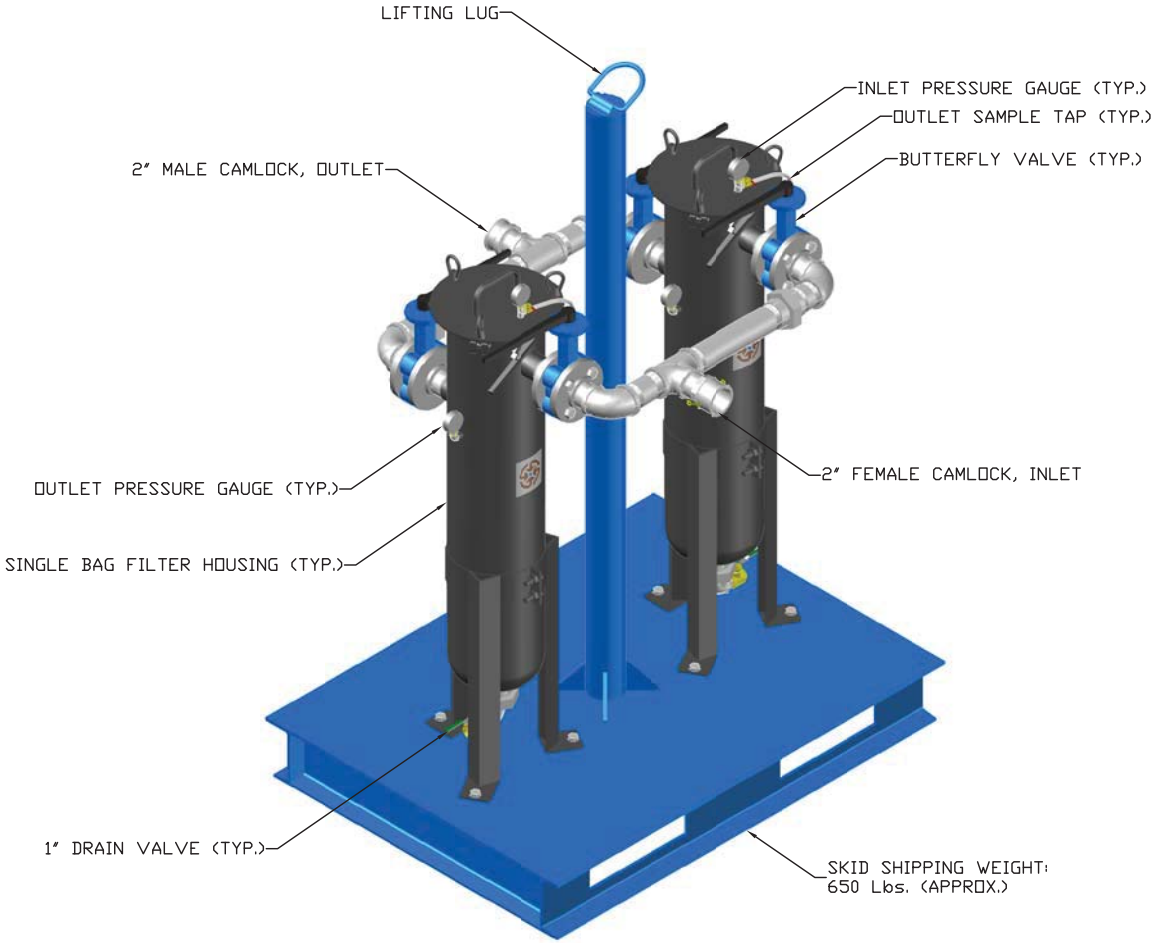
Relinquished By:	Date/Time	Received By:	Date/Time
[signature]	10/27/17	[signature]	10/27/17 [illegible]
[signature]	10/27/17 1600	[signature] AAL	10/27/17 1700
[signature] AAL	10/27/17 1850	[signature]	10/27/17 1850

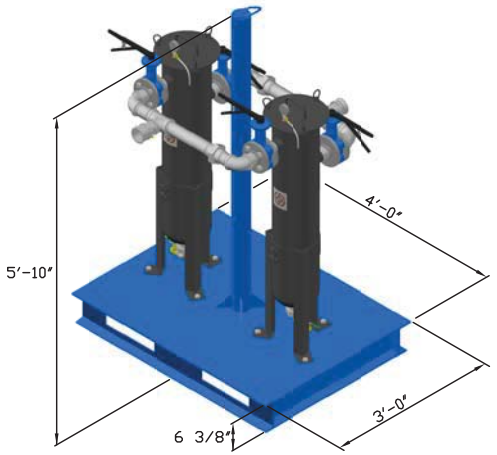
Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. Alpha Analytical's services under this Chain of Custody shall be performed in accordance with terms and conditions within Blanket Service Agreement# 2015-18-Alpha Analytical by and between Haley & Aldrich, Inc., its subsidiaries and affiliates and Alpha Analytical.

Document ID: 20455 Rev 1 (1/28/2016)

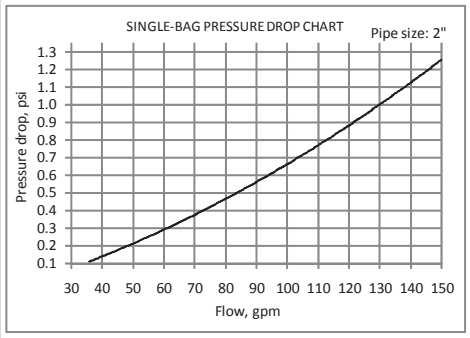
APPENDIX F

Contractor Dewatering Cut Sheets and SDSs





NOTE: THIS DRAWING DEPICTS A "TYPICAL" SKID.
ACTUAL DETAILS AND DIMENSIONS MAY VARY.

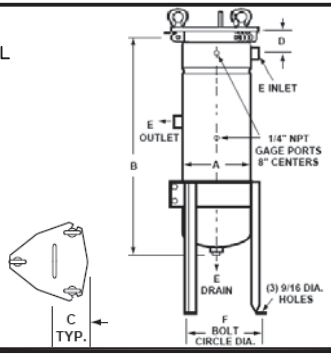


SINGLE BAG FILTER SPECIFICATIONS

- CONSTRUCTION:	CARBON STEEL
- HOUSING STYLE:	STANDARD
- NUMBER OF BASKETS:	1
- STRAINING FILTERING AREA:	26.4 SQR. FT.
- INLET/OUTLET SIZE:	2"
- DRAIN SIZE (1x):	2"
- NOMINAL FLOW RATE:	100 GPM
- STANDARD PRESSURE:	125 PSI
- WEIGHT (PER DRY UNIT):	70 Lbs.

BASIC DIMENSIONS

MODEL NUMBER & A: 8 (8.6")
LEG BOLT CIRCLE F: ø12.0"
B: 35.9" C: 6.0"
D: 3.5" E: 2.0"



NO.	REVISIONS	DATE
C	ADDED SKID WEIGHT	02/18/09

DUPLEX SINGLE BAG FILTER SKID STANDARD EQUIPMENT SPECIFICATION

SCALE: NTS	APPROVED BY: JB	DRAWN BY: AAV	
DATE: 02/18/09			

GROUND/WATER TREATMENT & TECHNOLOGY
P.O. BOX 1174
DENVILLE, NJ 07834

DWG SIZE: A	SHEET: 1 OF 1	DRAWING NUMBER: ST-0002-SPC	C

TENCATE Mirafi®

Mirafi® 140N

Mirafi® 140N is a needlepunched nonwoven geotextile composed of polypropylene fibers, which are formed into a stable network such that the fibers retain their relative position. Mirafi® 140N is inert to biological degradation and resists naturally encountered chemicals, alkalis, and acids. Mirafi® 140N meets Aashto M288-06 Class 3 for elongation > 50%.

Mechanical Properties	Test Method	Unit	Minimum Average Roll Value	
			MD	CD
Grab Tensile Strength	ASTM D4632	lbs (N)	120 (534)	120 (534)
Grab Tensile Elongation	ASTM D4632	%	50	50
Trapezoid Tear Strength	ASTM D4533	lbs (N)	50 (223)	50 (223)
CBR Puncture Strength	ASTM D6241	lbs (N)	310 (1380)	
Apparent Opening Size (AOS)[1]	ASTM D4751	U.S. Sieve (mm)	70 (0.212)	
Permittivity	ASTM D4491	sec^{-1}	1.7	
Flow Rate	ASTM D4491	$gal/min/ft^2$ ($l/min/m^2$)	135 (5500)	
UV Resistance (at 500 hours)	ASTM D4355	% strength retained	70	

[1] ASTM D4751: AOS is a Maximum Opening Diameter Value

Physical Properties	Unit	Typical Value	
Roll Dimensions (width x length)	ft (m)	12.5 x 360 (3.8 x 110)	15 x 360 (4.5 x 110)
Roll Area	yd^2 (m^2)	500 (418)	600 (502)
Estimated Roll Weight	lb (kg)	133 (60)	160 (72)

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