RANSOM
Consulting, Inc.

Consulting
Engineers
and Scientists

Via email: NPDES.Generalpermits@epa.gov

July 7, 2017 Project 991.01001.111

U.S. Environmental Protection Agency, Region I
Office of Ecosystem Protection
EPA/OEP RGP Applications Coordinator
5 Post Office Square - Suite 100 (OEP06-01)
Boston, Massachusetts 02109-3912

RE: Transmittal of Notice of Intent
2017 Remediation General Permit
MAG 910000
Bradford & Bigelow, Inc.
(Former GI Plastek Facility)
3 Perkins Way
Newburyport, Massachusetts
MA DEP Release Tracking No. 3-12652

To Whom It May Concern:

On behalf of the of Bradford & Bigelow, Inc. (B&B), Ransom Consulting, Inc. (Ransom) is submitting this Notice of Intent (NOI) to continue a groundwater treatment system discharge located at 3 Perkins Way in Newburyport, Massachusetts (the Site). A Site Location Map, a Site Plan, an Equipment Layout and Process and Instrumentation Diagram, and a Site Area Plan are provided as Figures 1 through 4, respectively, as Attachment A. The purpose of this letter is to supplement the completed NOI Form, taken from Remediation General Permit (RGP) Appendix IV and included as Attachment B to this letter.

NOI Section B.1

As noted in Section B.1. of the NOI Form, the treated groundwater is discharged to an on-site drainage swale which ultimately discharges to the Little River. Treated groundwater is discharged via a buried pipe to the drainage swale and the associated storm water system for the industrial park, which is hydraulically connected via a subsurface drainage system through a drainage easement located approximately 285 feet southeast of the drainage swale which ultimately drains to the Little River. The drainage system and Little River are depicted on Figure 4 (Attachment A).

NOI Sections B.4 - B.6

Ransom determined the seven day-ten-year low flow (7Q10) of the receiving water to be 0.0335 cubic feet per second (ft^3/s) using modeling provided via the online USGS StreamStats program referenced in RGP Appendix V (streamstatsags.cr.usgs.gov/streamstats). However, a dilution factor was not used because of the intermittent nature of the flow in the storm water system at the discharge point.

12 Kent Way, Suite 100, Byfield, Massachusetts 01922-1221, Tel (978) 465-1822, Fax (978) 465-2986
400 Commercial Street, Suite 404, Portland, Maine 04101, Tel (207) 772-2891
Pease International Tradeport, 112 Corporate Drive, Portsmouth, New Hampshire 03801, Tel (603) 436-1490
60 Valley Street, Building F, Suite 106, Providence, Rhode Island 02909, Tel (401) 433-2160
2127 Hamilton Avenue, Hamilton, New Jersey 08619, Tel (609) 584-0090

www.ransomenv.com

NOI Section B.7

Treated groundwater is discharged via a buried pipe to a drainage swale and the associated storm water system for the industrial park, which is hydraulically connected via a subsurface drainage system through a drainage easement located approximately 285 feet southeast of the drainage swale, then to a drainage ditch located approximately 560 feet east of the drainage swale which ultimately drains to the Little River. A surface water sample from the Little River ("Receiving Water") was not collected as the discharge is to the industrial park storm water system which is intermittent and is usually dry. In addition, the little River is located over 1,140 feet southeast of the Site.

NOI Section C.1-C.2

An Influent sample was collected on June 13, 2017; the results are provided in Analytical Report No. L1718671 from Alpha Analytical, Inc. provided as Attachment C.

NOI Section D.1.

The discharge is from a groundwater treatment system. The system operates continuously at a flow rate of 1.2 gallons per minute. The system does not contain processes that alter the temperature of the water prior to discharge. The treated groundwater is discharged via a buried pipe to a drainage swale and the associated storm water system for the industrial park, which is hydraulically connected via a subsurface drainage system through a drainage easement located approximately 285 feet southeast of the drainage swale which ultimately drains to the Little River. The location of the treatment system piping is depicted on Figure 2 and the easement and Little River location are shown on Figure 4 (Attachment A).

NOI Section D.4

A system influent sample was collected on June 13, 2017, and the results are provided in Analytical Report No. L1718671 from Alpha, provided as Attachment C.

NOI Section E

The objective of the treatment system is to recover and treat groundwater impacted by trichloroethene (TCE) and 1,1,1-trichloroethane (TCA) as part of a groundwater remediation program designed to control off-site migration of contaminated groundwater. The treatment system consists of one groundwater recovery well (RW1) connected via underground piping to a particle-filtration system to remove sediment, followed by two 200-pound granular activated carbon (GAC) vessels, into a holding tank, through a booster pump to a second particle-filtration system, and into two 1.2 cubic foot granular ferrous hydroxide (GFH) ion-exchange resin tanks located in series inside the site building. Treated groundwater is discharged via underground piping to the drainage swale.

NOI Section F

No chemicals or additives are applied to the effluent prior to discharge.

NOI Section G

On June 7, 2017, Ransom contacted the U.S. Fish and Wildlife Service (USFWS) requesting a determination on potential impacts to listed species in the area. On June 16, 2017, Mr. David Simmons responded that the project as described is unlikely to have an impact on the listed species. Correspondence related to the USFWS consultation is provided as Attachment D.

NOI Section H

Certification was provided regarding the absence of historic properties with submittal of previous NOIs. Continuation of the existing discharge will not require construction activities that will disturb the ground or existing structures.

NOI Section J

The previously existing Best Management Practices Plan (BMPP) has been revised to meet the terms of the 2017 RGP and will be implemented at the Site. The BMPs include conducting operation and maintenance activities, recording monitoring results, and maintaining records relative to the discharges permitted under the RGP. The existing BMPP operation and maintenance activities were conducted, results recorded, and records maintained. With the GAC and IER change out schedule established in the BMPP, the effluent limitations included in this general permit have been achieved in 2017.

U.S. Environmental Protection Agency, Region I
Office of Ecosystem Protection

If you have any questions regarding this NOI submittal, please feel free to contact me at (978) 465-1822.

Sincerely,

RANSOM CONSULTING, INC.

Heather Dudley-Tatman
2017.07.07 14:59:09 -04'00'

Heather E. Dudley-Tatman, P.G.
Project Manager

Timothy J. Snay
2017.07.07 15:04:16
-04'00'

Timothy J. Snay, LSP, LEP
Principal, Vice President/Senior Scientist

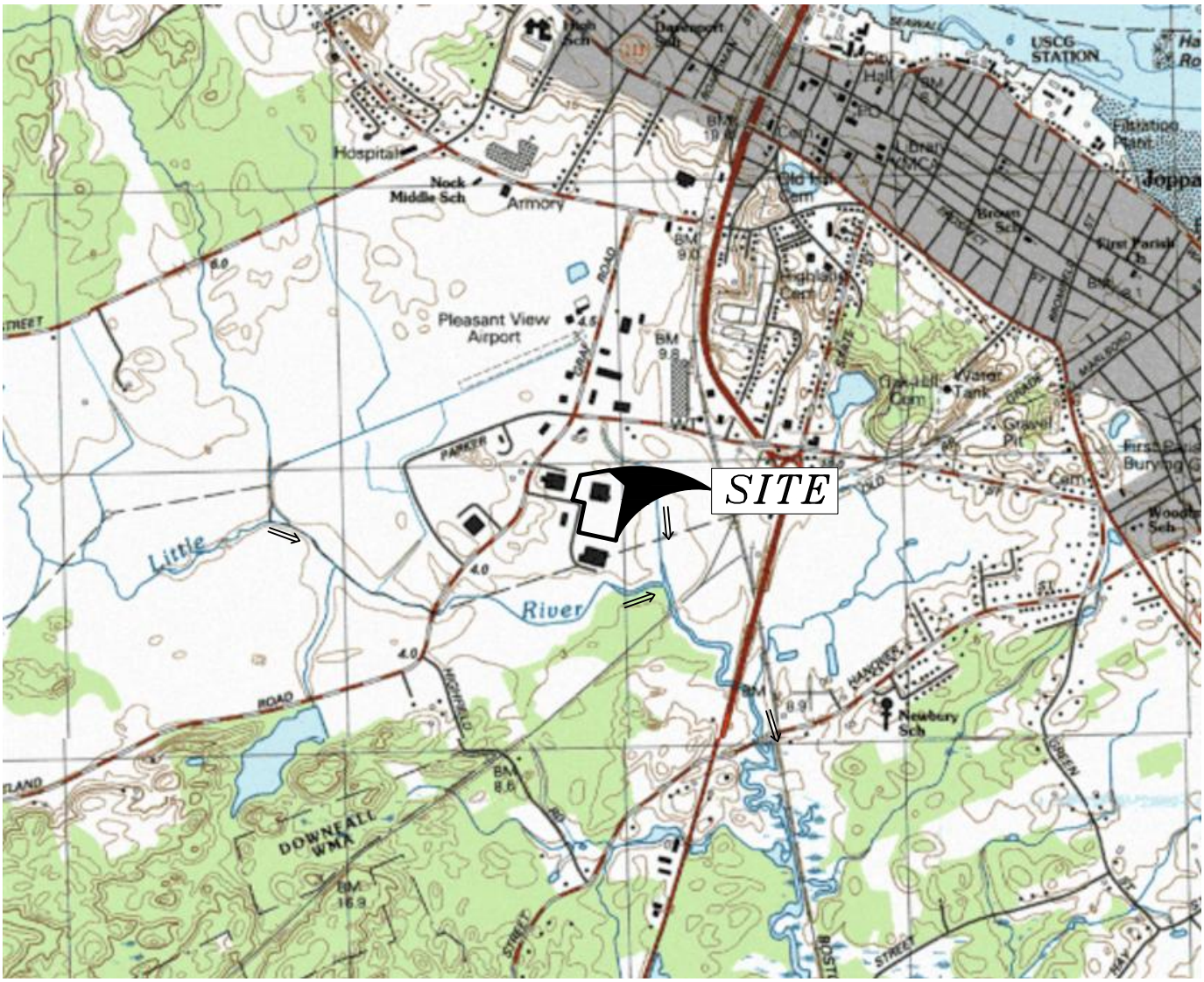
HED/TJS:cnt
Attachments

cc: Carmen Frederico, Bradford & Bigelow, Inc.
MA DEP RGP Coordinator

ATTACHMENT A

Figures

Transmittal of Notice of Intent
2017 Remediation General Permit
MAG 910000
Bradford & Bigelow, Inc.
(Former GI Plastek Facility)
3 Perkins Way
Newburyport, Massachusetts
MA DEP Release Tracking No. 3-12652



TAKEN FROM U.S.G.S. 7.5x15 MINUTE SERIES TOPOGRAPHIC MAP OF NEWBURYPORT, MASSACHSUETTS– 1987.

CONTOUR INTERVAL IS 3 METERS

SITE COORDINATES: LATITUDE 42°47'51"
LONGITUDE 70°53'03"

UTM COORDINATES: 47: 39: 838mN
3: 45: 914mE

N
W E
S

LEGEND:

⟹ FLOW DIRECTION

QUADRANGLE LOCATION

0 1000 2000 3000 4000

SCALE in FEET
1: 25,000

RANSOM Consulting, Inc.

SITE LOCATION MAP

PREPARED FOR:	SITE:
BRADFORD & BIGELOW, INC. 3 PERKINS WAY NEWBURYPORT, MASSACHUSETTS	BRADFORD & BIGELOW, INC. 3 PERKINS WAY NEWBURYPORT, MASSACHUSETTS

DATE:	JULY 2017
PROJECT:	991001.1
FIGURE:	1

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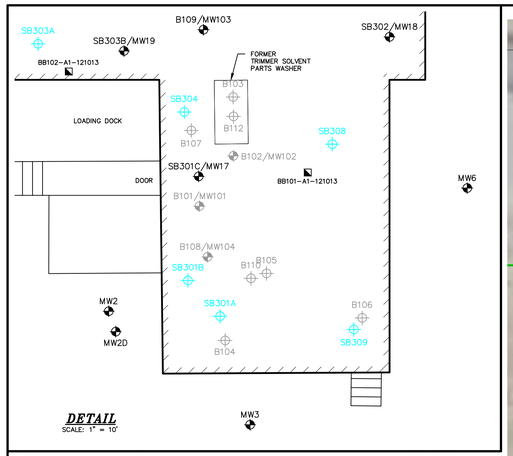

BRADFORD & BIGELOW, INC.

BIXBY INTERNATIONAL, INC.

SEE DETAIL

MW1

FORMER TRIMMER SOLVENT PARTS WASHER

B109/MW103

SB302/MW18

SB303B/MW19

DOOR

STORAGE PLATFORM

SB301C/MW17

MW6

CONCRETE PAD-MOUNTED TRIM PAPER RECYCLING SYSTEM

MW2

MW2D

LOADING DOCK

MW3

MW7

MW11D

MW11

RECOVERY WELL PIPING

DISCHARGE PIPING

B209/MW16D

B201/MW9D

MW8

MW5D

MW5

RW1

DRAINAGE SWALE/DETENTION AREA

RIP-RAP

SB307/MW22

B206/MW14

B205/MW13D

SB306/MW21

B305/MW20

B202/MW10D

IA2-BX-120413

IA1-BX-120413

B207/MW15D

B204/MW12D

LEGEND:

- B201/MW9D — SOIL BORING/MONITORING WELL
- SB309 — SOIL BORING
- MW4 — DESTROYED MONITORING WELL
- B105 — FORMER SOIL BORING
- RW1 — RECOVERY WELL
- BB101-A1-121013 — INDOOR AIR SAMPLE LOCATION
- DRAIN MANHOLE
- CATCH BASIN
- FENCE
- DRAIN UTILITY LINE
- WETLAND BOUNDARY
- ACTIVITY AND USE LIMITATION AREA (AUL)
- DISPOSAL SITE BOUNDARY
- PARCEL BOUNDARY
- PROPERTY BOUNDARY

NOTES:

1. FIGURE BASED ON OBSERVATIONS AND MEASUREMENTS MADE IN THE FIELD BY RANSOM CONSULTING, INC. ON AUGUST 6, 1995 AND UPDATED WITH AN ELEVATION AND LOCATION SURVEY PERFORMED ON AUGUST 4, 1997; JANUARY 9, 1998; APRIL 10, 2001; NOVEMBER 27, 2006; JANUARY 5, 2007 AND DECEMBER 13, 2013. AERIAL IMAGE PROVIDED BY GOOGLE EARTH DATED APRIL 7, 2013.
2. SOME LOCATIONS ARE APPROXIMATE AND FIGURE IS SCHEMATIC IN NATURE.

0 15 30 60

SCALE in FEET
1"=30'

RANSOM Consulting, Inc.

PREPARED FOR:
BRADFORD & BIGELOW, INC.
3 PERKINS WAY
NEWBURYPORT, MASSACHUSETTS

SITE:
BRADFORD & BIGELOW, INC.
3 PERKINS WAY
NEWBURYPORT, MASSACHUSETTS

SITE PLAN

DATE: JULY 2017
PROJECT: 991.01001
FIGURE: 2

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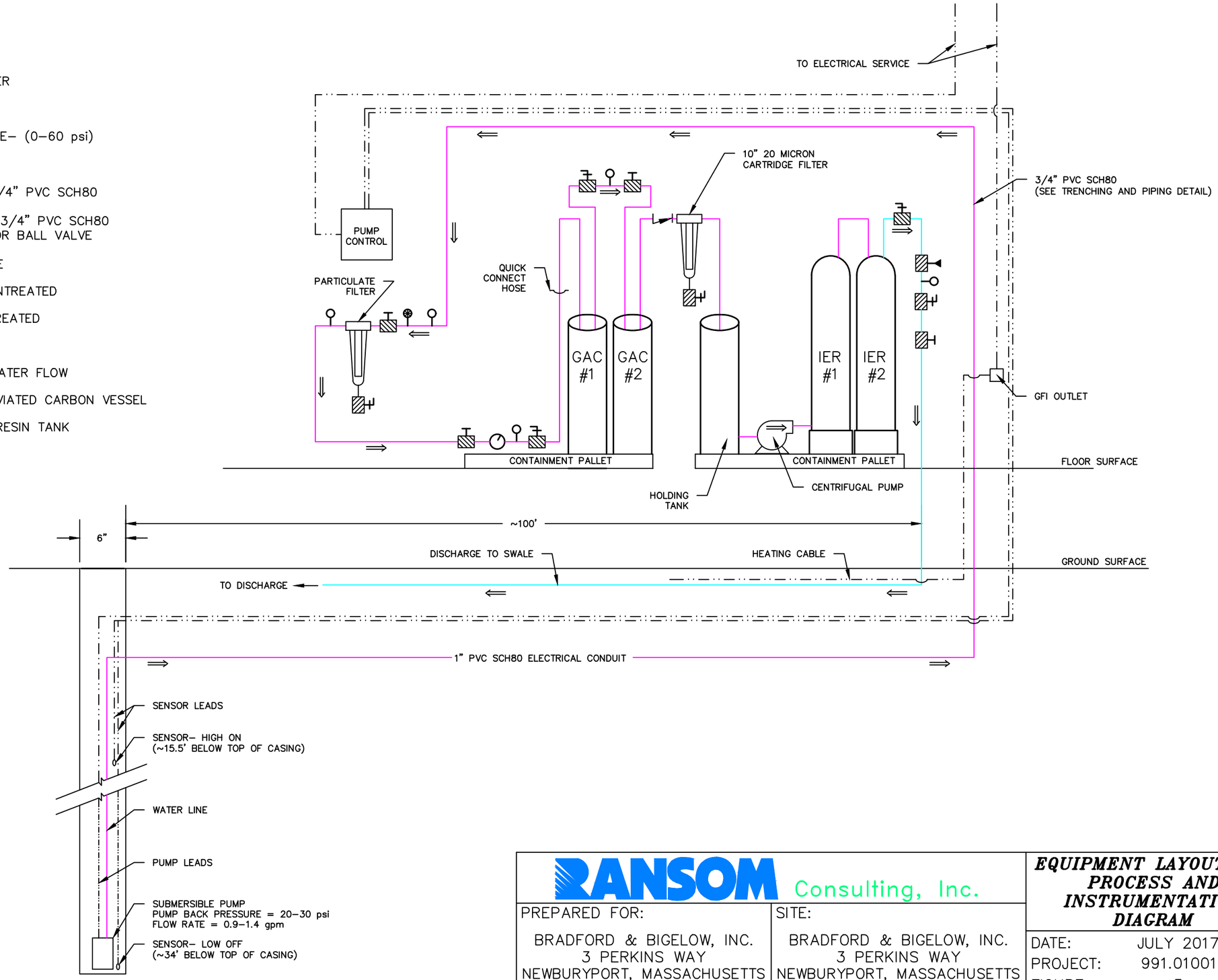
LEGEND:

- VACUUM BREAKER
- FLOW TOTALIZER
- PRESSURE GAUGE– (0–60 psi)
- GATE VALVE
- BALL VALVE– 3/4" PVC SCH80
- SAMPLE PORT– 3/4" PVC SCH80 TEE, BUSHING, OR BALL VALVE
- ½" CHECK VALVE
- WATER LINE– UNTREATED
- WATER LINE– TREATED
- ELECTRICAL LINE
- DIRECTION OF WATER FLOW
- GAC — GRANULAR ACTIVIATED CARBON VESSEL
- IER — ION EXCHANGE RESIN TANK



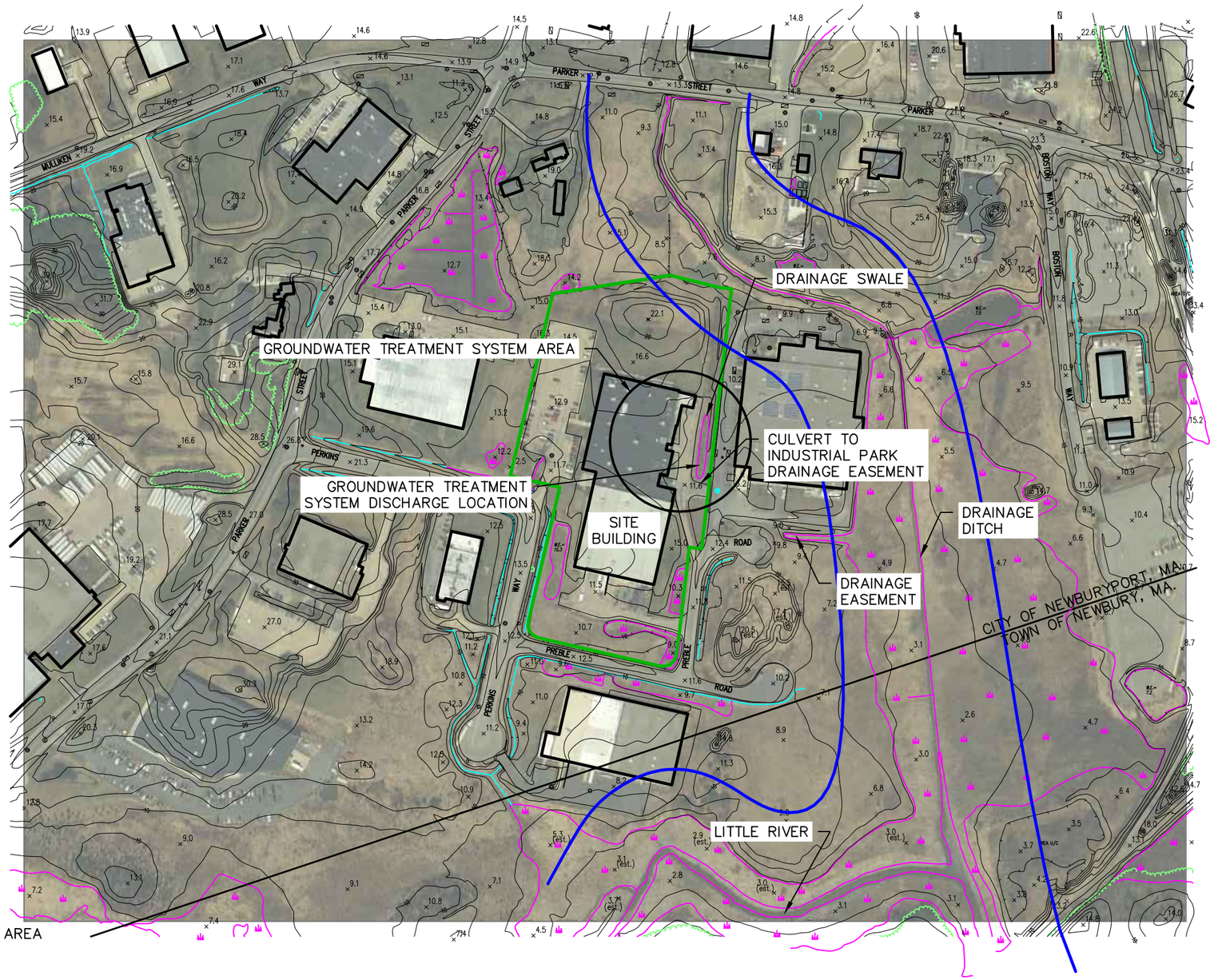
RANSOM Consulting, Inc.

PREPARED FOR:	SITE:
BRADFORD & BIGELOW, INC. 3 PERKINS WAY NEWBURYPORT, MASSACHUSETTS	BRADFORD & BIGELOW, INC. 3 PERKINS WAY NEWBURYPORT, MASSACHUSETTS

EQUIPMENT LAYOUT AND PROCESS AND INSTRUMENTATION DIAGRAM

DATE:	JULY 2017
PROJECT:	991.01001
FIGURE:	3

R:\1999\991001.1\Phase V\Semi-Annual Reports\No 24\Figures\991.01001-PIPE.dwg EQUIP LAYOUT AND PROCESS Jul 07,2017- 10:46am



LEGEND:

- WETLAND AREA
- 200' RIVERFRONT AREA
- SITE BOUNDARY

NOTES:

1. TOPOGRAPHIC CONTOURS ELEVATIONS ARE NAVD88.
2. FIGURE BASED ON GOOGLE EARTH AERIAL IMAGE (MASSGIS, COMMONWEALTH OF MASSACHUSETTS EOEA) AND PHOTOGRAMMETRY PROVIDED BY CHAS. H. SELLS, INC. DATED APRIL 17, 1997. WETLAND AREAS VERIFIED BY CITY OF NEWBURYPORT TAX ASSESSOR'S MAP 78 AND GIS DATA.
3. SOME LOCATIONS ARE APPROXIMATE IN LOCATION AND SCALE.

0 150 300 600

SCALE in FEET
1"=300'

RANSOM Consultanting, Inc.

PREPARED FOR:	SITE:
BRADFORD & BIGELOW, INC. 3 PERKINS WAY NEWBURYPORT, MASSACHUSETTS	BRADFORD & BIGELOW, INC. 3 PERKINS WAY NEWBURYPORT, MASSACHUSETTS

SITE AREA PLAN

DATE:	JULY 2017
PROJECT:	991001.1
FIGURE:	4

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ATTACHMENT B

Completed Appendix IV - NOI
Remediation General Permit

Transmittal of Notice of Intent
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3 Perkins Way
Newburyport, Massachusetts
MA DEP Release Tracking No. 3-12652

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:
Bradford & Bigelow, Inc. (former GI Plastek)</td><td colspan="3">Site address: 3 Perkins Way
Street:</td></tr>
<tr><td>City: Newburyport</td><td>State: MA</td><td>Zip: 01950</td></tr>
<tr><td rowspan="4">2. Site owner
Bradford & Bigelow, Inc.

Owner is (check one): ☐ Federal ☐ State/Tribal ■ Private
☐ Other; if so, specify:</td><td colspan="3">Contact Person: Carmen Federico</td></tr>
<tr><td colspan="2">Telephone: (978) 904-3100</td><td>Email: cfederico@bradford-bigelow.com</td></tr>
<tr><td colspan="3">Mailing address: 3 Perkins Way
Street:</td></tr>
<tr><td>City: Newburyport</td><td>State: MA</td><td>Zip: 01950</td></tr>
<tr><td rowspan="4">3. Site operator, if different than owner</td><td colspan="3">Contact Person:</td></tr>
<tr><td colspan="2">Telephone:</td><td>Email:</td></tr>
<tr><td colspan="3">Mailing address:
Street:</td></tr>
<tr><td>City:</td><td>State:</td><td>Zip:</td></tr>
<tr><td>4. NPDES permit number assigned by EPA:
MAG9100380-reissuance

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):
RTN 3-12652
☐ 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):
Little River	MA 91-11	Class B

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

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

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

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

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.	0.0335 ft^3/s
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.	0 the drainage swale is usually dry

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:

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:

2. Source water contaminants:	
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): The discharge is from a groundwater treatment system. The system operates continuously at a flow rate of 1.2 gallons per minute. The system does not contain processes that alter the temperature of the water prior to discharge.	Outfall location(s): (Latitude, Longitude) 42° 47' 52.97"N 70° 52' 58.27"E
Discharges enter the receiving water(s) via (check any that apply): ☐ Direct discharge to the receiving water ■ Indirect discharge, if so, specify: Treated groundwater is discharged via a buried pipe to a drainage swale and the associated storm water system for the industrial park, which is hydraulica ☐ 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: A reply from the City Engineer has not been received. Follow-up with the City will be performed. 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): started 7/99 end 12/30 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		✓	1	121,4500N	75	160	NA	Report mg/L	---
Chloride		✓	1	44,300.0	12,500	151,000	NA	Report µg/l	---
Total Residual Chlorine	✓		1	121,4500G	20	0	NA	0.2 mg/L	
Total Suspended Solids	✓		1	121,2540D	5000	0	NA	30 mg/L	---
Antimony	✓		1	3,200.8	4	0	NA	206 µg/L	
Arsenic		✓	1	3,200.8	1	38.84	NA	104 µg/L	
Cadmium	✓		1	3,200.8	0.2	0	NA	10.2 µg/L	
Chromium III	✓		1	107,-	10	0	NA	323 µg/L	
Chromium VI	✓		1	3,200.8	1	0	NA	323 µg/L	
Copper	✓		1	3,200.8	1	0	NA	242 µg/L	
Iron		✓	1	19,200.7	50	116	NA	5,000 µg/L	
Lead	✓		1	3,200.8	0.5	0	NA	160 µg/L	
Mercury	✓		1	3,245.1	0.2	0	NA	0.739 µg/L	
Nickel	✓		1	3,200.8	2	0	NA	1,450 µg/L	
Selenium	✓		1	3,200.8	5	0	NA	235.8 µg/L	
Silver	✓		1	3,200.8	0.4	0	NA	35.1 µg/L	
Zinc	✓		1	3,200.8	10	0	NA	420 µg/L	
Cyanide	✓		1	121,4500G	5	0	NA	178 mg/L	
B. Non-Halogenated VOCs									
Total BTEX	✓		1	1,8260C	2.5	0	NA	100 µg/L	---
Benzene	✓		1	1,8260C	1.2	0	NA	5.0 µg/L	---
1,4 Dioxane	✓		1	1,8260C-S	7.5	0	NA	200 µg/L	---
Acetone	✓		1	1,8260C	12	0	NA	7.97 mg/L	---
Phenol	✓		1	4,420.1	30	0	NA	1,080 µg/L	

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	✓		1	1,8260C	1.2	0	NA	4.4 µg/L	
1,2 Dichlorobenzene	✓		1	1,8260C	6.2	0	NA	600 µg/L	---
1,3 Dichlorobenzene	✓		1	1,8260C	6.2	0	NA	320 µg/L	---
1,4 Dichlorobenzene	✓		1	1,8260C	6.2	0	NA	5.0 µg/L	---
Total dichlorobenzene	✓		1	1,8260C	6.2	0	NA	763 µg/L in NH	---
1,1 Dichloroethane		✓	1	1,8260C	1.9	89	NA	70 µg/L	---
1,2 Dichloroethane	✓		1	1,8260C	1.2	0	NA	5.0 µg/L	---
1,1 Dichloroethylene		✓	1	1,8260C	1.2	12	NA	3.2 µg/L	---
Ethylene Dibromide	✓		1	14,504.1	0.01	0	NA	0.05 µg/L	---
Methylene Chloride	✓		1	1,8260C	12	0	NA	4.6 µg/L	---
1,1,1 Trichloroethane		✓	1	1,8260C	1.2	8.2	NA	200 µg/L	---
1,1,2 Trichloroethane	✓		1	1,8260C	1.9	0	NA	5.0 µg/L	---
Trichloroethylene		✓	1	1,8260C	1.2	160	NA	5.0 µg/L	---
Tetrachloroethylene		✓	1	1,8260C	1.2	1.6	NA	5.0 µg/L	
cis-1,2 Dichloroethylene		✓	1	1,8260C	1.2	410	NA	70 µg/L	---
Vinyl Chloride		✓	1	1,8260C	2.5	52	NA	2.0 µg/L	---
D. Non-Halogenated SVOCs									
Total Phthalates	✓		1	1,8270D	5	0	NA	190 µg/L	
Diethylhexyl phthalate	✓		1	1,8270D	3	0	NA	101 µg/L	
Total Group I PAHs	✓		1	1,8270D-SIM	0.1	0	NA	1.0 µg/L	---
Benzo(a)anthracene	✓		1	1,8270D-SIM	0.1	0	NA	As Total PAHs	
Benzo(a)pyrene	✓		1	1,8270D-SIM	0.1	0	NA		
Benzo(b)fluoranthene	✓		1	1,8270D-SIM	0.1	0	NA		
Benzo(k)fluoranthene	✓		1	1,8270D-SIM	0.1	0	NA		
Chrysene	✓		1	1,8270D-SIM	0.1	0	NA		
Dibenzo(a,h)anthracene	✓		1	1,8270D-SIM	0.1	0	NA		
Indeno(1,2,3-cd)pyrene	✓		1	1,8270D-SIM	0.1	0	NA		

Parameter	Known or believed absent	Known or believed present	# of samples	Test method (#)	Detection limit (µg/l)	Influent		Effluent Limitations	
						Daily maximum (µg/l)	Daily average (µg/l)	TBEL	WQBEL
Total Group II PAHs	✓		1	1,8270D-S	0.1	0	NA	100 µg/L	---
Naphthalene	✓		1	1,8270D-S	0.1	0	NA	20 µg/L	---
E. Halogenated SVOCs									
Total PCBs	✓		1	5,608	0.25	0	NA	0.000064 µg/L	---
Pentachlorophenol	✓		1	1,8270D-S	0.8	0	NA	1.0 µg/L	---
F. Fuels Parameters									
Total Petroleum Hydrocarbons	✓		1	74,1664A	5,000	0	NA	5.0 mg/L	---
Ethanol	✓		1	1671 Rev	2,000	0	NA	Report mg/L	---
Methyl-tert-Butyl Ether	✓		1	1,8260C	2.5	0	NA	70 µg/L	
tert-Butyl Alcohol	✓		1	1,8260C	25	0	NA	120 µg/L in MA 40 µg/L in NH	---
tert-Amyl Methyl Ether	✓		1	1,8260C	5	0	NA	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:									

E. Treatment system information

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

☐ Adsorption/Absorption ☐ Advanced Oxidation Processes ☐ Air Stripping ■ Granulated Activated Carbon ("GAC")/Liquid Phase Carbon Adsorption
■ Ion Exchange ☐ Precipitation/Coagulation/Flocculation ■ Separation/Filtration ☐ Other; if so, specify:

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

The objective of the treatment system is to recover and treat groundwater impacted by trichloroethene (TCE) and 1,1,1-trichloroethane (TCA) as part of a groundwater remediation program designed to control off-site migration. The treatment system consists of one groundwater recovery well (RW1) connected via underground piping to a particle-filtration system to remove sediment, followed by two 200-pound granular activated carbon (GAC) vessels, into a holding tank, through a booster pump to a second particle-filtration system, and into two 1.2 cf granular ferric hydroxide (GFH) ion-exchange resin tanks located in series inside the Site building. Treated groundwater is

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: Granular activated carbon (GAC) and granular ferric hydroxide (GFH) ion-exchange resin (IER)

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: Influent particle filter Is use of a flow meter feasible? (check one): ■ Yes ☐ No, if so, provide justification:	1.2
Provide the proposed maximum effluent flow in gpm.	1.5
Provide the average effluent flow in gpm.	1.2
If Activity Category IV applies, indicate the estimated total volume of water that will be discharged:	NA

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

F. Chemical and additive information

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

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

2. Provide the following information for each chemical/additive, using attachments, if necessary:

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

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

G. Endangered Species Act eligibility determination

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

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

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

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

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

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

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

H. National Historic Preservation Act eligibility determination

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

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

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

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

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

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

I. Supplemental information

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

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

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

J. Certification requirement

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I have no personal knowledge that the information submitted is other than true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.	
BMPP certification statement:	The operation and maintenance activities were conducted, results recorded, and records maintained. With the GAC and IER change out schedule established in the BMPP, the effluent limitations included in this general permit have been achieved in 2017.
Notification provided to the appropriate State, including a copy of this NOI, if required.	Check one: Yes ■ No ☐
Notification provided to the municipality in which the discharge is located, including a copy of this NOI, if requested.	Check one: Yes ■ No ☐
Notification provided to the owner of a private or municipal storm sewer system, if such system is used for site discharges, including a copy of this NOI, if requested.	Check one: Yes ☐ No ☐ NA ■
Permission obtained from the owner of a private or municipal storm sewer system, if such system is used for site discharges. If yes, attach additional conditions. If no, attach explanation and timeframe for obtaining permission.	Check one: Yes ☐ No ☐ NA ■
Notification provided to the owner/operator of the area associated with activities covered by an additional discharge permit(s). Additional discharge permit is (check one): ☐ RGP ☐ DGP ☐ CGP ☐ MSGP ☐ Individual NPDES permit ☐ Other; if so, specify:	Check one: Yes ☐ No ☐ NA ■
Signature:	Date: 07/07/2017
Print Name and Title: Carmen Frederico	

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:
Bradford & Bigelow, Inc. (former GI Plastek)</td><td colspan="3">Site address: 3 Perkins Way
Street:</td></tr>
<tr><td>City: Newburyport</td><td>State: MA</td><td>Zip: 01950</td></tr>
<tr><td rowspan="4">2. Site owner
Bradford & Bigelow, Inc.

Owner is (check one): ☐ Federal ☐ State/Tribal ■ Private
☐ Other; if so, specify:</td><td colspan="3">Contact Person: Carmen Frederico</td></tr>
<tr><td colspan="2">Telephone: (978) 904-3100</td><td>Email: cfederico@bradford-bigelow.com</td></tr>
<tr><td colspan="3">Mailing address: 3 Perkins Way
Street:</td></tr>
<tr><td>City: Newburyport</td><td>State: MA</td><td>Zip: 01950</td></tr>
<tr><td rowspan="4">3. Site operator, if different than owner</td><td colspan="3">Contact Person:</td></tr>
<tr><td colspan="2">Telephone:</td><td>Email:</td></tr>
<tr><td colspan="3">Mailing address:
Street:</td></tr>
<tr><td>City:</td><td>State:</td><td>Zip:</td></tr>
<tr><td>4. NPDES permit number assigned by EPA:
MAG9100380-reissuance

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):
RTN 3-12652
☐ 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):
Little River	MA 91-11	Class B

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

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

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

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

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.	0.0335 ft^3/s
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.	0 the drainage swale is usually dry

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:

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:

2. Source water contaminants:	
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): The discharge is from a groundwater treatment system. The system operates continuously at a flow rate of 1.2 gallons per minute. The system does not contain processes that alter the temperature of the water prior to discharge.	Outfall location(s): (Latitude, Longitude) 42º 47' 52.97"N 70º 52' 58.27"E
Discharges enter the receiving water(s) via (check any that apply): ☐ Direct discharge to the receiving water ■ Indirect discharge, if so, specify: Treated groundwater is discharged via a buried pipe to a drainage swale and the associated storm water system for the industrial park, which is hydraulica ☐ 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: A reply from the City Engineer has not been received. Follow-up with the City will be performed. 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): started 7/99 end 12/30 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="5">☐ 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		✔	1	121,4500N	75	160	NA	Report mg/L	---
Chloride		✔	1	44,300.0	12,500	151,000	NA	Report µg/l	---
Total Residual Chlorine	✔		1	121,4500C	20	0	NA	0.2 mg/L	
Total Suspended Solids	✔		1	121,2540D	5000	0	NA	30 mg/L	---
Antimony	✔		1	3,200.8	4	0	NA	206 µg/L	
Arsenic		✔	1	3,200.8	1	38.84	NA	104 µg/L	
Cadmium	✔		1	3,200.8	0.2	0	NA	10.2 µg/L	
Chromium III	✔		1	107,-	10	0	NA	323 µg/L	
Chromium VI	✔		1	3,200.8	1	0	NA	323 µg/L	
Copper	✔		1	3,200.8	1	0	NA	242 µg/L	
Iron		✔	1	19,200.7	50	116	NA	5,000 µg/L	
Lead	✔		1	3,200.8	0.5	0	NA	160 µg/L	
Mercury	✔		1	3,245.1	0.2	0	NA	0.739 µg/L	
Nickel	✔		1	3,200.8	2	0	NA	1,450 µg/L	
Selenium	✔		1	3,200.8	5	0	NA	235.8 µg/L	
Silver	✔		1	3,200.8	0.4	0	NA	35.1 µg/L	
Zinc	✔		1	3,200.8	10	0	NA	420 µg/L	
Cyanide	✔		1	121,4500C	5	0	NA	178 mg/L	
B. Non-Halogenated VOCs									
Total BTEX	✔		1	1,8260C	2.5	0	NA	100 µg/L	---
Benzene	✔		1	1,8260C	1.2	0	NA	5.0 µg/L	---
1,4 Dioxane	✔		1	1,8260C-S	7.5	0	NA	200 µg/L	---
Acetone	✔		1	1,8260C	12	0	NA	7.97 mg/L	---
Phenol	✔		1	4,420.1	30	0	NA	1,080 µg/L	

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	✔		1	1,8260C	1.2	0	NA	4.4 µg/L	
1,2 Dichlorobenzene	✔		1	1,8260C	6.2	0	NA	600 µg/L	---
1,3 Dichlorobenzene	✔		1	1,8260C	6.2	0	NA	320 µg/L	---
1,4 Dichlorobenzene	✔		1	1,8260C	6.2	0	NA	5.0 µg/L	---
Total dichlorobenzene	✔		1	1,8260C	6.2	0	NA	763 µg/L in NH	---
1,1 Dichloroethane		✔	1	1,8260C	1.9	89	NA	70 µg/L	---
1,2 Dichloroethane	✔		1	1,8260C	1.2	0	NA	5.0 µg/L	---
1,1 Dichloroethylene		✔	1	1,8260C	1.2	12	NA	3.2 µg/L	---
Ethylene Dibromide	✔		1	14,504.1	0.01	0	NA	0.05 µg/L	---
Methylene Chloride	✔		1	1,8260C	12	0	NA	4.6 µg/L	---
1,1,1 Trichloroethane		✔	1	1,8260C	1.2	8.2	NA	200 µg/L	---
1,1,2 Trichloroethane	✔		1	1,8260C	1.9	0	NA	5.0 µg/L	---
Trichloroethylene		✔	1	1,8260C	1.2	160	NA	5.0 µg/L	---
Tetrachloroethylene		✔	1	1,8260C	1.2	1.6	NA	5.0 µg/L	
cis-1,2 Dichloroethylene		✔	1	1,8260C	1.2	410	NA	70 µg/L	---
Vinyl Chloride		✔	1	1,8260C	2.5	52	NA	2.0 µg/L	---
D. Non-Halogenated SVOCs									
Total Phthalates	✔		1	1,8270D	5	0	NA	190 µg/L	
Diethylhexyl phthalate	✔		1	1,8270D	3	0	NA	101 µg/L	
Total Group I PAHs	✔		1	1,8270D-S	0.1	0	NA	1.0 µg/L	---
Benzo(a)anthracene	✔		1	1,8270D-S	0.1	0	NA	As Total PAHs	
Benzo(a)pyrene	✔		1	1,8270D-S	0.1	0	NA		
Benzo(b)fluoranthene	✔		1	1,8270D-S	0.1	0	NA		
Benzo(k)fluoranthene	✔		1	1,8270D-S	0.1	0	NA		
Chrysene	✔		1	1,8270D-S	0.1	0	NA		
Dibenzo(a,h)anthracene	✔		1	1,8270D-S	0.1	0	NA		
Indeno(1,2,3-cd)pyrene	✔		1	1,8270D-S	0.1	0	NA		

Parameter	Known or believed absent	Known or believed present	# of samples	Test method (#)	Detection limit (µg/l)	Influent		Effluent Limitations	
						Daily maximum (µg/l)	Daily average (µg/l)	TBEL	WQBEL
Total Group II PAHs	✔		1	1,8270D-S	0.1	0	NA	100 µg/L	---
Naphthalene	✔		1	1,8270D-S	0.1	0	NA	20 µg/L	---
E. Halogenated SVOCs									
Total PCBs	✔		1	5,608	0.25	0	NA	0.000064 µg/L	---
Pentachlorophenol	✔		1	1,8270D-S	0.8	0	NA	1.0 µg/L	---
F. Fuels Parameters									
Total Petroleum Hydrocarbons	✔		1	74,1664A	5,000	0	NA	5.0 mg/L	---
Ethanol	✔		1	1671 Rev	2,000	0	NA	Report mg/L	---
Methyl-tert-Butyl Ether	✔		1	1,8260C	2.5	0	NA	70 µg/L	
tert-Butyl Alcohol	✔		1	1,8260C	25	0	NA	120 µg/L in MA 40 µg/L in NH	---
tert-Amyl Methyl Ether	✔		1	1,8260C	5	0	NA	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:									

E. Treatment system information

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

☐ Adsorption/Absorption ☐ Advanced Oxidation Processes ☐ Air Stripping ■ Granulated Activated Carbon ("GAC")/Liquid Phase Carbon Adsorption
■ Ion Exchange ☐ Precipitation/Coagulation/Flocculation ■ Separation/Filtration ☐ Other; if so, specify:

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

The objective of the treatment system is to recover and treat groundwater impacted by trichloroethene (TCE) and 1,1,1-trichloroethane (TCA) as part of a groundwater remediation program designed to control off-site migration. The treatment system consists of one groundwater recovery well (RW1) connected via underground piping to a particle-filtration system to remove sediment, followed by two 200-pound granular activated carbon (GAC) vessels, into a holding tank, through a booster pump to a second particle-filtration system, and into two 1.2 cf granular ferric hydroxide (GFH) ion-exchange resin tanks located in series inside the Site building. Treated groundwater is

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: Granular activated carbon (GAC) and granular ferric hydroxide (GFH) ion-exchange resin (IER)

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: Influent particle filter Is use of a flow meter feasible? (check one): ■ Yes ☐ No, if so, provide justification:	1.2
Provide the proposed maximum effluent flow in gpm.	1.5
Provide the average effluent flow in gpm.	1.2
If Activity Category IV applies, indicate the estimated total volume of water that will be discharged:	NA

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

F. Chemical and additive information

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

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

2. Provide the following information for each chemical/additive, using attachments, if necessary:

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

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

G. Endangered Species Act eligibility determination

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

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

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

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

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

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

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

H. National Historic Preservation Act eligibility determination

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

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

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

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

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

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

I. Supplemental information

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

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

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

J. Certification requirement

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I have no personal knowledge that the information submitted is other than true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.	
BMPP certification statement:	The operation and maintenance activities were conducted, results recorded, and records maintained. With the GAC and IER change out schedule established in the BMPP, the effluent limitations included in this general permit have been achieved in 2017.
Notification provided to the appropriate State, including a copy of this NOI, if required.	Check one: Yes ■ No ☐
Notification provided to the municipality in which the discharge is located, including a copy of this NOI, if requested.	Check one: Yes ■ No ☐
Notification provided to the owner of a private or municipal storm sewer system, if such system is used for site discharges, including a copy of this NOI, if requested.	Check one: Yes ☐ No ☐ NA ■
Permission obtained from the owner of a private or municipal storm sewer system, if such system is used for site discharges. If yes, attach additional conditions. If no, attach explanation and timeframe for obtaining permission.	Check one: Yes ☐ No ☐ NA ■
Notification provided to the owner/operator of the area associated with activities covered by an additional discharge permit(s). Additional discharge permit is (check one): ☐ RGP ☐ DGP ☐ CGP ☐ MSGP ☐ Individual NPDES permit ☐ Other; if so, specify:	Check one: Yes ☐ No ☐ NA ■
Signature:	Date: 07/07/2017
Print Name and Title:	Carmen Frederico

ATTACHMENT C

Influent Chemical Analysis Results

Transmittal of Notice of Intent
2017 Remediation General Permit
MAG 910000
Bradford & Bigelow, Inc.
(Former GI Plastek Facility)
3 Perkins Way
Newburyport, Massachusetts
MA DEP Release Tracking No. 3-12652

ANALYTICAL REPORT

Lab Number:	L1719616
Client:	Ransom Consulting, Inc. 12 Kent Way Suite 100 Byfield, MA 01922-1221
ATTN:	Heather Dudley-Tatman
Phone:	(978) 465-1822
Project Name:	BRADFORD AND BIGELOW
Project Number:	991.01001
Report Date:	06/28/17

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: BRADFORD AND BIGELOW
Project Number: 991.01001

Lab Number: L1719616
Report Date: 06/28/17

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L1719616-01	INFLUENT-W1-061317	WATER	NEWBURYPORT, MA	06/13/17 09:30	06/13/17
L1719616-02	EFFLUENT-W1-061317	WATER	NEWBURYPORT, MA	06/13/17 09:55	06/13/17
L1719616-03	TRIP BLANK	WATER	NEWBURYPORT, MA	06/06/17 00:00	06/13/17

Project Name:	BRADFORD AND BIGELOW	**Lab Number:**	L1719616
Project Number:	991.01001	**Report Date:**	06/28/17

Case Narrative

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

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

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

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

HOLD POLICY

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

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

Project Name:	BRADFORD AND BIGELOW	**Lab Number:**	L1719616
Project Number:	991.01001	**Report Date:**	06/28/17

Case Narrative (continued)

Report Submission

This final report replaces the partial report issued June 21, 2017, and includes the results of all requested analyses.

The analysis of Ethanol was subcontracted. A copy of the laboratory report is included as an addendum.

Please note: This data is only available in PDF format and is not available on Data Merger.

Sample Receipt

The analyses performed were specified by the client.

A Trip Blank was received in the laboratory, but not listed on the Chain of Custody, and was not analyzed.

Volatile Organics by SIM

L1719616-01: The sample has an elevated detection limit for 1,4-Dioxane due to the dilution required by the elevated concentrations of non-target compounds in the sample.

PCBs

WG1013725: A Matrix Spike was prepared with the sample batch, however, the native sample was not available for reporting; therefore, the matrix spike results could not be reported.

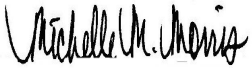
Chromium, Hexavalent

L1719616-01 was analyzed with the method required holding time exceeded due to laboratory error.

Nitrogen, Ammonia

WG1012819: A Matrix Spike and Laboratory Duplicate were prepared with the sample batch, however, the native sample was not available for reporting; therefore, the matrix spike and laboratory duplicate results could not be 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:  Michelle M. Morris

Title: Technical Director/Representative Date: 06/28/17

ORGANICS

VOLATILES

Project Name: BRADFORD AND BIGELOW
Project Number: 991.01001
Lab Number: L1719616
Report Date: 06/28/17

SAMPLE RESULTS

Lab ID: L1719616-01
Client ID: INFLUENT-W1-061317
Sample Location: NEWBURYPORT, MA

Matrix: Water
Analytical Method: 14,504.1
Analytical Date: 06/16/17 14:39
Analyst: NS

Date Collected: 06/13/17 09:30
Date Received: 06/13/17
Field Prep: Not Specified
Extraction Method: EPA 504.1
Extraction Date: 06/16/17 13:07

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

Project Name: BRADFORD AND BIGELOW **Lab Number:** L1719616

Project Number: 991.01001 **Report Date:** 06/28/17

SAMPLE RESULTS

Lab ID: L1719616-01 D
Client ID: INFLUENT-W1-061317
Sample Location: NEWBURYPORT, MA

Date Collected: 06/13/17 09:30
Date Received: 06/13/17
Field Prep: Not Specified

Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 06/15/17 13:10
Analyst: PK

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	7.5	--	2.5
1,1-Dichloroethane	89		ug/l	1.9	--	2.5
Chloroform	ND		ug/l	1.9	--	2.5
Carbon tetrachloride	ND		ug/l	1.2	--	2.5
1,2-Dichloropropane	ND		ug/l	4.4	--	2.5
Dibromochloromethane	ND		ug/l	1.2	--	2.5
1,1,2-Trichloroethane	ND		ug/l	1.9	--	2.5
Tetrachloroethene	1.6		ug/l	1.2	--	2.5
Chlorobenzene	ND		ug/l	1.2	--	2.5
Trichlorofluoromethane	ND		ug/l	6.2	--	2.5
1,2-Dichloroethane	ND		ug/l	1.2	--	2.5
1,1,1-Trichloroethane	8.2		ug/l	1.2	--	2.5
Bromodichloromethane	ND		ug/l	1.2	--	2.5
trans-1,3-Dichloropropene	ND		ug/l	1.2	--	2.5
cis-1,3-Dichloropropene	ND		ug/l	1.2	--	2.5
1,3-Dichloropropene, Total	ND		ug/l	1.2	--	2.5
1,1-Dichloropropene	ND		ug/l	6.2	--	2.5
Bromoform	ND		ug/l	5.0	--	2.5
1,1,2,2-Tetrachloroethane	ND		ug/l	1.2	--	2.5
Benzene	ND		ug/l	1.2	--	2.5
Toluene	ND		ug/l	1.9	--	2.5
Ethylbenzene	ND		ug/l	1.2	--	2.5
Chloromethane	ND		ug/l	6.2	--	2.5
Bromomethane	ND		ug/l	2.5	--	2.5
Vinyl chloride	52		ug/l	2.5	--	2.5
Chloroethane	ND		ug/l	2.5	--	2.5
1,1-Dichloroethene	12		ug/l	1.2	--	2.5
trans-1,2-Dichloroethene	13		ug/l	1.9	--	2.5
1,2-Dichloroethene, Total	420		ug/l	1.2	--	2.5
Trichloroethene	160		ug/l	1.2	--	2.5

Project Name: BRADFORD AND BIGELOW **Lab Number:** L1719616

Project Number: 991.01001 **Report Date:** 06/28/17

SAMPLE RESULTS

Lab ID: L1719616-01 D Date Collected: 06/13/17 09:30

Client ID: INFLUENT-W1-061317 Date Received: 06/13/17

Sample Location: NEWBURYPORT, MA Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,2-Dichlorobenzene	ND		ug/l	6.2	--	2.5
1,3-Dichlorobenzene	ND		ug/l	6.2	--	2.5
1,4-Dichlorobenzene	ND		ug/l	6.2	--	2.5
Methyl tert butyl ether	ND		ug/l	2.5	--	2.5
p/m-Xylene	ND		ug/l	2.5	--	2.5
o-Xylene	ND		ug/l	2.5	--	2.5
Xylenes, Total	ND		ug/l	2.5	--	2.5
cis-1,2-Dichloroethene	410		ug/l	1.2	--	2.5
Dibromomethane	ND		ug/l	12	--	2.5
1,2,3-Trichloropropane	ND		ug/l	12	--	2.5
Styrene	ND		ug/l	2.5	--	2.5
Dichlorodifluoromethane	ND		ug/l	12	--	2.5
Acetone	ND		ug/l	12	--	2.5
Carbon disulfide	ND		ug/l	12	--	2.5
2-Butanone	ND		ug/l	12	--	2.5
4-Methyl-2-pentanone	ND		ug/l	12	--	2.5
2-Hexanone	ND		ug/l	12	--	2.5
Bromochloromethane	ND		ug/l	6.2	--	2.5
Tetrahydrofuran	ND		ug/l	12	--	2.5
2,2-Dichloropropane	ND		ug/l	6.2	--	2.5
1,2-Dibromoethane	ND		ug/l	5.0	--	2.5
1,3-Dichloropropane	ND		ug/l	6.2	--	2.5
1,1,1,2-Tetrachloroethane	ND		ug/l	1.2	--	2.5
Bromobenzene	ND		ug/l	6.2	--	2.5
n-Butylbenzene	ND		ug/l	1.2	--	2.5
sec-Butylbenzene	ND		ug/l	1.2	--	2.5
tert-Butylbenzene	ND		ug/l	6.2	--	2.5
o-Chlorotoluene	ND		ug/l	6.2	--	2.5
p-Chlorotoluene	ND		ug/l	6.2	--	2.5
1,2-Dibromo-3-chloropropane	ND		ug/l	6.2	--	2.5
Hexachlorobutadiene	ND		ug/l	1.2	--	2.5
Isopropylbenzene	ND		ug/l	1.2	--	2.5
p-Isopropyltoluene	ND		ug/l	1.2	--	2.5
Naphthalene	ND		ug/l	6.2	--	2.5
n-Propylbenzene	ND		ug/l	1.2	--	2.5
1,2,3-Trichlorobenzene	ND		ug/l	6.2	--	2.5
1,2,4-Trichlorobenzene	ND		ug/l	6.2	--	2.5
1,3,5-Trimethylbenzene	ND		ug/l	6.2	--	2.5
1,2,4-Trimethylbenzene	ND		ug/l	6.2	--	2.5

Project Name: BRADFORD AND BIGELOW **Lab Number:** L1719616

Project Number: 991.01001 **Report Date:** 06/28/17

SAMPLE RESULTS

Lab ID: L1719616-01 D
Client ID: INFLUENT-W1-061317
Sample Location: NEWBURYPORT, MA

Date Collected: 06/13/17 09:30
Date Received: 06/13/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Ethyl ether	ND		ug/l	6.2	--	2.5
Diisopropyl Ether	ND		ug/l	5.0	--	2.5
Tert-Butyl Alcohol	ND		ug/l	25	--	2.5
Ethyl-Tert-Butyl-Ether	ND		ug/l	5.0	--	2.5
Tertiary-Amyl Methyl Ether	ND		ug/l	5.0	--	2.5

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	103		70-130
Toluene-d8	112		70-130
4-Bromofluorobenzene	101		70-130
Dibromofluoromethane	113		70-130

Project Name: BRADFORD AND BIGELOW
Lab Number: L1719616
Project Number: 991.01001
Report Date: 06/28/17

SAMPLE RESULTS

Lab ID: L1719616-01 D
Client ID: INFLUENT-W1-061317
Sample Location: NEWBURYPORT, MA

Date Collected: 06/13/17 09:30
Date Received: 06/13/17
Field Prep: Not Specified

Matrix: Water
Analytical Method: 1,8260C-SIM(M)
Analytical Date: 06/15/17 13:10
Analyst: PK

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS-SIM - Westborough Lab						
1,4-Dioxane	ND		ug/l	7.5	--	2.5

Project Name: BRADFORD AND BIGELOW **Lab Number:** L1719616

Project Number: 991.01001 **Report Date:** 06/28/17

SAMPLE RESULTS

Lab ID: L1719616-02
Client ID: EFFLUENT-W1-061317
Sample Location: NEWBURYPORT, MA

Date Collected: 06/13/17 09:55
Date Received: 06/13/17
Field Prep: Not Specified

Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 06/15/17 13:35
Analyst: PD

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
trans-1,2-Dichloroethene	ND		ug/l	0.75	--	1
1,2-Dichloroethene, Total	ND		ug/l	0.50	--	1
Trichloroethene	ND		ug/l	0.50	--	1

Project Name: BRADFORD AND BIGELOW **Lab Number:** L1719616

Project Number: 991.01001 **Report Date:** 06/28/17

SAMPLE RESULTS

Lab ID: L1719616-02 Date Collected: 06/13/17 09:55

Client ID: EFFLUENT-W1-061317 Date Received: 06/13/17

Sample Location: NEWBURYPORT, MA Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,2-Dichlorobenzene	ND		ug/l	2.5	--	1
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
1,2,3-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
4-Methyl-2-pentanone	ND		ug/l	5.0	--	1
2-Hexanone	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
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

Project Name: BRADFORD AND BIGELOW **Lab Number:** L1719616

Project Number: 991.01001 **Report Date:** 06/28/17

SAMPLE RESULTS

Lab ID: L1719616-02 Date Collected: 06/13/17 09:55

Client ID: EFFLUENT-W1-061317 Date Received: 06/13/17

Sample Location: NEWBURYPORT, MA Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Ethyl ether	ND		ug/l	2.5	--	1
Diisopropyl Ether	ND		ug/l	2.0	--	1
Tert-Butyl Alcohol	ND		ug/l	10	--	1
Ethyl-Tert-Butyl-Ether	ND		ug/l	2.0	--	1
Tertiary-Amyl Methyl Ether	ND		ug/l	2.0	--	1
1,4-Dioxane	ND		ug/l	250	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	120		70-130
Toluene-d8	100		70-130
4-Bromofluorobenzene	98		70-130
Dibromofluoromethane	115		70-130

Project Name: BRADFORD AND BIGELOW
Project Number: 991.01001
Lab Number: L1719616
Report Date: 06/28/17

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 06/15/17 12:10
Analyst: PD

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 02 Batch: WG1013539-5					
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	--
trans-1,2-Dichloroethene	ND		ug/l	0.75	--
1,2-Dichloroethene, Total	ND		ug/l	0.50	--

Project Name: BRADFORD AND BIGELOW
Project Number: 991.01001
Lab Number: L1719616
Report Date: 06/28/17

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 06/15/17 12:10
Analyst: PD

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 02 Batch: WG1013539-5					
Trichloroethene	ND		ug/l	0.50	--
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	--
1,2,3-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	--
4-Methyl-2-pentanone	ND		ug/l	5.0	--
2-Hexanone	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	--
sec-Butylbenzene	ND		ug/l	0.50	--
tert-Butylbenzene	ND		ug/l	2.5	--
o-Chlorotoluene	ND		ug/l	2.5	--

Project Name: BRADFORD AND BIGELOW
Project Number: 991.01001
Lab Number: L1719616
Report Date: 06/28/17

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 06/15/17 12:10
Analyst: PD

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 02 Batch: WG1013539-5					
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	--
Ethyl ether	ND		ug/l	2.5	--
Diisopropyl Ether	ND		ug/l	2.0	--
Tert-Butyl Alcohol	ND		ug/l	10	--
Ethyl-Tert-Butyl-Ether	ND		ug/l	2.0	--
Tertiary-Amyl Methyl Ether	ND		ug/l	2.0	--
1,4-Dioxane	ND		ug/l	250	--
Tentatively Identified Compounds					
No Tentatively Identified Compounds	ND		ug/l		

Project Name: BRADFORD AND BIGELOW
Project Number: 991.01001
Lab Number: L1719616
Report Date: 06/28/17

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 06/15/17 12:10
Analyst: PD

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 02 Batch: WG1013539-5					

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	119		70-130
Toluene-d8	101		70-130
4-Bromofluorobenzene	104		70-130
Dibromofluoromethane	111		70-130

Project Name: BRADFORD AND BIGELOW
Project Number: 991.01001
Lab Number: L1719616
Report Date: 06/28/17

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 06/15/17 09:45
Analyst: MM

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01 Batch: WG1013600-5					
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	--
trans-1,2-Dichloroethene	ND		ug/l	0.75	--
1,2-Dichloroethene, Total	ND		ug/l	0.50	--

Project Name: BRADFORD AND BIGELOW
Project Number: 991.01001
Lab Number: L1719616
Report Date: 06/28/17

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 06/15/17 09:45
Analyst: MM

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01 Batch: WG1013600-5					
Trichloroethene	ND		ug/l	0.50	--
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	--
1,2,3-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	--
4-Methyl-2-pentanone	ND		ug/l	5.0	--
2-Hexanone	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	--
sec-Butylbenzene	ND		ug/l	0.50	--
tert-Butylbenzene	ND		ug/l	2.5	--
o-Chlorotoluene	ND		ug/l	2.5	--

Project Name: BRADFORD AND BIGELOW
Project Number: 991.01001
Lab Number: L1719616
Report Date: 06/28/17

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 06/15/17 09:45
Analyst: MM

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01 Batch: WG1013600-5					
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	--
Ethyl ether	ND		ug/l	2.5	--
Diisopropyl Ether	ND		ug/l	2.0	--
Tert-Butyl Alcohol	ND		ug/l	10	--
Ethyl-Tert-Butyl-Ether	ND		ug/l	2.0	--
Tertiary-Amyl Methyl Ether	ND		ug/l	2.0	--
Tentatively Identified Compounds					
No Tentatively Identified Compounds	ND		ug/l		

Project Name: BRADFORD AND BIGELOW
Project Number: 991.01001
Lab Number: L1719616
Report Date: 06/28/17

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 06/15/17 09:45
Analyst: MM

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01 Batch: WG1013600-5					

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	97		70-130
Toluene-d8	113		70-130
4-Bromofluorobenzene	103		70-130
Dibromofluoromethane	107		70-130

Project Name: BRADFORD AND BIGELOW
Project Number: 991.01001
Lab Number: L1719616
Report Date: 06/28/17

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C-SIM(M)
Analytical Date: 06/15/17 09:45
Analyst: MM

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS-SIM - Westborough Lab for sample(s): 01 Batch: WG1013655-5					
1,4-Dioxane	ND		ug/l	3.0	--

Project Name: BRADFORD AND BIGELOW
Project Number: 991.01001

Lab Number: L1719616
Report Date: 06/28/17

Method Blank Analysis
Batch Quality Control

Analytical Method: 14,504.1
Analytical Date: 06/16/17 13:36
Analyst: NS

Extraction Method: EPA 504.1
Extraction Date: 06/16/17 13:07

Parameter	Result	Qualifier	Units	RL	MDL	
Microextractables by GC - Westborough Lab for sample(s): 01 Batch: WG1013969-1						
1,2-Dibromoethane	ND		ug/l	0.010	--	A

Lab Control Sample Analysis
Batch Quality Control

Project Name: BRADFORD AND BIGELOW
Project Number: 991.01001

Lab Number: L1719616
Report Date: 06/28/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 02 Batch: WG1013539-3 WG1013539-4								
Methylene chloride	87		86		70-130	1		20
1,1-Dichloroethane	97		100		70-130	3		20
Chloroform	100		110		70-130	10		20
Carbon tetrachloride	120		120		63-132	0		20
1,2-Dichloropropane	90		92		70-130	2		20
Dibromochloromethane	93		100		63-130	7		20
1,1,2-Trichloroethane	90		90		70-130	0		20
Tetrachloroethene	100		110		70-130	10		20
Chlorobenzene	94		96		75-130	2		25
Trichlorofluoromethane	120		120		62-150	0		20
1,2-Dichloroethane	110		110		70-130	0		20
1,1,1-Trichloroethane	110		110		67-130	0		20
Bromodichloromethane	98		100		67-130	2		20
trans-1,3-Dichloropropene	94		97		70-130	3		20
cis-1,3-Dichloropropene	88		93		70-130	6		20
1,1-Dichloropropene	97		99		70-130	2		20
Bromoform	97		100		54-136	3		20
1,1,2,2-Tetrachloroethane	82		86		67-130	5		20
Benzene	93		93		70-130	0		25
Toluene	92		96		70-130	4		25
Ethylbenzene	97		98		70-130	1		20
Chloromethane	120		120		64-130	0		20
Bromomethane	130		130		39-139	0		20

Lab Control Sample Analysis
Batch Quality Control

Project Name: BRADFORD AND BIGELOW
Project Number: 991.01001

Lab Number: L1719616
Report Date: 06/28/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 02 Batch: WG1013539-3 WG1013539-4								
Vinyl chloride	100		110		55-140	10		20
Chloroethane	110		110		55-138	0		20
1,1-Dichloroethene	100		100		61-145	0		25
trans-1,2-Dichloroethene	95		80		70-130	17		20
Trichloroethene	98		97		70-130	1		25
1,2-Dichlorobenzene	96		97		70-130	1		20
1,3-Dichlorobenzene	100		96		70-130	4		20
1,4-Dichlorobenzene	92		96		70-130	4		20
Methyl tert butyl ether	94		88		63-130	7		20
p/m-Xylene	100		105		70-130	5		20
o-Xylene	100		105		70-130	5		20
cis-1,2-Dichloroethene	94		96		70-130	2		20
Dibromomethane	93		98		70-130	5		20
1,2,3-Trichloropropane	91		93		64-130	2		20
Styrene	100		100		70-130	0		20
Dichlorodifluoromethane	100		110		36-147	10		20
Acetone	120		100		58-148	18		20
Carbon disulfide	110		110		51-130	0		20
2-Butanone	110		120		63-138	9		20
4-Methyl-2-pentanone	88		91		59-130	3		20
2-Hexanone	93		100		57-130	7		20
Bromochloromethane	95		98		70-130	3		20
Tetrahydrofuran	120		130		58-130	8		20

Lab Control Sample Analysis

Batch Quality Control

Project Name: BRADFORD AND BIGELOW

Project Number: 991.01001

Lab Number: L1719616

Report Date: 06/28/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 02 Batch: WG1013539-3 WG1013539-4								
2,2-Dichloropropane	110		120		63-133	9		20
1,2-Dibromoethane	83		93		70-130	11		20
1,3-Dichloropropane	83		91		70-130	9		20
1,1,1,2-Tetrachloroethane	99		100		64-130	1		20
Bromobenzene	95		91		70-130	4		20
n-Butylbenzene	94		93		53-136	1		20
sec-Butylbenzene	97		95		70-130	2		20
tert-Butylbenzene	98		99		70-130	1		20
o-Chlorotoluene	98		98		70-130	0		20
p-Chlorotoluene	96		94		70-130	2		20
1,2-Dibromo-3-chloropropane	81		96		41-144	17		20
Hexachlorobutadiene	120		110		63-130	9		20
Isopropylbenzene	98		95		70-130	3		20
p-Isopropyltoluene	98		97		70-130	1		20
Naphthalene	80		83		70-130	4		20
n-Propylbenzene	94		94		69-130	0		20
1,2,3-Trichlorobenzene	98		99		70-130	1		20
1,2,4-Trichlorobenzene	98		97		70-130	1		20
1,3,5-Trimethylbenzene	100		98		64-130	2		20
1,2,4-Trimethylbenzene	97		96		70-130	1		20
Ethyl ether	96		100		59-134	4		20
Diisopropyl Ether	110		120		70-130	9		20
Tert-Butyl Alcohol	116		128		70-130	10		20

Lab Control Sample Analysis

Batch Quality Control

Project Name: BRADFORD AND BIGELOW

Project Number: 991.01001

Lab Number: L1719616

Report Date: 06/28/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 02 Batch: WG1013539-3 WG1013539-4								
Ethyl-Tert-Butyl-Ether	98		100		70-130	2		20
Tertiary-Amyl Methyl Ether	91		95		66-130	4		20
1,4-Dioxane	108		106		56-162	2		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	114		116		70-130
Toluene-d8	98		100		70-130
4-Bromofluorobenzene	100		97		70-130
Dibromofluoromethane	103		105		70-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: BRADFORD AND BIGELOW
Project Number: 991.01001

Lab Number: L1719616
Report Date: 06/28/17

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: WG1013600-3 WG1013600-4								
Methylene chloride	86		84		70-130	2		20
1,1-Dichloroethane	97		94		70-130	3		20
Chloroform	95		93		70-130	2		20
Carbon tetrachloride	87		86		63-132	1		20
1,2-Dichloropropane	94		91		70-130	3		20
Dibromochloromethane	100		100		63-130	0		20
1,1,2-Trichloroethane	120		110		70-130	9		20
Tetrachloroethene	100		100		70-130	0		20
Chlorobenzene	95		96		75-130	1		25
Trichlorofluoromethane	84		82		62-150	2		20
1,2-Dichloroethane	92		88		70-130	4		20
1,1,1-Trichloroethane	87		84		67-130	4		20
Bromodichloromethane	95		91		67-130	4		20
trans-1,3-Dichloropropene	100		99		70-130	1		20
cis-1,3-Dichloropropene	87		86		70-130	1		20
1,1-Dichloropropene	82		80		70-130	2		20
Bromoform	96		91		54-136	5		20
1,1,2,2-Tetrachloroethane	110		110		67-130	0		20
Benzene	89		87		70-130	2		25
Toluene	100		100		70-130	0		25
Ethylbenzene	100		100		70-130	0		20
Chloromethane	92		92		64-130	0		20
Bromomethane	58		62		39-139	7		20

Lab Control Sample Analysis

Batch Quality Control

Project Name: BRADFORD AND BIGELOW

Project Number: 991.01001

Lab Number: L1719616

Report Date: 06/28/17

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: WG1013600-3 WG1013600-4								
Vinyl chloride	88		86		55-140	2		20
Chloroethane	89		86		55-138	3		20
1,1-Dichloroethene	84		82		61-145	2		25
trans-1,2-Dichloroethene	83		81		70-130	2		20
Trichloroethene	86		84		70-130	2		25
1,2-Dichlorobenzene	100		100		70-130	0		20
1,3-Dichlorobenzene	100		110		70-130	10		20
1,4-Dichlorobenzene	100		100		70-130	0		20
Methyl tert butyl ether	72		70		63-130	3		20
p/m-Xylene	105		100		70-130	5		20
o-Xylene	100		100		70-130	0		20
cis-1,2-Dichloroethene	85		83		70-130	2		20
Dibromomethane	90		86		70-130	5		20
1,2,3-Trichloropropane	110		110		64-130	0		20
Styrene	105		105		70-130	0		20
Dichlorodifluoromethane	70		68		36-147	3		20
Acetone	70		61		58-148	14		20
Carbon disulfide	100		91		51-130	9		20
2-Butanone	96		88		63-138	9		20
4-Methyl-2-pentanone	90		84		59-130	7		20
2-Hexanone	82		75		57-130	9		20
Bromochloromethane	92		92		70-130	0		20
Tetrahydrofuran	91		87		58-130	4		20

Lab Control Sample Analysis

Batch Quality Control

Project Name: BRADFORD AND BIGELOW

Project Number: 991.01001

Lab Number: L1719616

Report Date: 06/28/17

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: WG1013600-3 WG1013600-4								
2,2-Dichloropropane	91		90		63-133	1		20
1,2-Dibromoethane	95		92		70-130	3		20
1,3-Dichloropropane	110		100		70-130	10		20
1,1,1,2-Tetrachloroethane	120		120		64-130	0		20
Bromobenzene	99		100		70-130	1		20
n-Butylbenzene	110		110		53-136	0		20
sec-Butylbenzene	100		110		70-130	10		20
tert-Butylbenzene	96		99		70-130	3		20
o-Chlorotoluene	110		110		70-130	0		20
p-Chlorotoluene	100		110		70-130	10		20
1,2-Dibromo-3-chloropropane	94		86		41-144	9		20
Hexachlorobutadiene	89		90		63-130	1		20
Isopropylbenzene	97		100		70-130	3		20
p-Isopropyltoluene	95		99		70-130	4		20
Naphthalene	82		80		70-130	2		20
n-Propylbenzene	100		110		69-130	10		20
1,2,3-Trichlorobenzene	92		92		70-130	0		20
1,2,4-Trichlorobenzene	88		89		70-130	1		20
1,3,5-Trimethylbenzene	100		100		64-130	0		20
1,2,4-Trimethylbenzene	100		100		70-130	0		20
Ethyl ether	73		72		59-134	1		20
Diisopropyl Ether	93		92		70-130	1		20
Tert-Butyl Alcohol	82		72		70-130	13		20

Lab Control Sample Analysis

Batch Quality Control

Project Name: BRADFORD AND BIGELOW

Project Number: 991.01001

Lab Number: L1719616

Report Date: 06/28/17

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: WG1013600-3 WG1013600-4								
Ethyl-Tert-Butyl-Ether	82		80		70-130	2		20
Tertiary-Amyl Methyl Ether	79		78		66-130	1		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	108		103		70-130
Toluene-d8	113		114		70-130
4-Bromofluorobenzene	93		97		70-130
Dibromofluoromethane	101		102		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: BRADFORD AND BIGELOW

Project Number: 991.01001

Lab Number: L1719616

Report Date: 06/28/17

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: WG1013655-3 WG1013655-4								
1,4-Dioxane	72		78		70-130	8		25

Lab Control Sample Analysis

Batch Quality Control

Project Name: BRADFORD AND BIGELOW

Project Number: 991.01001

Lab Number: L1719616

Report Date: 06/28/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
Microextractables by GC - Westborough Lab	Associated sample(s): 01		Batch: WG1013969-2						
1,2-Dibromoethane	96		-		70-130	-			A

SEMIVOLATILES

Project Name: BRADFORD AND BIGELOW
Project Number: 991.01001
Lab Number: L1719616
Report Date: 06/28/17

SAMPLE RESULTS

Lab ID: L1719616-01
Client ID: INFLUENT-W1-061317
Sample Location: NEWBURYPORT, MA

Matrix: Water
Analytical Method: 1,8270D
Analytical Date: 06/19/17 21:41
Analyst: CB

Date Collected: 06/13/17 09:30
Date Received: 06/13/17
Field Prep: Not Specified
Extraction Method: EPA 3510C
Extraction Date: 06/15/17 19:56

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
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
Phenol	ND		ug/l	5.0	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	36		21-120
Phenol-d6	27		10-120
Nitrobenzene-d5	87		23-120
2-Fluorobiphenyl	69		15-120
2,4,6-Tribromophenol	81		10-120
4-Terphenyl-d14	74		41-149

Project Name: BRADFORD AND BIGELOW
Project Number: 991.01001
Lab Number: L1719616
Report Date: 06/28/17

SAMPLE RESULTS

Lab ID: L1719616-01
Client ID: INFLUENT-W1-061317
Sample Location: NEWBURYPORT, MA

Matrix: Water
Analytical Method: 1,8270D-SIM
Analytical Date: 06/20/17 10:16
Analyst: KL

Date Collected: 06/13/17 09:30
Date Received: 06/13/17
Field Prep: Not Specified
Extraction Method: EPA 3510C
Extraction Date: 06/15/17 19:59

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Acenaphthene	ND		ug/l	0.10	--	1
Fluoranthene	ND		ug/l	0.10	--	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	ND		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	ND		ug/l	0.10	--	1
Pentachlorophenol	ND		ug/l	0.80	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	43		21-120
Phenol-d6	35		10-120
Nitrobenzene-d5	89		23-120
2-Fluorobiphenyl	70		15-120
2,4,6-Tribromophenol	72		10-120
4-Terphenyl-d14	86		41-149

Project Name: BRADFORD AND BIGELOW
Project Number: 991.01001
Lab Number: L1719616
Report Date: 06/28/17

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D
Analytical Date: 06/16/17 22:32
Analyst: RC

Extraction Method: EPA 3510C
Extraction Date: 06/15/17 19:56

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 01 Batch: WG1013669-1					
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	--
Di-n-octylphthalate	ND		ug/l	5.0	--
Diethyl phthalate	ND		ug/l	5.0	--
Dimethyl phthalate	ND		ug/l	5.0	--
Phenol	ND		ug/l	5.0	--
Tentatively Identified Compounds					
No Tentatively Identified Compounds	ND		ug/l		

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	38		21-120
Phenol-d6	30		10-120
Nitrobenzene-d5	77		23-120
2-Fluorobiphenyl	79		15-120
2,4,6-Tribromophenol	82		10-120
4-Terphenyl-d14	83		41-149

Project Name: BRADFORD AND BIGELOW
Project Number: 991.01001
Lab Number: L1719616
Report Date: 06/28/17

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D-SIM
Analytical Date: 06/19/17 16:50
Analyst: KL

Extraction Method: EPA 3510C
Extraction Date: 06/15/17 19:59

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS-SIM - Westborough Lab for sample(s): 01 Batch: WG1013672-1					
Acenaphthene	ND		ug/l	0.10	--
Fluoranthene	ND		ug/l	0.10	--
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	--
Pentachlorophenol	ND		ug/l	0.80	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	39		21-120
Phenol-d6	30		10-120
Nitrobenzene-d5	83		23-120
2-Fluorobiphenyl	81		15-120
2,4,6-Tribromophenol	71		10-120
4-Terphenyl-d14	76		41-149

Lab Control Sample Analysis

Batch Quality Control

Project Name: BRADFORD AND BIGELOW

Project Number: 991.01001

Lab Number: L1719616

Report Date: 06/28/17

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: WG1013669-2 WG1013669-3								
Bis(2-ethylhexyl)phthalate	70		67		40-140	4		30
Butyl benzyl phthalate	70		68		40-140	3		30
Di-n-butylphthalate	64		65		40-140	2		30
Di-n-octylphthalate	77		78		40-140	1		30
Diethyl phthalate	75		65		40-140	14		30
Dimethyl phthalate	83		90		40-140	8		30
Phenol	32		33		12-110	3		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2-Fluorophenol	42		38		21-120
Phenol-d6	32		33		10-120
Nitrobenzene-d5	78		72		23-120
2-Fluorobiphenyl	66		80		15-120
2,4,6-Tribromophenol	85		68		10-120
4-Terphenyl-d14	63		70		41-149

Lab Control Sample Analysis
Batch Quality Control

Project Name: BRADFORD AND BIGELOW
Project Number: 991.01001

Lab Number: L1719616
Report Date: 06/28/17

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: WG1013672-2 WG1013672-3								
Acenaphthene	68		71		37-111	4		40
Fluoranthene	73		81		40-140	10		40
Naphthalene	62		63		40-140	2		40
Benzo(a)anthracene	75		83		40-140	10		40
Benzo(a)pyrene	84		91		40-140	8		40
Benzo(b)fluoranthene	78		88		40-140	12		40
Benzo(k)fluoranthene	75		83		40-140	10		40
Chrysene	70		78		40-140	11		40
Acenaphthylene	78		82		40-140	5		40
Anthracene	74		81		40-140	9		40
Benzo(ghi)perylene	79		87		40-140	10		40
Fluorene	73		78		40-140	7		40
Phenanthrene	66		72		40-140	9		40
Dibenzo(a,h)anthracene	72		80		40-140	11		40
Indeno(1,2,3-cd)pyrene	78		86		40-140	10		40
Pyrene	74		83		26-127	11		40
Pentachlorophenol	73		82		9-103	12		40

Lab Control Sample Analysis
Batch Quality Control

Project Name: BRADFORD AND BIGELOW
Project Number: 991.01001

Lab Number: L1719616
Report Date: 06/28/17

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: WG1013672-2 WG1013672-3								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2-Fluorophenol	44		43		21-120
Phenol-d6	36		36		10-120
Nitrobenzene-d5	82		86		23-120
2-Fluorobiphenyl	63		67		15-120
2,4,6-Tribromophenol	64		70		10-120
4-Terphenyl-d14	75		84		41-149

PCBS

Project Name: BRADFORD AND BIGELOW
Project Number: 991.01001
Lab Number: L1719616
Report Date: 06/28/17

SAMPLE RESULTS

Lab ID: L1719616-01
Client ID: INFLUENT-W1-061317
Sample Location: NEWBURYPORT, MA

Matrix: Water
Analytical Method: 5,608
Analytical Date: 06/16/17 13:52
Analyst: JW

Date Collected: 06/13/17 09:30
Date Received: 06/13/17
Field Prep: Not Specified
Extraction Method: EPA 608
Extraction Date: 06/16/17 00:27
Cleanup Method: EPA 3665A
Cleanup Date: 06/16/17
Cleanup Method: EPA 3660B
Cleanup Date: 06/16/17

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	68		30-150	A
Decachlorobiphenyl	74		30-150	A

Project Name: BRADFORD AND BIGELOW
Project Number: 991.01001

Lab Number: L1719616
Report Date: 06/28/17

Method Blank Analysis
Batch Quality Control

Analytical Method: 5,608
Analytical Date: 06/16/17 14:04
Analyst: HT

Extraction Method: EPA 608
Extraction Date: 06/16/17 00:27
Cleanup Method: EPA 3665A
Cleanup Date: 06/16/17
Cleanup Method: EPA 3660B
Cleanup Date: 06/16/17

Parameter	Result	Qualifier	Units	RL	MDL	Column
Polychlorinated Biphenyls by GC - Westborough Lab for sample(s): 01 Batch: WG1013725-1						
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	70		30-150	A
Decachlorobiphenyl	77		30-150	A

Lab Control Sample Analysis

Batch Quality Control

Project Name: BRADFORD AND BIGELOW

Project Number: 991.01001

Lab Number: L1719616

Report Date: 06/28/17

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: WG1013725-2									
Aroclor 1016	70		-		30-150	-		30	A
Aroclor 1260	69		-		30-150	-		30	A

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	69				30-150	A
Decachlorobiphenyl	70				30-150	A

Lab Duplicate Analysis
Batch Quality Control

Project Name: BRADFORD AND BIGELOW
Project Number: 991.01001

Lab Number: L1719616
Report Date: 06/28/17

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits	
Polychlorinated Biphenyls by GC - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1013725-4 QC Sample: L1719320-01 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	72		72		30-150	A
Decachlorobiphenyl	41		40		30-150	A

METALS

Project Name: BRADFORD AND BIGELOW
Project Number: 991.01001
Lab Number: L1719616
Report Date: 06/28/17

SAMPLE RESULTS

Lab ID: L1719616-01
Client ID: INFLUENT-W1-061317
Sample Location: NEWBURYPORT, MA
Matrix: Water
Date Collected: 06/13/17 09:30
Date Received: 06/13/17
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	06/15/17 10:50	06/16/17 09:45	EPA 3005A	3,200.8	AM
Arsenic, Total	0.03884		mg/l	0.00100	--	1	06/15/17 10:50	06/16/17 09:45	EPA 3005A	3,200.8	AM
Cadmium, Total	ND		mg/l	0.00020	--	1	06/15/17 10:50	06/16/17 09:45	EPA 3005A	3,200.8	AM
Chromium, Total	ND		mg/l	0.00100	--	1	06/15/17 10:50	06/16/17 09:45	EPA 3005A	3,200.8	AM
Copper, Total	ND		mg/l	0.00100	--	1	06/15/17 10:50	06/16/17 09:45	EPA 3005A	3,200.8	AM
Iron, Total	0.116		mg/l	0.050	--	1	06/15/17 10:50	06/16/17 10:59	EPA 3005A	19,200.7	PS
Lead, Total	ND		mg/l	0.00050	--	1	06/15/17 10:50	06/16/17 09:45	EPA 3005A	3,200.8	AM
Mercury, Total	ND		mg/l	0.00020	--	1	06/14/17 12:20	06/19/17 20:16	EPA 245.1	3,245.1	EA
Nickel, Total	ND		mg/l	0.00200	--	1	06/15/17 10:50	06/16/17 09:45	EPA 3005A	3,200.8	AM
Selenium, Total	ND		mg/l	0.00500	--	1	06/15/17 10:50	06/16/17 09:45	EPA 3005A	3,200.8	AM
Silver, Total	ND		mg/l	0.00040	--	1	06/15/17 10:50	06/16/17 09:45	EPA 3005A	3,200.8	AM
Zinc, Total	ND		mg/l	0.01000	--	1	06/15/17 10:50	06/16/17 09:45	EPA 3005A	3,200.8	AM
General Chemistry - Mansfield Lab											
Chromium, Trivalent	ND		mg/l	0.010	--	1		06/16/17 09:45	NA	107,-	

Project Name: BRADFORD AND BIGELOW
Lab Number: L1719616
Project Number: 991.01001
Report Date: 06/28/17

SAMPLE RESULTS

Lab ID: L1719616-02
Client ID: EFFLUENT-W1-061317
Sample Location: NEWBURYPORT, MA
Matrix: Water
Date Collected: 06/13/17 09:55
Date Received: 06/13/17
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	06/15/17 10:50	06/16/17 09:48	EPA 3005A	3,200.8	AM
Arsenic, Total	ND		mg/l	0.00100	--	1	06/15/17 10:50	06/16/17 09:48	EPA 3005A	3,200.8	AM
Cadmium, Total	ND		mg/l	0.00020	--	1	06/15/17 10:50	06/16/17 09:48	EPA 3005A	3,200.8	AM
Chromium, Total	ND		mg/l	0.00100	--	1	06/15/17 10:50	06/16/17 09:48	EPA 3005A	3,200.8	AM
Copper, Total	ND		mg/l	0.00100	--	1	06/15/17 10:50	06/16/17 09:48	EPA 3005A	3,200.8	AM
Iron, Total	ND		mg/l	0.050	--	1	06/15/17 10:50	06/16/17 20:11	EPA 3005A	19,200.7	MC
Lead, Total	ND		mg/l	0.00050	--	1	06/15/17 10:50	06/16/17 09:48	EPA 3005A	3,200.8	AM
Nickel, Total	ND		mg/l	0.00200	--	1	06/15/17 10:50	06/16/17 09:48	EPA 3005A	3,200.8	AM
Selenium, Total	ND		mg/l	0.00500	--	1	06/15/17 10:50	06/16/17 09:48	EPA 3005A	3,200.8	AM
Zinc, Total	ND		mg/l	0.01000	--	1	06/15/17 10:50	06/16/17 09:48	EPA 3005A	3,200.8	AM

Project Name: BRADFORD AND BIGELOW **Lab Number:** L1719616

Project Number: 991.01001 **Report Date:** 06/28/17

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: WG1013039-1										
Mercury, Total	ND		mg/l	0.00020	--	1	06/14/17 12:20	06/19/17 14:50	3,245.1	MG

Prep Information

Digestion Method: EPA 245.1

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01-02 Batch: WG1013394-1										
Iron, Total	ND		mg/l	0.050	--	1	06/15/17 10:50	06/16/17 11:22	19,200.7	MC

Prep Information

Digestion Method: EPA 3005A

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01-02 Batch: WG1013398-1										
Antimony, Total	ND		mg/l	0.00400	--	1	06/15/17 10:50	06/16/17 09:25	3,200.8	AM
Arsenic, Total	ND		mg/l	0.00100	--	1	06/15/17 10:50	06/16/17 09:25	3,200.8	AM
Cadmium, Total	ND		mg/l	0.00020	--	1	06/15/17 10:50	06/16/17 09:25	3,200.8	AM
Chromium, Total	ND		mg/l	0.00100	--	1	06/15/17 10:50	06/16/17 09:25	3,200.8	AM
Copper, Total	ND		mg/l	0.00100	--	1	06/15/17 10:50	06/16/17 09:25	3,200.8	AM
Lead, Total	ND		mg/l	0.00050	--	1	06/15/17 10:50	06/16/17 09:25	3,200.8	AM
Nickel, Total	ND		mg/l	0.00200	--	1	06/15/17 10:50	06/16/17 09:25	3,200.8	AM
Selenium, Total	ND		mg/l	0.00500	--	1	06/15/17 10:50	06/16/17 09:25	3,200.8	AM
Silver, Total	ND		mg/l	0.00040	--	1	06/15/17 10:50	06/16/17 09:25	3,200.8	AM
Zinc, Total	ND		mg/l	0.01000	--	1	06/15/17 10:50	06/16/17 09:25	3,200.8	AM

Prep Information

Digestion Method: EPA 3005A

Lab Control Sample Analysis

Batch Quality Control

Project Name: BRADFORD AND BIGELOW

Project Number: 991.01001

Lab Number: L1719616

Report Date: 06/28/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01 Batch: WG1013039-2								
Mercury, Total	101		-		85-115	-		
Total Metals - Mansfield Lab Associated sample(s): 01-02 Batch: WG1013394-2								
Iron, Total	101		-		85-115	-		
Total Metals - Mansfield Lab Associated sample(s): 01-02 Batch: WG1013398-2								
Antimony, Total	100		-		85-115	-		
Arsenic, Total	104		-		85-115	-		
Cadmium, Total	104		-		85-115	-		
Chromium, Total	98		-		85-115	-		
Copper, Total	95		-		85-115	-		
Lead, Total	105		-		85-115	-		
Nickel, Total	94		-		85-115	-		
Selenium, Total	96		-		85-115	-		
Silver, Total	99		-		85-115	-		
Zinc, Total	97		-		85-115	-		

Matrix Spike Analysis
Batch Quality Control

Project Name: BRADFORD AND BIGELOW
Project Number: 991.01001

Lab Number: L1719616
Report Date: 06/28/17

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: WG1013039-3 QC Sample: L1719267-01 Client ID: MS Sample												
Mercury, Total	ND	0.005	0.00479	96		-	-		70-130	-		20
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1013039-5 QC Sample: L1719404-08 Client ID: MS Sample												
Mercury, Total	ND	0.005	0.00503	101		-	-		70-130	-		20
Total Metals - Mansfield Lab Associated sample(s): 01-02 QC Batch ID: WG1013394-3 QC Sample: L1719616-01 Client ID: INFLUENT-W1-061317												
Iron, Total	0.116	1	1.10	98		-	-		75-125	-		20
Total Metals - Mansfield Lab Associated sample(s): 01-02 QC Batch ID: WG1013394-7 QC Sample: L1719935-01 Client ID: MS Sample												
Iron, Total	19.9	1	21.2	**130**	Q	-	-		75-125	-		20
Total Metals - Mansfield Lab Associated sample(s): 01-02 QC Batch ID: WG1013398-3 QC Sample: L1719616-01 Client ID: INFLUENT-W1-061317												
Antimony, Total	ND	0.5	0.5601	112		-	-		70-130	-		20
Arsenic, Total	0.03884	0.12	0.1558	97		-	-		70-130	-		20
Cadmium, Total	ND	0.051	0.05384	106		-	-		70-130	-		20
Chromium, Total	ND	0.2	0.1942	97		-	-		70-130	-		20
Copper, Total	ND	0.25	0.2404	96		-	-		70-130	-		20
Lead, Total	ND	0.51	0.5491	108		-	-		70-130	-		20
Nickel, Total	ND	0.5	0.4726	94		-	-		70-130	-		20
Selenium, Total	ND	0.12	0.1284	107		-	-		70-130	-		20
Silver, Total	ND	0.05	0.05023	100		-	-		70-130	-		20
Zinc, Total	ND	0.5	0.5002	100		-	-		70-130	-		20

Lab Duplicate Analysis
Batch Quality Control

Project Name: BRADFORD AND BIGELOW
Project Number: 991.01001

Lab Number: L1719616
Report Date: 06/28/17

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1013039-4 QC Sample: L1719267-01 Client ID: DUP Sample						
Mercury, Total	ND	0.00059	mg/l	NC		20
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1013039-6 QC Sample: L1719404-08 Client ID: DUP Sample						
Mercury, Total	ND	ND	mg/l	NC		20
Total Metals - Mansfield Lab Associated sample(s): 01-02 QC Batch ID: WG1013394-4 QC Sample: L1719616-01 Client ID: INFLUENT-W1-061317						
Iron, Total	0.116	0.107	mg/l	8		20
Total Metals - Mansfield Lab Associated sample(s): 01-02 QC Batch ID: WG1013394-8 QC Sample: L1719935-01 Client ID: DUP Sample						
Iron, Total	19.9	19.4	mg/l	3		20
Total Metals - Mansfield Lab Associated sample(s): 01-02 QC Batch ID: WG1013398-4 QC Sample: L1719616-01 Client ID: INFLUENT-W1-061317						
Antimony, Total	ND	ND	mg/l	NC		20
Arsenic, Total	0.03884	0.03590	mg/l	8		20
Cadmium, Total	ND	ND	mg/l	NC		20
Chromium, Total	ND	ND	mg/l	NC		20
Copper, Total	ND	ND	mg/l	NC		20
Lead, Total	ND	ND	mg/l	NC		20
Nickel, Total	ND	ND	mg/l	NC		20
Selenium, Total	ND	ND	mg/l	NC		20
Silver, Total	ND	ND	mg/l	NC		20
Zinc, Total	ND	ND	mg/l	NC		20

INORGANICS
&
MISCELLANEOUS

Project Name: BRADFORD AND BIGELOW
Project Number: 991.01001
Lab Number: L1719616
Report Date: 06/28/17

SAMPLE RESULTS

Lab ID: L1719616-01
Client ID: INFLUENT-W1-061317
Sample Location: NEWBURYPORT, MA
Matrix: Water

Date Collected: 06/13/17 09:30
Date Received: 06/13/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total Suspended	ND		mg/l	5.0	NA	1	-	06/14/17 03:23	121,2540D	VB
Cyanide, Total	ND		mg/l	0.005	--	1	06/14/17 10:45	06/14/17 15:56	121,4500CN-CE	LK
Chlorine, Total Residual	ND		mg/l	0.02	--	1	-	06/14/17 00:26	121,4500CL-D	AS
Nitrogen, Ammonia	0.160		mg/l	0.075	--	1	06/14/17 01:00	06/14/17 23:33	121,4500NH3-BH	AT
TPH, SGT-HEM	ND		mg/l	4.00	--	1	06/14/17 16:30	06/14/17 22:15	74,1664A	ML
Phenolics, Total	ND		mg/l	0.030	--	1	06/15/17 11:45	06/15/17 15:30	4,420.1	AW
Chromium, Hexavalent	ND		mg/l	0.010	--	1	06/15/17 02:50	06/15/17 03:04	1,7196A	VB
Anions by Ion Chromatography - Westborough Lab										
Chloride	151.		mg/l	12.5	--	25	-	06/14/17 22:13	44,300.0	AU

Project Name: BRADFORD AND BIGELOW
Project Number: 991.01001

Lab Number: L1719616
Report Date: 06/28/17

SAMPLE RESULTS

Lab ID: L1719616-02
Client ID: EFFLUENT-W1-061317
Sample Location: NEWBURYPORT, MA
Matrix: Water

Date Collected: 06/13/17 09:55
Date Received: 06/13/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total Suspended	ND		mg/l	5.0	NA	1	-	06/14/17 03:23	121,2540D	VB
Chlorine, Total Residual	ND		mg/l	0.02	--	1	-	06/14/17 00:26	121,4500CL-D	AS
Anions by Ion Chromatography - Westborough Lab										
Chloride	152.		mg/l	12.5	--	25	-	06/16/17 21:18	44,300.0	AU

Project Name: BRADFORD AND BIGELOW **Lab Number:** L1719616

Project Number: 991.01001 **Report Date:** 06/28/17

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab for sample(s): 01-02 Batch: WG1012774-1										
Chlorine, Total Residual	ND		mg/l	0.02	--	1	-	06/14/17 00:26	121,4500CL-D	AS
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG1012819-1										
Nitrogen, Ammonia	ND		mg/l	0.075	--	1	06/14/17 01:00	06/14/17 23:23	121,4500NH3-BH	AT
General Chemistry - Westborough Lab for sample(s): 01-02 Batch: WG1012834-1										
Solids, Total Suspended	ND		mg/l	5.0	NA	1	-	06/14/17 03:23	121,2540D	VB
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG1012963-1										
Cyanide, Total	ND		mg/l	0.005	--	1	06/14/17 10:45	06/14/17 16:27	121,4500CN-CE	LK
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG1013139-1										
TPH, SGT-HEM	ND		mg/l	4.00	--	1	06/14/17 16:30	06/14/17 22:15	74,1664A	ML
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG1013274-1										
Chromium, Hexavalent	ND		mg/l	0.010	--	1	06/15/17 02:50	06/15/17 03:03	1,7196A	VB
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG1013517-1										
Phenolics, Total	ND		mg/l	0.030	--	1	06/15/17 11:45	06/15/17 15:28	4,420.1	AW
Anions by Ion Chromatography - Westborough Lab for sample(s): 01 Batch: WG1013644-1										
Chloride	ND		mg/l	0.500	--	1	-	06/14/17 17:13	44,300.0	AU
Anions by Ion Chromatography - Westborough Lab for sample(s): 02 Batch: WG1014293-1										
Chloride	ND		mg/l	0.500	--	1	-	06/16/17 17:42	44,300.0	AU

Lab Control Sample Analysis

Batch Quality Control

Project Name: BRADFORD AND BIGELOW

Project Number: 991.01001

Lab Number: L1719616

Report Date: 06/28/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01-02 Batch: WG1012774-2								
Chlorine, Total Residual	109		-		90-110	-		
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1012819-2								
Nitrogen, Ammonia	92		-		80-120	-		20
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1012963-2								
Cyanide, Total	95		-		90-110	-		
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1013139-2								
TPH	90		-		64-132	-		34
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1013274-2								
Chromium, Hexavalent	96		-		85-115	-		20
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1013517-2								
Phenolics, Total	108		-		70-130	-		
Anions by Ion Chromatography - Westborough Lab Associated sample(s): 01 Batch: WG1013644-2								
Chloride	96		-		90-110	-		

Lab Control Sample Analysis

Batch Quality Control

Project Name: BRADFORD AND BIGELOW

Project Number: 991.01001

Lab Number: L1719616

Report Date: 06/28/17

Parameter	LCS %Recovery	LCSD %Recovery	%Recovery Limits	RPD	RPD Limits
Anions by Ion Chromatography - Westborough Lab Associated sample(s): 02 Batch: WG1014293-2					
Chloride	96	-	90-110	-	

Matrix Spike Analysis
Batch Quality Control

Project Name: BRADFORD AND BIGELOW
Project Number: 991.01001

Lab Number: L1719616
Report Date: 06/28/17

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): 01-02 QC Batch ID: WG1012774-4 QC Sample: L1719616-01 Client ID: INFLUENT-W1-061317												
Chlorine, Total Residual	ND	0.248	0.23	93		-	-		80-120	-		20
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1012963-4 QC Sample: L1719616-01 Client ID: INFLUENT-W1-061317												
Cyanide, Total	ND	0.2	0.190	95		-	-		90-110	-		30
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1013139-4 QC Sample: L1719685-01 Client ID: MS Sample												
TPH	ND	25	21.1	84		-	-		64-132	-		34
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1013274-4 QC Sample: L1719616-01 Client ID: INFLUENT-W1-061317												
Chromium, Hexavalent	ND	0.1	0.095	95		-	-		85-115	-		20
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1013517-4 QC Sample: L1700006-57 Client ID: MS Sample												
Phenolics, Total	ND	0.4	0.43	108		-	-		70-130	-		20
Anions by Ion Chromatography - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1013644-3 WG1013644-4 QC Sample: L1719683-01 Client ID: MS Sample												
Chloride	13.4	4	16.8	**85**	Q	16.8	**86**	Q	90-110	0		18
Anions by Ion Chromatography - Westborough Lab Associated sample(s): 02 QC Batch ID: WG1014293-3 QC Sample: L1720078-04 Client ID: MS Sample												
Chloride	ND	4	3.79	95		-	-		90-110	-		18

Lab Duplicate Analysis
Batch Quality Control

Project Name: BRADFORD AND BIGELOW
Project Number: 991.01001

Lab Number: L1719616
Report Date: 06/28/17

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01-02 QC Batch ID: WG1012774-3 QC Sample: L1719616-01 Client ID: INFLUENT-W1-061317						
Chlorine, Total Residual	ND	ND	mg/l	NC		20
General Chemistry - Westborough Lab Associated sample(s): 01-02 QC Batch ID: WG1012834-2 QC Sample: L1719566-01 Client ID: DUP Sample						
Solids, Total Suspended	140	150	mg/l	7		29
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1012963-3 QC Sample: L1719616-01 Client ID: INFLUENT-W1-061317						
Cyanide, Total	ND	ND	mg/l	NC		30
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1013139-3 QC Sample: L1719682-01 Client ID: DUP Sample						
TPH	ND	ND	mg/l	NC		34
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1013274-3 QC Sample: L1719616-01 Client ID: INFLUENT-W1-061317						
Chromium, Hexavalent	ND	ND	mg/l	NC		20
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1013517-3 QC Sample: L1700006-57 Client ID: DUP Sample						
Phenolics, Total	ND	ND	mg/l	NC		20
Anions by Ion Chromatography - Westborough Lab Associated sample(s): 02 QC Batch ID: WG1014293-4 QC Sample: L1720078-04 Client ID: DUP Sample						
Chloride	ND	ND	mg/l	NC		18

Project Name: BRADFORD AND BIGELOW
Project Number: 991.01001

Lab Number: L1719616
Report Date: 06/28/17

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(*)
L1719616-01A	Vial HCl preserved	A	NA		4.0	Y	Absent		8260-SIM(14),8260(14)
L1719616-01B	Vial HCl preserved	A	NA		4.0	Y	Absent		8260-SIM(14),8260(14)
L1719616-01C	Vial HCl preserved	A	NA		4.0	Y	Absent		8260-SIM(14),8260(14)
L1719616-01D	Vial Na2S2O3 preserved	A	NA		4.0	Y	Absent		504(14)
L1719616-01E	Vial Na2S2O3 preserved	A	NA		4.0	Y	Absent		504(14)
L1719616-01F	Vial HCl preserved	A	NA		4.0	Y	Absent		SUB-ETHANOL(14)
L1719616-01G	Vial HCl preserved	A	NA		4.0	Y	Absent		SUB-ETHANOL(14)
L1719616-01H	Vial HCl preserved	A	NA		4.0	Y	Absent		SUB-ETHANOL(14)
L1719616-01I	Plastic 250ml HNO3 preserved	A	<2	<2	4.0	Y	Absent		CD-2008T(180),NI-2008T(180),ZN-2008T(180),CU-2008T(180),FE-UI(180),AG-2008T(180),AS-2008T(180),HG-U(28),SE-2008T(180),CR-2008T(180),PB-2008T(180),SB-2008T(180)
L1719616-01J	Amber 1000ml Na2S2O3	A	7	7	4.0	Y	Absent		PCB-608(7)
L1719616-01K	Amber 1000ml Na2S2O3	A	7	7	4.0	Y	Absent		PCB-608(7)
L1719616-01L	Amber 1000ml unpreserved	A	7	7	4.0	Y	Absent		8270TCL(7),8270TCL-SIM(7)
L1719616-01M	Amber 1000ml unpreserved	A	7	7	4.0	Y	Absent		8270TCL(7),8270TCL-SIM(7)
L1719616-01N	Plastic 500ml unpreserved	A	7	7	4.0	Y	Absent		HEXCR-7196(1),TRC-4500(1)
L1719616-01O	Plastic 500ml H2SO4 preserved	A	<2	<2	4.0	Y	Absent		NH3-4500(28)
L1719616-01P	Plastic 250ml NaOH preserved	A	>12	>12	4.0	Y	Absent		TCN-4500(14)
L1719616-01Q	Amber 1000ml HCl preserved	A	NA		4.0	Y	Absent		TPH-1664(28)
L1719616-01R	Amber 1000ml HCl preserved	A	NA		4.0	Y	Absent		TPH-1664(28)
L1719616-01S	Amber 1000ml H2SO4 preserved	A	<2	<2	4.0	Y	Absent		TPHENOL-420(28)
L1719616-01T	Plastic 950ml unpreserved	A	7	7	4.0	Y	Absent		TSS-2540(7)
L1719616-02A	Vial HCl preserved	A	NA		4.0	Y	Absent		8260(14)

*Values in parentheses indicate holding time in days

Project Name: BRADFORD AND BIGELOW
Project Number: 991.01001

Lab Number: L1719616
Report Date: 06/28/17

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L1719616-02B	Vial HCl preserved	A	NA		4.0	Y	Absent		8260(14)
L1719616-02C	Vial HCl preserved	A	NA		4.0	Y	Absent		8260(14)
L1719616-02D	Plastic 250ml HNO3 preserved	A	<2	<2	4.0	Y	Absent		CD-2008T(180),NI-2008T(180),ZN-2008T(180),CU-2008T(180),FE-UI(180),AS-2008T(180),SE-2008T(180),CR-2008T(180),PB-2008T(180),SB-2008T(180)
L1719616-02E	Plastic 500ml unpreserved	A	7	7	4.0	Y	Absent		CL-300(28),TRC-4500(1)
L1719616-02F	Plastic 950ml unpreserved	A	7	7	4.0	Y	Absent		TSS-2540(7)
L1719616-03A	Vial HCl preserved	A	NA		4.0	Y	Absent		HOLD-8260(14)
L1719616-03B	Vial HCl preserved	A	NA		4.0	Y	Absent		HOLD-8260(14)
L1719616-03C	Vial Na2S2O3 preserved	A	NA		4.0	Y	Absent		HOLD-504/8011(14)
L1719616-03D	Vial Na2S2O3 preserved	A	NA		4.0	Y	Absent		HOLD-504/8011(14)

*Values in parentheses indicate holding time in days

Project Name:	BRADFORD AND BIGELOW	**Lab Number:**	L1719616
Project Number:	991.01001	**Report Date:**	06/28/17

GLOSSARY

Acronyms

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

Footnotes

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

Terms

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:	BRADFORD AND BIGELOW	**Lab Number:**	L1719616
Project Number:	991.01001	**Report Date:**	06/28/17

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:	BRADFORD AND BIGELOW	**Lab Number:**	L1719616
Project Number:	991.01001	**Report Date:**	06/28/17

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.

Serial_No:06281714:05

CHAIN OF CUSTODY

PAGE 1 OF 1

ALPHA ANALYTICAL

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

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

Date Rec'd in Lab: 6/13/17

ALPHA Job #: L1719616

Client Information

Client: Ransom Consulting, Inc.

Address: 12 Kent Way, Suite 100, Byfield, MA 01922

Phone: 978-465-1822

Email: Hdudley@ransomenv.com

Project Information

Project Name: Bradford & Bigelow

Project Location: Newburyport, MA

Project #: 991.01001

Project Manager: Heather Dudley-Tatman

ALPHA Quote #: 3244

Turn-Around Time

☒ Standard ☐ RUSH (only confirmed if pre-approved!)

Date Due:

Report Information - Data Deliverables

☒ ADEx ☒ EMAIL

Billing Information

☒ Same as Client info PO #: 10132

Regulatory Requirements & Project Information Requirements

☒ Yes ☐ No MA MCP Analytical Methods

☐ Yes ☒ No CT RCP Analytical Methods

☐ Yes ☒ No Matrix Spike Required on this SDG? (Required for MCP Inorganics)

☐ Yes ☒ No GW1 Standards (Info Required for Metals & EPH with Targets)

☒ Yes ☐ No NPDES RGP

☐ Other State /Fed Program ______ Criteria ______

Additional Project Information:

RGP

Influent metals = Hg, Ag, As, Cd, Cr, Cu, Ni, Pb, Sb, Se, Zn, Fe

Effluent metals = Cr, Cu, As, Cd, Fe, Ni, Pb, Sb, Se, Zn

ANALYSIS

Columns: VOC: ☒ 8260 ☐ 624 ☐ 524.2; SVOC: ☒ ABN ☐ PAH; METALS: ☐ MCP 13 ☐ MCP 14 ☐ RCP 15; METALS: ☐ RCRA5 ☐ RCRA8 ☐ PP13; EPH: ☐ Ranges & Targets ☐ Ranges Only; VPH: ☐ Ranges & Targets ☐ Ranges Only; ☒ PCB ☐ PEST; TPH: ☒ Quant Only ☐ Fingerprint; Ethanol / SO4; TSS TRC, Cl; Hex-Cr; TNC, NH3; Ethanol

SAMPLE INFO — Filtration: ☐ Field ☐ Lab to do (N/A); Preservation: ☐ Lab to do

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler Initials	VOC	SVOC	METALS	METALS	EPH	VPH	PCB	TPH	Ethanol	TSS TRC, Cl	Hex-Cr	TNC, NH3	Ethanol	Sample Comments	Total # Bottles
19616-01	Influent-WL-061317	6/13/17	9:30	I	CMV	X	X	X				X	X	X	X	X	X			20
02	Effluent-WL-061317	6/13/17	9:55	E	CMV	X		X						X						6

	VOC	SVOC	METALS	METALS	EPH	VPH	PCB	TPH	Ethanol	TSS TRC, Cl	Hex-Cr	TNC, NH3	Ethanol
Container Type	V	A	P				A	A	P	P	P	V	
Preservative	B	A	C				H	D	A	A	G	B/H	

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

Preservative: A= None, B= HCl, C= HNO_3, D= H_2SO_4, E= NaOH, F= MeOH, G= $NaHSO_4$, H = $Na_2S_2O_3$, I= Ascorbic Acid, J = NH_4Cl, K= Zn Acetate, O= Other

Relinquished By:	Date/Time	Received By:	Date/Time
[signature]	6/13/17 12:31	[signature] AAL	6/13/17 1231
[signature] AAL	6/13/17 1654	[signature]	6/13/17 1654

All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.

FORM NO: 01-01 (rev. 12-Mar-2012)

SUB UPS: Eurofins, Lancaster, PA JM

CHAIN OF CUSTODY

ALPHA ANALYTICAL
Westborough, MA TEL: 508-898-9220 FAX: 508-898-9193
Mansfield, MA TEL: 508-822-9300 FAX: 508-822-3288

Date Rec'd in Lab:

ALPHA Job #: L1719616

Client Information

Client: Alpha Analytical Lab
Address: 8 Walkup Drive
Westborough, Ma 01581
Phone: 508-898-9220
Fax:
Email: subreports@alphalab.com
☐ These samples have been Previously analyzed by Alpha

Project Information

Project Name:
Project Location: MA
Project #:
Project Manager: Melissa Gulli
ALPHA Quote #:

Turn-Around Time

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)
Due Date: Time:

Report Information Data Deliverables

☐ FAX ☐ EMAIL
☐ ADEx ☐ Add'l Deliverables

Billing Information

☐ Same as Client info PO #:

Regulatory Requirements/Report Limits

State/Fed Program *Criteria*

MCP PRESUMPTIVE CERTAINTY-CT REASONABLE CONFIDENCE PROTOCOLS

X Yes ☐ No Are MCP Analytical Methods Required?
☐ Yes ☐ No Are CT RCP (Reasonable Confidence Protocols) Required?

Other Project Specific Requirements/Comments/Detection Limits:
Please reference Alpha Job #L1719616 on this report.

ANALYSIS

Ethanol Only via 1671

SAMPLE HANDLING
Filtration
☐ Done
☐ Not Needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

Sample Specific Comments

TOTAL # BOTTLES

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	Ethanol Only via 1671	TOTAL # BOTTLES
	INFLUENT-W1-061317	6/13/17	09:30	W		X	3

PLEASE ANSWER QUESTIONS ABOVE!

IS YOUR PROJECT MA MCP *or* CT RCP?

Container Type	V		-	-	-	-	-	-	-	-	-	-	
Preservative	B		-	-	-	-	-	-	-	-	-	-	

Relinquished By:	Date/Time	Received By:	Date/Time

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Payment Terms.

FORM NO: 01-01(I) (rev. 30-JUL-07)

eurofins | Lancaster Laboratories Environmental

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-2681 • www.LancasterLabs.com

Analysis Report

ANALYTICAL RESULTS

Prepared by:

Eurofins Lancaster Laboratories Environmental
2425 New Holland Pike
Lancaster, PA 17601

Prepared for:

Alpha Analytical, Inc.
145 Flanders Road
Westborough MA 01581

Report Date: June 28, 2017

Project: L1719616

Submittal Date: 06/15/2017
Group Number: 1813715
PO Number: L1719616
State of Sample Origin: MA

Client Sample Description	Lancaster Labs (LL) #
Influent-W1-061317 Water Sample	9050206

The specific methodologies used in obtaining the enclosed analytical results are indicated on the Laboratory Sample Analysis Record.

Regulatory agencies do not accredit laboratories for all methods, analytes, and matrices. Our current scopes of accreditation can be viewed at http://www.eurofinsus.com/environment-testing/laboratories/eurofins-lancaster-laboratories-environmental/resources/certifications/ . To request copies of prior scopes of accreditation, contact your project manager.

Electronic Copy To	Alpha Analytical, Inc.	Attn: Melissa Gulli
Electronic Copy To	Alpha Analytical, Inc.	Attn: Sublab Contact

Respectfully Submitted,

Bonnie Stadelmann

Bonnie Stadelmann
Senior Project Manager

(312) 590-3133

eurofins | Lancaster Laboratories Environmental

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-2681 • www.LancasterLabs.com

Analysis Report

Sample Description: Influent-W1-061317 Water Sample
L1719616

LL Sample # WW 9050206
LL Group # 1813715
Account # 09847

Project Name: L1719616

Collected: 06/13/2017 09:30

Submitted: 06/15/2017 09:30
Reported: 06/28/2017 08:17

Alpha Analytical, Inc.
145 Flanders Road
Westborough MA 01581

IWJ01

CAT No.	Analysis Name	CAS Number	Result	Limit of Quantitation	Dilution Factor
GC Miscellaneous	**EPA 1671 Rev A**		**ug/l**	**ug/l**	
02366	ethanol	64-17-5	N.D.	2,000	1

Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
02366	EPA 1671 VOCs	EPA 1671 Rev A	1	171770027A	06/27/2017 03:38	Tyler O Griffin	1

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Analysis Report

Quality Control Summary

Client Name: Alpha Analytical, Inc. Group Number: 1813715
Reported: 06/28/2017 08:17

Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

All Inorganic Initial Calibration and Continuing Calibration Blanks met acceptable method criteria unless otherwise noted on the Analysis Report.

Method Blank

Analysis Name	Result	LOQ
	ug/l	ug/l
Batch number: 171770027A	Sample number(s): 9050206	
ethanol	N.D.	2,000

LCS/LCSD

Analysis Name	LCS Spike Added	LCS Conc	LCSD Spike Added	LCSD Conc	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
	ug/l	ug/l	ug/l	ug/l					
Batch number: 171770027A	Sample number(s): 9050206								
ethanol	4010	3999.06	4010	4023.46	100	100	70-132	1	30

MS/MSD

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike

Analysis Name	Unspiked Conc	MS Spike Added	MS Conc	MSD Spike Added	MSD Conc	MS %Rec	MSD %Rec	MS/MSD Limits	RPD	RPD Max
	ug/l	ug/l	ug/l	ug/l	ug/l					
Batch number: 171770027A	Sample number(s): 9050206 UNSPK: P052778									
ethanol	N.D.	4010	3967.3	4010	3833.01	99	96	70-132	3	30

Surrogate Quality Control

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: EPA 1671 VOCs
Batch number: 171770027A

	Amyl Alcohol
9050206	98
Blank	93
LCS	102

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.
P###### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

eurofins | Lancaster Laboratories Environmental

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Analysis Report

Quality Control Summary

Client Name: Alpha Analytical, Inc. Group Number: 1813715
Reported: 06/28/2017 08:17

Surrogate Quality Control

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: EPA 1671 VOCs
Batch number: 171770027A

	Amyl Alcohol
LCSD	109
MS	98
MSD	103
Limits:	52-144

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.
P###### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

Serial_No:06281714:05

SUB UPS: Eurofins, Lancaster, PA 1M

A-9847/1813715/9050206

CHAIN OF CUSTODY

PAGE 1 OF 1

ALPHA ANALYTICAL

Westborough, MA TEL: 508-898-9220 FAX: 508-898-9193
Mansfield, MA TEL: 508-822-9300 FAX: 508-822-3288

Date Rec'd in Lab:

ALPHA Job #: L1719616

Client Information

Client: Alpha Analytical Lab
Address: 8 Walkup Drive
Westborough, Ma 01581
Phone: 508-898-9220
Fax:
Email: subreports@alphalab.com

☐ These samples have been Previously analyzed by Alpha

Project Information

Project Name:
Project Location: MA
Project #:
Project Manager: Melissa Gulli
ALPHA Quote #:

Turn-Around Time

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)

Due Date: Time:

Report Information Data Deliverables

☐ FAX ☐ EMAIL
☐ ADEx ☐ Add'l Deliverables

Billing Information

☐ Same as Client info PO #:

Regulatory Requirements/Report Limits

State/Fed Program | Criteria

MCP PRESUMPTIVE CERTAINTY-CT REASONABLE CONFIDENCE PROTOCOLS

X Yes ☐ No Are MCP Analytical Methods Required?
☐ Yes ☐ No Are CT RCP (Reasonable Confidence Protocols) Required?

Other Project Specific Requirements/Comments/Detection Limits:
Please reference Alpha Job #L1719616 on this report.

ANALYSIS

SAMPLE HANDLING
Filtration
☐ Done
☐ Not Needed
☐ 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	Ethanol Only via 1671	Sample Specific Comments	TOTAL # BOTTLES
	INFLUENT-W1-061317	6/13/17	09:30	W		x		3

Container Type	V		-	-	-	-	-	-	-	-	-	-
Preservative	B		-	-	-	-	-	-	-	-	-	-

PLEASE ANSWER QUESTIONS ABOVE!

IS YOUR PROJECT MA MCP *or* CT RCP?

Relinquished By:	Date/Time	Received By:	Date/Time
	6/14/17		6/15/17 930

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Payment Terms.

FORM NO: 01-01(I) (rev. 30-JUL-07)

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Sample Administration Receipt Documentation Log

Doc Log ID: 186408

Group Number(s): 183715

Client: ALPHA ANALYTICAL

Delivery and Receipt Information

Delivery Method:	UPS	Arrival Timestamp:	06/15/2017 9:30
Number of Packages:	1	Number of Projects:	1
State/Province of Origin:	MA		

Arrival Condition Summary

Shipping Container Sealed:	Yes	Sample IDs on COC match Containers:	Yes
Custody Seal Present:	No	Sample Date/Times match COC:	Yes
Samples Chilled:	Yes	VOA Vial Headspace ≥ 6mm:	N/A
Paperwork Enclosed:	Yes	Total Trip Blank Qty:	0
Samples Intact:	Yes	Air Quality Samples Present:	No
Missing Samples:	No		
Extra Samples:	No		
Discrepancy in Container Qty on COC:	No		

Unpacked by Wendy Wakeley (1669) at 12:28 on 06/15/2017

Samples Chilled Details

Thermometer Types: DT = Digital (Temp. Bottle) IR = Infrared (Surface Temp) All Temperatures in °C.

Cooler #	Thermometer ID	Corrected Temp	Therm. Type	Ice Type	Ice Present?	Ice Container	Elevated Temp?
1	DT146	2.5	DT	Wet	Y	Bagged	N

2425 New Holland Pike
Lancaster, PA 17605-2425

T | 717-656-2300
F | 717-656-2681
www.LancasterLabs.com

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Explanation of Symbols and Abbreviations

The following defines common symbols and abbreviations used in reporting technical data:

BMQL	Below Minimum Quantitation Level	**mg**	milligram(s)
C	degrees Celsius	**mL**	milliliter(s)
cfu	colony forming units	**MPN**	Most Probable Number
CP Units	cobalt-chloroplatinate units	**N.D.**	none detected
F	degrees Fahrenheit	**ng**	nanogram(s)
g	gram(s)	**NTU**	nephelometric turbidity units
IU	International Units	**pg/L**	picogram/liter
kg	kilogram(s)	**RL**	Reporting Limit
L	liter(s)	**TNTC**	Too Numerous To Count
lb.	pound(s)	**µg**	microgram(s)
m3	cubic meter(s)	**µL**	microliter(s)
meq	milliequivalents	**umhos/cm**	micromhos/cm

< less than

> greater than

ppm parts per million - One ppm is equivalent to one milligram per kilogram (mg/kg) or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter per liter of gas.

ppb parts per billion

Dry weight basis Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture. All other results are reported on an as-received basis.

Laboratory Data Qualifiers:

C - Result confirmed by reanalysis
E - Concentration exceeds the calibration range
J (or G, I, X) - estimated value ≥ the Method Detection Limit (MDL or DL) and < the Limit of Quantitation (LOQ or RL)
P - Concentration difference between the primary and confirmation column >40%. The lower result is reported.
U - Analyte was not detected at the value indicated
V - Concentration difference between the primary and confirmation column >100%. The reporting limit is raised due to this disparity and evident interference…
W - The dissolved oxygen uptake for the unseeded blank is greater than 0.20 mg/L.

Additional Organic and Inorganic CLP qualifiers may be used with Form 1 reports as defined by the CLP methods.
Qualifiers specific to Dioxin/Furans and PCB Congeners are detailed on the individual Analysis Report.

Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis.

Measurement uncertainty values, as applicable, are available upon request.

Tests results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff.

This report shall not be reproduced except in full, without the written approval of the laboratory.

Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as “analyze immediately” are not performed within 15 minutes.

WARRANTY AND LIMITS OF LIABILITY - In accepting analytical work, we warrant the accuracy of test results for the sample as submitted. THE FOREGOING EXPRESS WARRANTY IS EXCLUSIVE AND IS GIVEN IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED. WE DISCLAIM ANY OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING A WARRANTY OF FITNESS FOR PARTICULAR PURPOSE AND WARRANTY OF MERCHANTABILITY. IN NO EVENT SHALL EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL, LLC BE LIABLE FOR INDIRECT, SPECIAL, CONSEQUENTIAL, OR INCIDENTAL DAMAGES INCLUDING, BUT NOT LIMITED TO, DAMAGES FOR LOSS OF PROFIT OR GOODWILL REGARDLESS OF (A) THE NEGLIGENCE (EITHER SOLE OR CONCURRENT) OF EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL AND (B) WHETHER EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL HAS BEEN INFORMED OF THE POSSIBILITY OF SUCH DAMAGES. We accept no legal responsibility for the purposes for which the client uses the test results. No purchase order or other order for work shall be accepted by Eurofins Lancaster Laboratories Environmental which includes any conditions that vary from the Standard Terms and Conditions, and Eurofins Lancaster Laboratories Environmental hereby objects to any conflicting terms contained in any acceptance or order submitted by client.

ATTACHMENT D

USFWS Consultation

Transmittal of Notice of Intent
2017 Remediation General Permit
MAG 910000
Bradford & Bigelow, Inc.
(Former GI Plastek Facility)
3 Perkins Way
Newburyport, Massachusetts
MA DEP Release Tracking No. 3-12652

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