October 24, 2019

VIA E-MAIL
NPDES.Generalpermits@epa.gov

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

Re: Remediation General Permit (RGP) – Notice of Intent (NOI)
Commercial Property
100 Simplex Drive
Westminster, Massachusetts 01473

To Whom It May Concern:

On behalf of Great Northern Dunnage, LLC, EnviroTrac Ltd. (EnviroTrac) is submitting the attached RGP – NOI for the above-referenced location (hereafter referred to as the Site). A locus map (**Figure 1**) provides the regional location of the Site. The RGP-NOI form is included as **Attachment A**.

I. Introduction

The Site is a commercial/industrial property developed with two structures. The main building is approximately 520,000 square feet, which is divided into four sections, with each section occupied by a tenant. Construction activities related to exterior improvements of the main building were initiated in August 2019, which includes the construction of eight loading bays at the southwestern portion of the main building (**Figure 2**). Based on previous environmental investigations, the depth to the water table at the Site ranges from approximately three to 13 feet below ground surface (bgs). Excavation to approximately seven to eight feet bgs will be required for the construction of the loading bays; therefore, temporary dewatering of groundwater will be necessary.

Chlorinated volatile organic compound (CVOC) impacts to soil and groundwater exist at the Site. The Massachusetts Department of Environmental Protection (MassDEP) assigned Release Tracking Number (RTN) 2-10229 to the Site in 1993. Response Actions in accordance with the Massachusetts Contingency Plan (MCP) for RTN 2-10229 were conducted from 1993 to 2018. A Permanent Solution Statement was submitted to MassDEP in July 2019.

The Town of Westminster Department of Public Works informed EnviroTrac via email on August 29, 2019 that the discharge of dewatered groundwater to the municipal sanitary sewer system is prohibited, as flow from the system is conveyed to the City of Fitchburg Wastewater Treatment Plant (WWTP). EnviroTrac spoke with a representative from the Fitchburg WWTP on September 30, 2019, who also stated that discharge into the sanitary sewer system is prohibited. Therefore, this RGP-NOI is required to discharge to the stormwater system.

II. Treatment System

During construction dewatering, groundwater will be pumped from the excavation into a fractionation (frac) tank for sediment collection and settlement. If necessary, dewatered groundwater may be pumped through a water aeration system, which consists of two parallel aerators, to aid in precipitating iron, zinc, and other residual metals.

From the frac tank, groundwater will be pumped and treated through two parallel multi-bag filter housing units equipped with bag filters ranging in size to a maximum of 50 microns to remove suspended solids, as shown in **Figure 3**. After the bag filters, groundwater will be processed through two 2,000-pound granulated activated carbon filter units to remove any potential dissolved CVOCs. Groundwater will then flow through two parallel cartridge filter units equipped with cartridge filters ranging in size to a maximum of five microns as a final process to remove suspended solids. Following the cartridge filters, groundwater will flow through a totalizer prior to discharge to a receiving catch basin located in the vicinity of the proposed loading bays, as shown in **Figure 2**.

The design capacity of the treatment system is 100 gallons per minute (gpm). Based on subsurface investigations completed at the Site, soil in the area of the proposed loading bays generally consists of medium-coarse to coarse sand with gravel to a depth of approximately 15 feet bgs. The expected discharge rate of treated groundwater, therefore, is expected to be approximately 50 to 75 gpm to maintain sufficient local groundwater depression to complete the proposed construction activities in dry conditions.

In summary, dewatering will occur as needed to keep excavations free of standing groundwater. Treatment of dewatered groundwater will occur as needed to empty the frac tank. It is anticipated that discharge of the treated groundwater will occur during periods without storm or rain events. A schematic of the proposed treatment system is included as **Figure 3**.

III. Discharge

The treated effluent will be discharged via a catch basin located at the southeastern corner of the manufacturing building as shown on the Site Plan (**Figure 2**) and the Discharge Map (**Figure 4**).

The catch basin discharges through a series of drainpipes and drain manholes to a drainage swale located behind (north of) the warehouse building, across Simplex Drive. Water from the drainage swale flows east-southeast through wetlands and two fire ponds before flowing off the Site. Once off the Site, water flows through other streams, tributaries, and/or wetlands before ultimately connecting to Round Meadow Pond (Segment MA81114, Class B). Round Meadow Pond is not an Outstanding Resource Water and it is not listed under Category 5 of the 303(d) list (“Waters Requiring a TMDL”). The location of the drainage swale is depicted on **Figure 4**. Receiving waters are depicted on **Figure 5**.

IV. Source Area Sampling and Dilution Factor Calculation

On August 30, 2019, a groundwater sample was collected from a monitoring well (ETMW-1) located adjacent to the proposed excavation area. Based on analytical data, volatile organic compounds (VOCs), ammonia, chloride, total suspended solids (TSS), cyanide and metals were

detected in groundwater. Concentrations of several metals (arsenic, cadmium, trivalent chromium, copper, lead, nickel, selenium, and zinc) exceeded applicable Effluent Limits listed in the RGP under the National Pollutant Discharge Elimination System (NPDES) for Discharges in Massachusetts. Analytical data are summarized in **Table 1**. The laboratory analytical reports supporting this NOI is included as **Attachment B**.

No dilution factor was calculated for metals which exceeded applicable Effluent Limitations (refer to **Attachment C**). As shown in **Table 1**, concentrations of arsenic, cadmium, chromium, copper, iron, lead, nickel, selenium and zinc exceeded applicable Total Recoverable Metal Limits as established in the RGP.

Please note that the required ethanol analysis was conducted using method 624.1 and not one of the specified methods in Appendix VII. In accordance with the existing data substitution section in Part 4.1.5.a of the RGP, the data obtained by method 624.1 is sufficient for the EPA to make a determination of coverage because the analysis meets the minimum level (ML) requirement. For ethanol, the detection limit must be 400 µg/L or less or ethanol is clearly detected. The analytical report states the detection limit for ethanol was 10.5 µg/L and the reporting limit was 100 µg/L.

V. Historic Places

According to the National Park Service's National Register Information System (NRIS) (http://www.nps.gov/history) four historical sites are located in Westminster, Massachusetts. Three of the sites are located approximately 2.5 miles from the Site. The remaining site (Westminster Village – Academy Hill Historic District) is located approximately 0.8 miles southeast of the Site and encompasses the first town center of Westminster. Given the nature of the discharge it is unlikely that there will be any adverse effects to federal or state-listed historical sites. NRIS listings in Massachusetts have not yet been digitized; however, the spreadsheet of National Register listed properties can be accessed at http://nps.gov/nr/research. A copy of the NRIS listing for Westminster is included in **Attachment D**.

The Massachusetts Historical Commission's Massachusetts Cultural Resource Information System (MACRIS) (http://mhc-macris.net/index.htm) listed 229 historical sites in Westminster. Of those, the nearest historic sites are approximately 38 locations, located approximately 1,800 feet south of the Site. These 38 historic sites consist of houses, buildings, and/or monuments, all of which are located along Main Street (Route 2A). Given the nature of the discharge and the distances of these historic locations to the Site, the discharge will not likely adversely affect federal or state-listed historical sites. A copy of the MACRIS listing is included in **Attachment D**.

VI. Endangered Species

As described in Appendix I of the RGP, in order to determine if the discharge meets the Endangered Species Act (ESA) Eligibility Criteria for the U. S. Fish and Wildlife Service (FWS), the FWS Information, Planning, and Conservation (IPaC) online system was used. According to the IPaC system, the Site is located within a county (Worcester) listed by the FWS as a habitat of the federally threatened northern long-eared bat. During the summer, this species can be found in cavities or crevices of both live and dead trees. During the winter, they are found in

caves or mines. The bat emerges to feed at dusk, primarily flying throughout the understory of wooded and/or forested areas.

No caves or mines are located within proximity of the discharge area. Also, as depicted in the MCP Priority Resource Map provided as **Figure 6**, the Site is not located within a Natural Heritage Endangered Species Program Estimated or Priority Habitat or within an Area of Critical Concern. Further, **Figures 4 and 5** show the area of discharge as wooded marsh and/or wetlands. Based on the foregoing and the nature of the discharge, it is unlikely that discharge will adversely affect this species or its critical habitat. A copy of the IPaC Resource List from the FWS is included in **Attachment E**.

VII. State and Local Requirements

The excavation and dewatering will be conducted as a Release Abatement Measure (RAM) pursuant to MCP 310 CMR 40.0440. A RAM Plan will be submitted to MassDEP as BWSC Form 106; therefore, completion and submittal of Massachusetts Application Form BRPWM 12 or payment of a state fee are not required.

In accordance with the Town of Westminster Conservation Commission Bylaws, a NOI was filed with the Town of Westminster Conservation Commission on September 17, 2019. The NOI is expected to be approved at the October 24, 2019 Conservation Commission meeting. An Order of Conditions will be issued shortly thereafter.

If you have any questions or require further information, please contact the undersigned at (781) 793-0074.

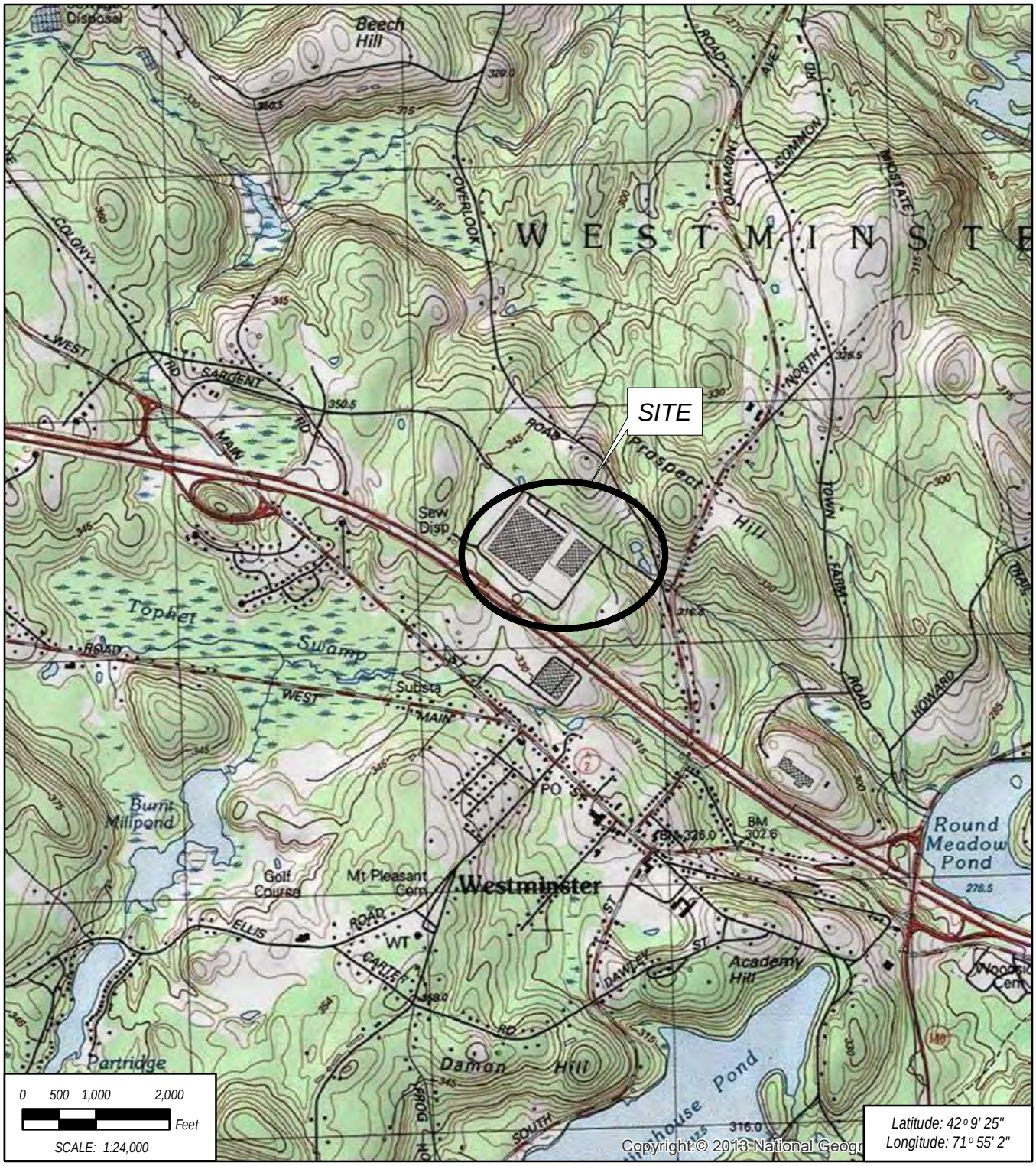
Sincerely,
EnviroTrac Ltd.

Dena Tomassi
Project Manager

cc: MassDEP Central Regional Office
Town of Westminster Board of Selectmen
Town of Westminster Conservation Commission

Attachments

FIGURES



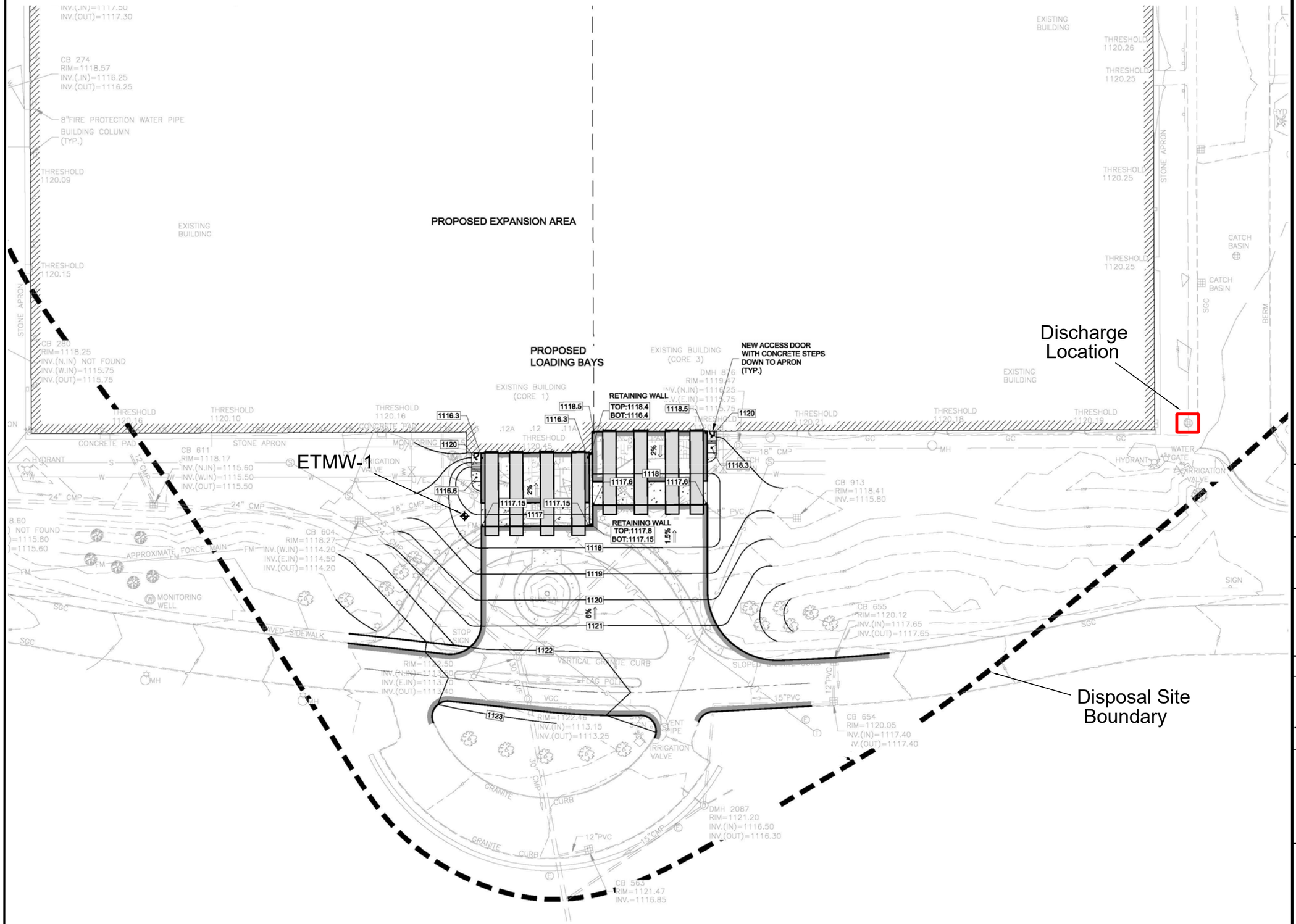
SOURCE: OFFICE OF GEOGRAPHIC INFORMATION (MassGIS), COMMONWEALTH OF MASSACHUSETTS INFORMATION TECHNOLOGY DIVISION
USGS TOPOGRAPHIC MAPS: GARDNER, ASHBY, FITCHBURG, AND WACHUSETT MIN, MA QUADRANGLES

EnviroTrac
Environmental Services
2 Merchant Street, Suite 2
Sharon, Massachusetts 02067
P: (781) 793-0074
F: (781) 793-7877
www.EnviroTrac.com

LOCUS MAP

COMMERCIAL PROPERTY
100 SIMPLEX DRIVE
WESTMINSTER, MASSACHUSETTS

DRAWN BY	PROJECT	DATE	FIGURE
DT	GFI WESTMINSTER	9/17/2019	**1**



APPROXIMATE SCALE

0 15 FT 30

1 IN. = 30 FT.

SOURCE: SFC ENGINEERING, "PRELIMINARY SITE GRADING," DATED 07/23/2019.
NOT FOR CONSTRUCTION PURPOSES.

DRAWN/REVISED BY: DT/DT
REVISION DATE: 09/11/2019

FIGURE 2

DRAWING TITLE

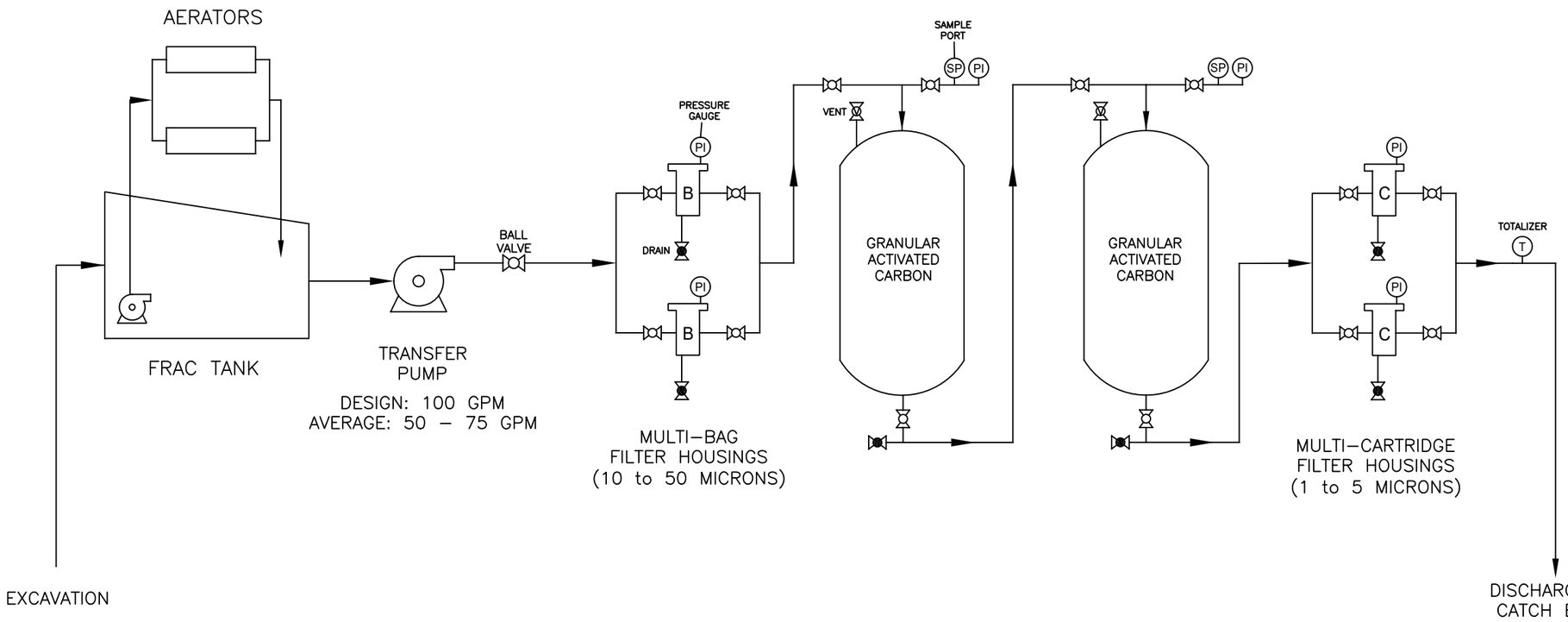
SITE PLAN

PREPARED FOR

COMMERCIAL PROPERTY
100 SIMPLEX DRIVE
WESTMINSTER, MASSACHUSETTS

EnviroTrac
2 Merchant Street, Suite 2
Sharon, Massachusetts 02067
PHONE: (781)793-0074 FAX: (781)793-7877

PROCESS FLOW DIAGRAM
DEWATERING TREATMENT SYSTEM (TYP.)



NOT TO SCALE

DRAWN BY: DT
REVISION DATE: 09/10/2019

FIGURE 3

DRAWING TITLE

PROCESS FLOW DIAGRAM

PREPARED FOR

COMMERCIAL PROPERTY
100 SIMPLEX DRIVE
WESTMINSTER, MASSACHUSETTS

EnviroTrac
ENVIRONMENTAL SERVICES
2 MERCHANT STREET, SUITE 2, SHARON, MA
PHONE: (781) 793–0074 FAX: (781) 793–7877

LEGEND

- Parcels
- Wetland
- Wooded Wetland
- Salt Marsh
- Open Water

Wetland Buffer Zones (feet)

- 25
- 50
- 100
- Discharge Path and Direction

Data Source: Office of Geographic and Environmental Information (MassGIS), Commonwealth of Massachusetts Executive Office of Environmental Affairs.

0 100 200 400 Feet

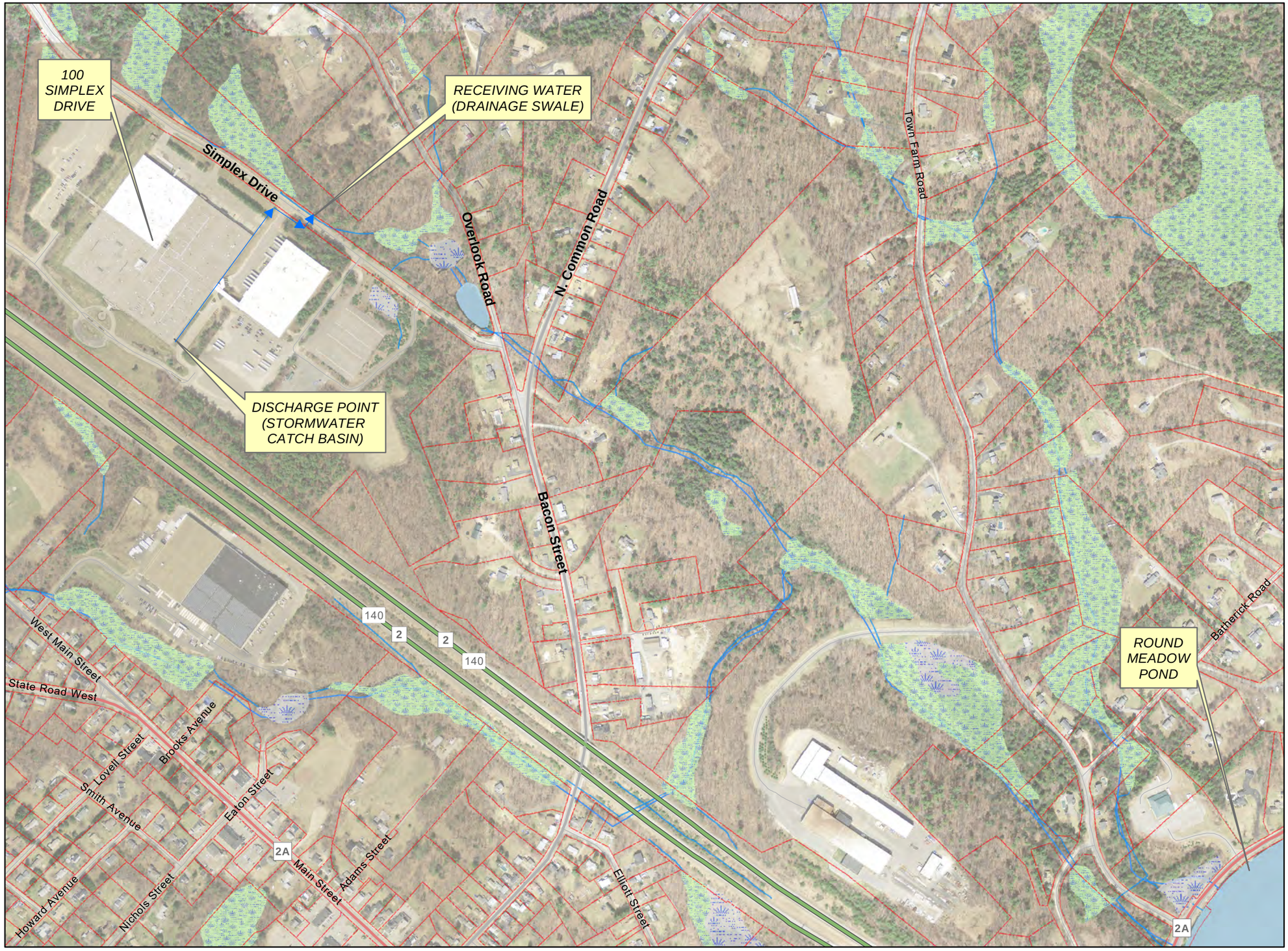
REVISED BY: DT
REVISION DATE: 9/17/2019

FIGURE **4**

DISCHARGE MAP

COMMERCIAL PROPERTY
100 SIMPLEX DRIVE
WESTMINSTER, MASSACHUSETTS

EnviroTrac
Environmental Services



LEGEND

- Parcels
- Marsh/Bog
- Wooded Marsh
- Salt Marsh
- Open Water
- Perennial Stream
- Intermittent Stream
- Discharge Path and Direction

Data Source: Office of Geographic and Environmental Information (MassGIS), Commonwealth of Massachusetts Executive Office of Environmental Affairs.

0 250 500 1,000 Feet

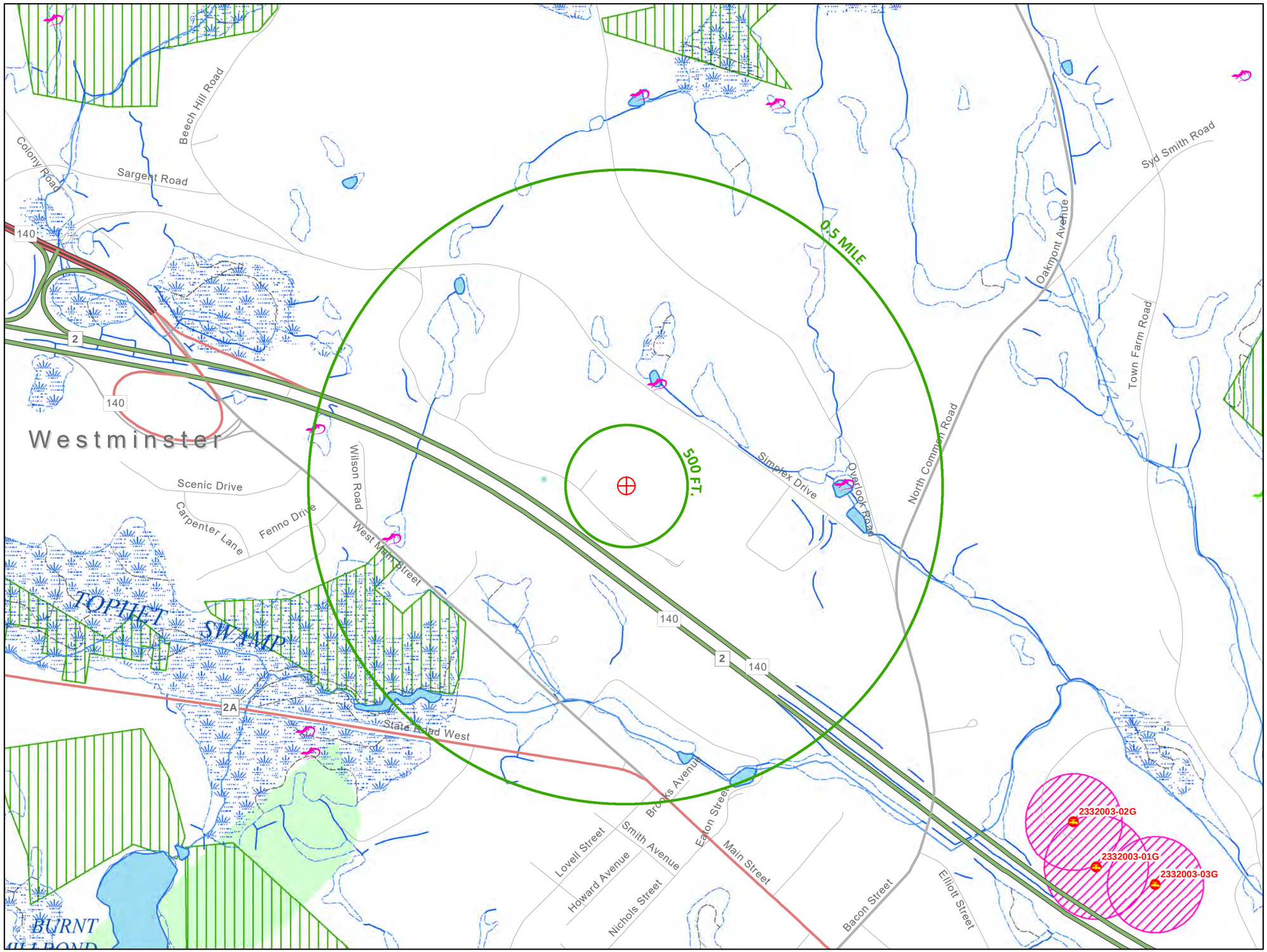
REVISED BY: DT
REVISION DATE: 9/17/2019

FIGURE 5

RECEIVING WATERS

COMMERCIAL PROPERTY
100 SIMPLEX DRIVE
WESTMINSTER, MASSACHUSETTS

EnviroTrac
Environmental Services



LEGEND

- Railroads
- Pipeline
- Pipeline Arbitrary Extension
- Solid Waste Landfills
- EPA Sole Source Aquifer
- NHESP Priority Habitats of Rare Species
- NHESP Certified Vernal Pools
- NHESP Potential Vernal Pools
- ACECs
- Protected Open Space
- Long Term Care Facility
- Hospital
- School
- Public College/University
- Private College/University

Roads

- Limited Access Highway
- Multi-lane Hwy, not limited access
- Other Numbered Highway
- Major Road, Collector
- Minor Road, Arterial

USGS Hydrography

- Perennial Stream
- Intermittent Stream
- Shoreline
- Ditch/Canal
- Aqueduct
- Dam

DEP Wetlands

- Marsh/Bog
- Wooded Marsh
- Cranberry Bog
- Salt Marsh
- Open Water
- Reservoir (with PWSID)
- Tidal Flats
- Beach/Dune

Public Water Supplies

- Community Groundwater Source
- Surface Water Intake
- Non-Community Groundwater Source
- Emergency Surface Water
- DEP Approved Zone IIs
- Interim Wellhead Protection Areas
- Surface Water Supply Zone A

Non-Potential Drinking Water Source Areas

- High-Yield
- Medium-Yield

Potentially Productive Aquifers

- High-Yield
- Medium-Yield

Data Source: Office of Geographic Information (MassGIS), Commonwealth of Massachusetts Information Technology Division.

0 800 1,600 Feet

SCALE: 1 inch=800 feet

REVISED BY: DT
REVISION DATE: 10/15/2019

FIGURE 6

MCP Priority Resource Map
500 foot and 0.5 mile Radii

COMMERCIAL PROPERTY
100 SIMPLEX DRIVE
WESTMINSTER, MASSACHUSETTS

EnviroTrac
Environmental Services

TABLE

TABLE 1
SUMMARY OF GROUNDWATER ANALYTICAL DATA

Commercial Property
100 Simplex Drive
Westminster, Massachusetts

Sample Date	August 30, 2019		RGP Part 2 Effluent Limits (µg/L)
Sample ID	ETMW-1	SW-1	
VOLATILE ORGANIC COMPOUNDS by 624.1 (µg/L)			
Acetone	<50.0	--	7,970
tert-Amyl Methyl Ether	<0.5	--	90
Benzene	*<1.0*	--	5
Tertiary Butyl Alcohol	<20	--	120
Carbon Tetrachloride	*<2.0*	--	1.6
1,2-Dichlorobenzene	<2.0	--	600
1,3-Dichlorobenzene	<2.0	--	320
1,4-Dichlorobenzene	0.29	--	5
1,2-Dichloroethane	<2.0	--	5
cis-1,2-Dichloroethane	2.72	--	70
1,1-Dichloroethane	<2.0	--	70
1,1-Dichloroethylene	<2.0	--	3.2
1,2-Dibromoethane (EDB)	<0.019	--	0.05
Ethanol	<100	--	(Report mg/L)
Ethylbenzene	<2.0	--	NE
Methyl Tert Butyl Ether	<2.0	--	20
Methylene Chloride	*<5.0*	--	4.6
Tetrachloroethylene	<2.0	--	3.3
Toluene	<1.0	--	NE
1,1,1-Trichloroethane	<2.0	--	200
1,1,2-Trichloroethane	<2.0	--	5
Trichloroethylene	<2.0	--	5
Vinyl Chloride	1.15	--	2
Total Xylenes	<2.0	--	NE
Total BTEX	ND	--	100
SEMIVOLATILE ORGANIC COMPOUNDS by 625 (µg/L)			
Total Group I PAHs	ND	--	1
Benzo(a)anthracene	*<0.052*	--	0.0038
Benzo(a)pyrene	*<0.10*	--	0.0038
Benzo(b)fluoranthene	*<0.052*	--	0.0038
Benzo(k)fluoranthene	*<0.21*	--	0.0038
Chrysene	*<0.21*	--	0.0038
Dibenzo(a,h)anthracene	*<0.10*	--	0.0038
Indeno(1,2,3-cd)pyrene	*<0.10*	--	0.0038
Total Group II PAHs	ND	--	100
Acenaphthene	<5.15	--	NE
Acenaphthylene	<5.15	--	NE
Anthracene	<5.15	--	NE
Benzo(g,h,i)perylene	<5.15	--	NE
Fluoranthene	<5.15	--	NE
Fluorene	<5.15	--	NE
Naphthalene	<1.0	--	20
Phenanthrene	<5.15	--	NE
Pyrene	<5.15	--	NE

NOTES:

-- is not sampled.
RGP is Remediation General Permit.
mg/L is milligrams per liter.
µg/L is micrograms per liter.
su is standard units.
°F is degrees Fahrenheit.
ND is not detected.
NA is not applicable.
NE is not established.
TPH is total petroleum hydrocarbons.
SVOC is semivolatile organic compounds.
PAH is polycyclic aromatic hydrocarbon.
BTEX is benzene, toluene, ethylbenzene, and xylenes.
Silver (200.8) indicates that the result for silver was obtained via method 200.8.
ETMW-1 is a monitoring well located within the construction work zone.
SW-1 is the surface water sample location, located upgradient of the storm water system discharge.
BOLD indicates concentrations greater than the laboratory detection limit.
RED indicates concentrations greater than applicable RGP Effluent limits.
ITALICS indicates laboratory detection limit is greater than applicable RGP Effluent limit.
< Indicates that the compound was not detected at the laboratory detection limit listed.

EnviroTrac Environmental Services

TABLE 1
SUMMARY OF GROUNDWATER ANALYTICAL DATA

Commercial Property
100 Simplex Drive
Westminster, Massachusetts

Sample Date	August 30, 2019		RGP Part 2 Effluent Limits (µg/L)
Sample ID	ETMW-1	SW-1	
TOTAL PETROLEUM HYDROCARBONS by 1664A (µg/L)			
TPH	<1,500	--	5,000
INORGANICS (µg/L)			
Ammonia (4500B)	0.492 mg/L	0.068 mg/L	(Report mg/L)
Chloride (300.0)	390	--	(Report)
Total Residual Chlorine (4500 CL G)	*<40*	--	11
Total Suspended Solids (2540D)	3,700,000	--	30,000
Cyanide (335.4)	4.1	--	5.2
INORGANICS (µg/L)			
Antimony (200.8)	<1.0	<1.0	206
Arsenic (200.8)	360	2.1	10
Cadmium (200.8)	2.2	<0.20	0.25
Chromium III	560	1.4	74
Chromium VI (3500 Cr B)	<4.0	<4.0	11
Copper (200.8)	390	3.9	9
Iron (200.7)	47,000	2.5	1,000
Lead (200.8)	250	1.8	2.5
Mercury (245.1)	<0.10	<0.10	0.739
Nickel (200.8)	400	<5.0	52
Selenium (200.8)	5.6	<5.0	5
Silver (200.8)	0.37	<0.20	3.2
Zinc (200.8)	1,000	38	120
GENERAL CHEMISTRY			
Hardness, Total as $CaCO_3$ (mg/L)	420	35	NE
pH (su)	6.4	6.6	6.5-8.3
Temperature (^{o}F)	--	73	83

NOTES:

-- is not sampled.
RGP is Remediation General Permit.
mg/L is milligrams per liter.
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ND is not detected.
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< Indicates that the compound was not detected at the laboratory detection limit listed.

EnviroTrac Environmental Services

ATTACHMENT A
RGP – NOI Form

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:
100 Simplex Drive</td><td colspan="3">Site address: 100 Simplex Drive
Street:</td></tr>
<tr><td>City: Westminster</td><td>State: MA</td><td>Zip: 01473</td></tr>
<tr><td rowspan="4">2. Site owner
100 Simplex LLC

Owner is (check one): ☐ Federal ☐ State/Tribal ■ Private
☐ Other; if so, specify:</td><td colspan="3">Contact Person: William Deshler</td></tr>
<tr><td colspan="2">Telephone: 617-292-0101</td><td>Email:</td></tr>
<tr><td colspan="3">Mailing address: 133 Pearl Street, Suite 300
Street:</td></tr>
<tr><td>City: Boston</td><td>State: MA</td><td>Zip: 02110</td></tr>
<tr><td rowspan="4">3. Site operator, if different than owner
EnviroTrac Ltd.</td><td colspan="3">Contact Person: Dena Tomassi</td></tr>
<tr><td colspan="2">Telephone: 781-793-0074</td><td>Email: denat@envirotrac.com</td></tr>
<tr><td colspan="3">Mailing address:
Street: 2 Merchant Street, Suite 2</td></tr>
<tr><td>City: Sharon</td><td>State: MA</td><td>Zip: 02067</td></tr>
<tr><td>4. NPDES permit number assigned by EPA:

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): 2-10229
☐ 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):
Round Meadow Pond	Segment MA81114	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: Wetland area around receiving water

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. Receiving water is not listed in the State's Integrated List of Waters (303(d)).

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
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.	No dilution

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: halogenated VOCs, non-halogenated VOCs, inorganics	
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): One stormwater outfall north of Simplex Drive	Outfall location(s): (Latitude, Longitude) 42.556781, 71.914537
Discharges enter the receiving water(s) via (check any that apply): ■ Direct discharge to the receiving water ☐ Indirect discharge, if so, specify: The discharge pathway is via a catch basin that drains to wetlands north of the property, from which an intermittent stream flows to Round Meadow Pond. ■ A private storm sewer system ☐ A municipal storm sewer system If the discharge enters the receiving water via a private or municipal storm sewer system: Has notification been provided to the owner of this system? (check one): ■ Yes ☐ No Has the operator has received permission from the owner to use such system for discharges? (check one): ■ Yes ☐ No, if so, explain, with an estimated timeframe for obtaining permission: Has the operator attached a summary of any additional requirements the owner of this system has specified? (check one): ☐ Yes ☐ No	
Provide the expected start and end dates of discharge(s) (month/year): October 2019 - November 2019 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	4500NH3	375	492	492	Report mg/L	---
Chloride	✔		1	300	10,000	390,000	390,000	Report µg/l	---
Total Residual Chlorine	✔		1	4500CL G	40	<40	<40	0.2 mg/L	16 ug/L
Total Suspended Solids		✔	1	2540D	10,000	3,700,000	3,700,000	30 mg/L	
Antimony	✔		1	200.8	1	<1	<1	206 µg/L	946 ug/L
Arsenic		✔	1	200.8	8	360	360	104 µg/L	14 ug/L
Cadmium	✔		1	200.8	0.20	2.2	2.2	10.2 µg/L	0.6038 ug/L
Chromium III	✔		1	200.8	N/A	560	560	323 µg/L	308.7 ug/L
Chromium VI	✔		1	3500Cr B	4.0	<4.0	<4.0	323 µg/L	16.9 ug/L
Copper	✔		1	200.8	10	390	390	242 µg/L	32.9 ug/L
Iron		✔	1	200.8	50	47,000	47,000	5,000 µg/L	1,477 ug/L
Lead		✔	1	200.8	5.0	25	250	160 µg/L	17.82 ug/L
Mercury	✔		1	245.1	0.10	<0.10	<0.10	0.739 µg/L	1.34 ug/L
Nickel	✔		1	200.8	50	400	400	1,450 µg/L	192.8 ug/L
Selenium	✔		1	200.8	5.0	5.6	5.6	235.8 µg/L	7.4 ug/L
Silver	✔		1	200.8	0.20	0.37	0.37	35.1 µg/L	36.1 ug/L
Zinc	✔		1	200.8	100	1,000	1,000	420 µg/L	425.3 ug/L
Cyanide	✔		1	335.4	10	4.1	4.1	178 mg/L	7.7 ug/L
B. Non-Halogenated VOCs									
Total BTEX		✔	1	624	6.0	<6.0	<6.0	100 µg/L	---
Benzene		✔	1	624	1.0	<1.0	<1.0	5.0 µg/L	---
1,4 Dioxane	✔		0	N/A	N/A	N/A	N/A	200 µg/L	---
Acetone	✔		1	624	50	<50	<50	7.97 mg/L	---
Phenol	✔		0	N/A	N/A	N/A	N/A	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	624	2.00	<2.00	<2.00	4.4 µg/L	2.4 ug/L
1,2 Dichlorobenzene		✔	1	624	2.00	<2.00	<2.00	600 µg/L	---
1,3 Dichlorobenzene		✔	1	624	2.00	<2.00	<2.00	320 µg/L	---
1,4 Dichlorobenzene		✔	1	624	2.00	0.290	0.290	5.0 µg/L	---
Total dichlorobenzene		✔	1	624	6.00	0.290	0.290	763 µg/L in NH	---
1,1 Dichloroethane		✔	1	624	2.00	<2.00	<2.00	70 µg/L	---
1,2 Dichloroethane		✔	1	624	2.00	<2.00	<2.00	5.0 µg/L	---
1,1 Dichloroethylene		✔	1	624	2.00	<2.00	<2.00	3.2 µg/L	---
Ethylene Dibromide	✔		1	504.1	0.019	<0.019	<0.019	0.05 µg/L	---
Methylene Chloride	✔		1	624	5.00	<5.00	<5.00	4.6 µg/L	---
1,1,1 Trichloroethane	✔		1	624	2.00	<2.00	<2.00	200 µg/L	---
1,1,2 Trichloroethane	✔		1	624	2.00	<2.00	<2.00	5.0 µg/L	---
Trichloroethylene		✔	1	624	2.00	<2.00	<2.00	5.0 µg/L	---
Tetrachloroethylene		✔	1	624	2.00	<2.00	<2.00	5.0 µg/L	4.9 ug/L
cis-1,2 Dichloroethylene		✔	1	624	1.00	2.72	2.72	70 µg/L	---
Vinyl Chloride		✔	1	624	2.00	1.15	1.15	2.0 µg/L	---
D. Non-Halogenated SVOCs									
Total Phthalates	✔		0	N/A	N/A	N/A	N/A	190 µg/L	
Diethylhexyl phthalate	✔		0	N/A	N/A	N/A	N/A	101 µg/L	
Total Group I PAHs	✔		1	625	N/A	0	0	1.0 µg/L	---
Benzo(a)anthracene	✔		1	625	0.052	<0.052	<0.052	As Total PAHs	0.0056 ug/L
Benzo(a)pyrene	✔		1	625	0.10	<0.10	<0.10		0.0056 ug/L
Benzo(b)fluoranthene	✔		1	625	0.052	<0.052	<0.052		0.0056 ug/L
Benzo(k)fluoranthene	✔		1	625	0.21	<0.21	<0.21		0.0056 ug/L
Chrysene	✔		1	625	0.21	<0.21	<0.21		0.0056 ug/L
Dibenzo(a,h)anthracene	✔		1	625	0.10	<0.10	<0.10		0.0056 ug/L
Indeno(1,2,3-cd)pyrene	✔		1	625	0.10	<0.10	<0.10		0.0056 ug/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
Total Group II PAHs	✔		1	625	N/A	0	0	100 µg/L	---
Naphthalene	✔		1	625	1.0	<1.0	<1.0	20 µg/L	---
E. Halogenated SVOCs									
Total PCBs	✔		0	N/A	N/A	N/A	N/A	0.000064 µg/L	---
Pentachlorophenol	✔		0	N/A	N/A	N/A	N/A	1.0 µg/L	---
F. Fuels Parameters									
Total Petroleum Hydrocarbons	✔		1	1664A	1,500	<1,500	<1,500	5.0 mg/L	---
Ethanol	✔		1	624	100	<100	<100	Report mg/L	---
Methyl-tert-Butyl Ether	✔		1	624	2.00	<2.00	<2.00	70 µg/L	30 ug/L
tert-Butyl Alcohol	✔		1	624	20.0	<20.0	<20.0	120 µg/L in MA 40 µg/L in NH	---
tert-Amyl Methyl Ether	✔		1	624	0.500	<0.500	<0.500	90 µg/L in MA 140 µg/L in NH	---
Other (i.e., pH, temperature, hardness, salinity, LC_{50}, additional pollutants present); if so, specify:									
Hardness		✔	1	200.7	N/A	420,000	420,000		
pH		✔	1	4500HB	N/A	6.4	6.4		

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:

Aerators may be used.

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

Groundwater will be pumped into a frac tank for settlement. If necessary, groundwater may be pumped through a water aeratino system (consisting of two parallel aerators) to aid in precipitating metals, prior to exiting the frac tank. From the frac tank, groundwater will be pumped through two parallel bag filter units equipped with 10-50 micron filters to remove excess suspended solids. After bag filters, groundwater will go through two 2,000-pound liquid-phase carbon units arranged in-series to remove potential dissolved CVOC constituents. Groundwater will then flow through two cartridge filters units with 1-5 micron filters to remove suspended sediments.

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: Cartridge filters

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: Cartridge filters (are designed in parallel however, to minimize limitations on flow) Is use of a flow meter feasible? (check one): ■ Yes ☐ No, if so, provide justification:	100
Provide the proposed maximum effluent flow in gpm.	100
Provide the average effluent flow in gpm.	50-75
If Activity Category IV applies, indicate the estimated total volume of water that will be discharged:	

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

F. Chemical and additive information

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

☐ Algaecides/biocides ☐ Antifoams ☐ Coagulants ☐ Corrosion/scale inhibitors ☐ Disinfectants ☐ Flocculants ☐ Neutralizing agents ☐ Oxidants ☐ Oxygen ☐ scavengers ☐ pH conditioners ☐ Bioremedial agents, including microbes ☐ Chlorine or chemicals containing chlorine ☐ Other; if so, specify:
No chemical additives will be used.

2. Provide the following information for each chemical/additive, using attachments, if necessary:
No chemical additives will be used.
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:	I certify that a BMPP meeting the requirements of this general permit will be developed and implemented upon initiation of discharge.
Notification provided to the appropriate State, including a copy of this NOI, if required.	Check one: Yes ■ No ☐
Notification provided to the municipality in which the discharge is located, including a copy of this NOI, if requested.	Check one: Yes ■ No ☐
Notification provided to the owner of a private or municipal storm sewer system, if such system is used for site discharges, including a copy of this NOI, if requested.	Check one: Yes ■ No ☐ NA ☐
Permission obtained from the owner of a private or municipal storm sewer system, if such system is used for site discharges. If yes, attach additional conditions. If no, attach explanation and timeframe for obtaining permission.	Check one: Yes ☐ No ■ NA ☐
Notification provided to the owner/operator of the area associated with activities covered by an additional discharge permit(s). Additional discharge permit is (check one): ☐ RGP ☐ DGP ☐ CGP ☐ MSGP ☐ Individual NPDES permit ☐ Other; if so, specify:	Check one: Yes ☐ No ☐ NA ■
Signature:	Date: 10/24/2019
Print Name and Title: Dena Tomassi, Project Manager	

ATTACHMENT B
Laboratory Reports

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

September 26, 2019

Dena Tomassi
EnviroTrac Ltd.
2 Merchant Street, Suite 2
Sharon, MA 02067

Project Location: 100 Simplex Drive, Westminster, MA
Client Job Number:
Project Number: [none]
Laboratory Work Order Number: 19H1713

Enclosed are results of analyses for samples received by the laboratory on August 30, 2019. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Kaitlyn A. Feliciano
Project Manager

Table of Contents

Table of Contents (continued)

con-test® ANALYTICAL LABORATORY

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

EnviroTrac Ltd.
2 Merchant Street, Suite 2
Sharon, MA 02067
ATTN: Dena Tomassi

REPORT DATE: 9/26/2019

PURCHASE ORDER NUMBER:

PROJECT NUMBER: [none]

ANALYTICAL SUMMARY

WORK ORDER NUMBER: 19H1713

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

PROJECT LOCATION: 100 Simplex Drive, Westminster, MA

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
ETMW-1	19H1713-01	Ground Water		121,4500NH3-BH	MA M-MA-086/CT PH-0574/NY11148
				624.1	
				625.1	
				EPA 1664B	
				EPA 200.7	
				EPA 200.8	
				EPA 245.1	
				EPA 300.0	
				EPA 504.1	
				SM19-22 4500 NH3 C	MA M-MA-086/CT PH-0574/NY11148
				SM21-22 2540D	
				SM21-22 3500 Cr B	
				SM21-22 4500 CL G	
				SM21-22 4500 H B	
				Tri Chrome Calc.	
SW-1	19H1713-02	Ground Water		121,4500NH3-BH	MA M-MA-086/CT PH-0574/NY11148
				EPA 200.7	
				EPA 200.8	
				EPA 245.1	
				SM19-22 4500 NH3 C	MA M-MA-086/CT PH-0574/NY11148
				SM21-22 3500 Cr B	
				SM21-22 4500 H B	
				Tri Chrome Calc.	
Trip Blank	19H1713-03	Trip Blank Water		624.1	

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

CASE NARRATIVE SUMMARY

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

REVISED REPORT 09-26-19: Per client request the phenol results have been removed from the 625 results.
REVISED REPORT 09-19-19: The 624.1 results have been revised to the MDL and to include acetone, 1,1-DCE and MTBE.
Per client request the trip blank results have been removed from the final report.
The 625 results have been revised to the MDL and the phthalates have been removed per the CoC.
The 200.8 metals results have been revised to the MDL..

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625.1

Qualifications:

S-07

One associated surrogate standard recovery is outside of control limits but the other(s) is/are within limits. All recoveries are > 10%.

Analyte & Samples(s) Qualified:

2,4,6-Tribromophenol
B239765-BS1

V-35

Initial calibration verification (ICV) did not meet method specifications and was biased on the high side for this compound. Reported result is estimated.

Analyte & Samples(s) Qualified:

Benzidine
S040203-CCV1

EPA 200.8

Qualifications:

R-04

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

Analyte & Samples(s) Qualified:

Chromium
19H1713-02[SW-1], B239844-DUP1

SM21-22 4500 CL G

Qualifications:

DL-03

Elevated reporting limit due to matrix interference.

Analyte & Samples(s) Qualified:

Chlorine, Residual
19H1713-01[ETMW-1], B239498-DUP1, B239498-MS1

Z-01

SM 4500 test had calibration points outside of acceptable back calculated recoveries. Reanalysis yielded similar non-conformance.

Analyte & Samples(s) Qualified:

Chlorine, Residual
19H1713-01[ETMW-1], B239498-BLK1, B239498-BS1, B239498-BSD1, B239498-DUP1, B239498-MS1

SM21-22 4500 H B

Qualifications:

H-05

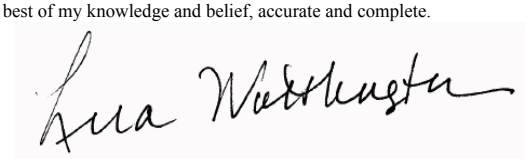
Holding time was exceeded. pH analysis should be performed immediately at time of sampling. Nominal 15 minute holding time was exceeded.

Analyte & Samples(s) Qualified:

pH
19H1713-01[ETMW-1], 19H1713-02[SW-1]

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

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



Lisa A. Worthington
Technical Representative

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

Project Location: 100 Simplex Drive, Westminster, Sample Description: Work Order: 19H1713

Date Received: 8/30/2019

Field Sample #: ETMW-1 Sampled: 8/30/2019 10:15

Sample ID: 19H1713-01

Sample Matrix: Ground Water

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acetone	<50.0	50.0	3.79	µg/L	1		624.1	9/3/19	9/3/19 12:37	LBD
tert-Amyl Methyl Ether (TAME)	<0.500	0.500	0.140	µg/L	1		624.1	9/3/19	9/3/19 12:37	LBD
Benzene	<1.00	1.00	0.180	µg/L	1		624.1	9/3/19	9/3/19 12:37	LBD
tert-Butyl Alcohol (TBA)	<20.0	20.0	4.17	µg/L	1		624.1	9/3/19	9/3/19 12:37	LBD
Carbon Tetrachloride	<2.00	2.00	0.110	µg/L	1		624.1	9/3/19	9/3/19 12:37	LBD
1,2-Dichlorobenzene	<2.00	2.00	0.160	µg/L	1		624.1	9/3/19	9/3/19 12:37	LBD
1,3-Dichlorobenzene	<2.00	2.00	0.120	µg/L	1		624.1	9/3/19	9/3/19 12:37	LBD
1,4-Dichlorobenzene	0.290	2.00	0.130	µg/L	1	J	624.1	9/3/19	9/3/19 12:37	LBD
1,2-Dichloroethane	<2.00	2.00	0.410	µg/L	1		624.1	9/3/19	9/3/19 12:37	LBD
cis-1,2-Dichloroethylene	2.72	1.00	0.130	µg/L	1		624.1	9/3/19	9/3/19 12:37	LBD
1,1-Dichloroethane	<2.00	2.00	0.160	µg/L	1		624.1	9/3/19	9/3/19 12:37	LBD
1,1-Dichloroethylene	<2.00	2.00	0.320	µg/L	1		624.1	9/3/19	9/3/19 12:37	LBD
Ethanol	<100	100	10.5	µg/L	1		624.1	9/3/19	9/3/19 12:37	LBD
Ethylbenzene	<2.00	2.00	0.130	µg/L	1		624.1	9/3/19	9/3/19 12:37	LBD
Methyl tert-Butyl Ether (MTBE)	<2.00	2.00	0.250	µg/L	1		624.1	9/3/19	9/3/19 12:37	LBD
Methylene Chloride	<5.00	5.00	0.340	µg/L	1		624.1	9/3/19	9/3/19 12:37	LBD
Tetrachloroethylene	<2.00	2.00	0.180	µg/L	1		624.1	9/3/19	9/3/19 12:37	LBD
Toluene	<1.00	1.00	0.140	µg/L	1		624.1	9/3/19	9/3/19 12:37	LBD
1,1,1-Trichloroethane	<2.00	2.00	0.200	µg/L	1		624.1	9/3/19	9/3/19 12:37	LBD
1,1,2-Trichloroethane	<2.00	2.00	0.160	µg/L	1		624.1	9/3/19	9/3/19 12:37	LBD
Trichloroethylene	<2.00	2.00	0.240	µg/L	1		624.1	9/3/19	9/3/19 12:37	LBD
Vinyl Chloride	1.15	2.00	0.450	µg/L	1	J	624.1	9/3/19	9/3/19 12:37	LBD
m+p Xylene	<2.00	2.00	0.300	µg/L	1		624.1	9/3/19	9/3/19 12:37	LBD
o-Xylene	<2.00	2.00	0.170	µg/L	1		624.1	9/3/19	9/3/19 12:37	LBD

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
1,2-Dichloroethane-d4	96.3	70-130		9/3/19 12:37
Toluene-d8	103	70-130		9/3/19 12:37
4-Bromofluorobenzene	103	70-130		9/3/19 12:37

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

Project Location: 100 Simplex Drive, Westminster, Sample Description: Work Order: 19H1713

Date Received: 8/30/2019

Field Sample #: ETMW-1 Sampled: 8/30/2019 10:15

Sample ID: 19H1713-01

Sample Matrix: Ground Water

Semivolatile Organic Compounds by GC/MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Benzo(a)anthracene (SIM)	<0.052	0.052	0.016	µg/L	1		625.1	9/4/19	9/10/19 10:20	IMR
Benzo(a)pyrene (SIM)	<0.10	0.10	0.012	µg/L	1		625.1	9/4/19	9/10/19 10:20	IMR
Benzo(b)fluoranthene (SIM)	<0.052	0.052	0.015	µg/L	1		625.1	9/4/19	9/10/19 10:20	IMR
Benzo(k)fluoranthene (SIM)	<0.21	0.21	0.012	µg/L	1		625.1	9/4/19	9/10/19 10:20	IMR
Chrysene (SIM)	<0.21	0.21	0.015	µg/L	1		625.1	9/4/19	9/10/19 10:20	IMR
Dibenz(a,h)anthracene (SIM)	<0.10	0.10	0.018	µg/L	1		625.1	9/4/19	9/10/19 10:20	IMR
Indeno(1,2,3-cd)pyrene (SIM)	<0.10	0.10	0.019	µg/L	1		625.1	9/4/19	9/10/19 10:20	IMR
Naphthalene (SIM)	<1.0	1.0	0.26	µg/L	1		625.1	9/4/19	9/10/19 10:20	IMR

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
2-Fluorophenol (SIM)	41.9	15-110		9/10/19 10:20
Phenol-d6 (SIM)	32.1	15-110		9/10/19 10:20
Nitrobenzene-d5	70.5	30-130		9/10/19 10:20
2-Fluorobiphenyl	49.1	30-130		9/10/19 10:20
2,4,6-Tribromophenol (SIM)	80.4	15-110		9/10/19 10:20
p-Terphenyl-d14	60.5	30-130		9/10/19 10:20

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Project Location: 100 Simplex Drive, Westminster, Sample Description: Work Order: 19H1713

Date Received: 8/30/2019

Field Sample #: ETMW-1 Sampled: 8/30/2019 10:15

Sample ID: 19H1713-01

Sample Matrix: Ground Water

Semivolatile Organic Compounds by - GC/MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acenaphthene	<5.15	5.15	2.51	µg/L	1		625.1	9/4/19	9/11/19 11:48	imr
Acenaphthylene	<5.15	5.15	2.45	µg/L	1		625.1	9/4/19	9/11/19 11:48	imr
Anthracene	<5.15	5.15	2.79	µg/L	1		625.1	9/4/19	9/11/19 11:48	imr
Benzo(g,h,i)perylene	<5.15	5.15	3.47	µg/L	1		625.1	9/4/19	9/11/19 11:48	imr
Fluoranthene	<5.15	5.15	2.42	µg/L	1		625.1	9/4/19	9/11/19 11:48	imr
Fluorene	<5.15	5.15	2.55	µg/L	1		625.1	9/4/19	9/11/19 11:48	imr
Naphthalene	<5.15	5.15	2.74	µg/L	1		625.1	9/4/19	9/11/19 11:48	imr
Phenanthrene	<5.15	5.15	2.82	µg/L	1		625.1	9/4/19	9/11/19 11:48	imr
Pyrene	<5.15	5.15	3.63	µg/L	1		625.1	9/4/19	9/11/19 11:48	imr

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
2-Fluorophenol	48.0	15-110		9/11/19 11:48
Phenol-d6	35.3	15-110		9/11/19 11:48
Nitrobenzene-d5	78.1	30-130		9/11/19 11:48
2-Fluorobiphenyl	77.0	30-130		9/11/19 11:48
2,4,6-Tribromophenol	97.8	15-110		9/11/19 11:48
p-Terphenyl-d14	90.9	30-130		9/11/19 11:48

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

Project Location: 100 Simplex Drive, Westminster, Sample Description: Work Order: 19H1713

Date Received: 8/30/2019

Field Sample #: ETMW-1 Sampled: 8/30/2019 10:15

Sample ID: 19H1713-01

Sample Matrix: Ground Water

Metals Analyses (Total)

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Antimony	ND	1.0	0.35	µg/L	1		EPA 200.8	9/5/19	9/6/19 11:17	QNW
Arsenic	360	8.0	6.4	µg/L	10		EPA 200.8	9/5/19	9/6/19 13:55	QNW
Cadmium	2.2	0.20	0.038	µg/L	1		EPA 200.8	9/5/19	9/6/19 11:17	QNW
Chromium	560	10	2.4	µg/L	10		EPA 200.8	9/5/19	9/6/19 13:55	QNW
Chromium, Trivalent	0.56			mg/L	1		Tri Chrome Calc.	9/5/19	9/6/19 11:17	QNW
Copper	390	10	8.7	µg/L	10		EPA 200.8	9/5/19	9/6/19 13:55	QNW
Iron	47	0.050		mg/L	1		EPA 200.7	9/5/19	9/6/19 14:42	TBC/QNW
Lead	250	5.0	0.85	µg/L	10		EPA 200.8	9/5/19	9/6/19 13:55	QNW
Mercury	ND	0.00010		mg/L	1		EPA 245.1	9/9/19	9/9/19 15:18	CJV
Nickel	400	50	6.2	µg/L	10		EPA 200.8	9/5/19	9/6/19 13:55	QNW
Selenium	5.6	5.0	1.6	µg/L	1		EPA 200.8	9/5/19	9/6/19 11:17	QNW
Silver	0.37	0.20	0.18	µg/L	1		EPA 200.8	9/5/19	9/6/19 11:17	QNW
Zinc	1000	100	23	µg/L	10		EPA 200.8	9/5/19	9/6/19 13:55	QNW
Hardness	420			mg/L	1		EPA 200.7	9/5/19	9/6/19 14:42	TBC/QNW

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Project Location: 100 Simplex Drive, Westminster, Sample Description: Work Order: 19H1713

Date Received: 8/30/2019

Field Sample #: ETMW-1 Sampled: 8/30/2019 10:15

Sample ID: 19H1713-01

Sample Matrix: Ground Water

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

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Chloride	390	10		mg/L	10		EPA 300.0	9/7/19	9/7/19 18:29	MMH
Chlorine, Residual	ND	0.040		mg/L	2	DL-03, Z-01	SM21-22 4500 CL G	8/30/19	8/30/19 20:45	MJG
Hexavalent Chromium	ND	0.0040		mg/L	1		SM21-22 3500 Cr B	8/30/19	8/30/19 19:15	IS
pH @20.7°C	6.4			pH Units	1	H-05	SM21-22 4500 H B	9/3/19	9/3/19 19:29	SLB
Total Suspended Solids	3700	10		mg/L	1		SM21-22 2540D	8/31/19	8/31/19 12:13	LL
Silica Gel Treated HEM (SGT-HEM)	ND	1.5		mg/L	1		EPA 1664B	9/5/19	9/5/19 11:30	LL

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Project Location: 100 Simplex Drive, Westminster, Sample Description: Work Order: 19H1713

Date Received: 8/30/2019

Field Sample #: ETMW-1 Sampled: 8/30/2019 10:15

Sample ID: 19H1713-01

Sample Matrix: Ground Water

Drinking Water Organics EPA 504.1

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
1,2-Dibromoethane (EDB) (1)	ND	0.019	0.012	µg/L	1		EPA 504.1	9/9/19	9/9/19 19:44	PJG

Surrogates	% Recovery	Recovery Limits	Flag/Qual		
1,3-Dibromopropane (1)	107	70-130			9/9/19 19:44

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Project Location: 100 Simplex Drive, Westminster, Sample Description: Work Order: 19H1713

Date Received: 8/30/2019

Field Sample #: ETMW-1 Sampled: 8/30/2019 10:15

Sample ID: 19H1713-01

Sample Matrix: Ground Water

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

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Ammonia as N	0.492	0.375	0.12	mg/L	5		121,4500NH3-BH		9/6/19 20:51	AAL

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Project Location: 100 Simplex Drive, Westminster, Sample Description: Work Order: 19H1713

Date Received: 8/30/2019

Field Sample #: SW-1 Sampled: 8/30/2019 11:20

Sample ID: 19H1713-02

Sample Matrix: Ground Water

Metals Analyses (Total)

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Antimony	ND	1.0	0.35	µg/L	1		EPA 200.8	9/5/19	9/6/19 11:14	QNW
Arsenic	2.1	0.80	0.64	µg/L	1		EPA 200.8	9/5/19	9/6/19 11:14	QNW
Cadmium	0.046	0.20	0.038	µg/L	1	J	EPA 200.8	9/5/19	9/6/19 11:14	QNW
Chromium	1.4	1.0	0.24	µg/L	1	R-04	EPA 200.8	9/5/19	9/6/19 11:14	QNW
Chromium, Trivalent	0.0014			mg/L	1		Tri Chrome Calc.	9/5/19	9/6/19 11:14	QNW
Copper	3.9	1.0	0.87	µg/L	1		EPA 200.8	9/5/19	9/6/19 11:14	QNW
Iron	2.5	0.050		mg/L	1		EPA 200.7	9/5/19	9/6/19 14:50	TBC/QNW
Lead	1.8	0.50	0.085	µg/L	1		EPA 200.8	9/5/19	9/6/19 11:14	QNW
Mercury	ND	0.00010		mg/L	1		EPA 245.1	9/9/19	9/9/19 15:20	CJV
Nickel	2.0	5.0	0.62	µg/L	1	J	EPA 200.8	9/5/19	9/6/19 11:14	QNW
Selenium	ND	5.0	1.6	µg/L	1		EPA 200.8	9/5/19	9/6/19 11:14	QNW
Silver	ND	0.20	0.18	µg/L	1		EPA 200.8	9/5/19	9/6/19 11:14	QNW
Zinc	38	10	2.3	µg/L	1		EPA 200.8	9/5/19	9/6/19 11:14	QNW
Hardness	35			mg/L	1		EPA 200.7	9/5/19	9/6/19 14:50	TBC/QNW

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

Project Location: 100 Simplex Drive, Westminster, Sample Description: Work Order: 19H1713

Date Received: 8/30/2019

Field Sample #: SW-1 Sampled: 8/30/2019 11:20

Sample ID: 19H1713-02

Sample Matrix: Ground Water

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

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Hexavalent Chromium	ND	0.0040		mg/L	1		SM21-22 3500 Cr B	8/30/19	8/30/19 19:15	IS
pH @20.4°C	6.6			pH Units	1	H-05	SM21-22 4500 H B	9/3/19	9/3/19 19:29	SLB

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

Project Location: 100 Simplex Drive, Westminster, Sample Description: Work Order: 19H1713

Date Received: 8/30/2019

Field Sample #: SW-1 Sampled: 8/30/2019 11:20

Sample ID: 19H1713-02

Sample Matrix: Ground Water

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

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Ammonia as N	0.068	0.15	0.048	mg/L	2		121,4500NH3-BH		9/6/19 20:52	AAL

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Sample Extraction Data

Prep Method: SW-846 5030B-624.1

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
19H1713-01 [ETMW-1]	B239548	5	5.00	09/03/19

Prep Method: SW-846 3510C-625.1

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
19H1713-01 [ETMW-1]	B239765	970	1.00	09/04/19

Prep Method: SW-846 3510C-625.1

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
19H1713-01 [ETMW-1]	B239937	970	1.00	09/04/19

EPA 1664B

Lab Number [Field ID]	Batch	Initial [mL]		Date
19H1713-01 [ETMW-1]	B239783	930		09/05/19

Prep Method: EPA 200.7-EPA 200.7

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
19H1713-01 [ETMW-1]	B239843	50.0	50.0	09/05/19
19H1713-01 [ETMW-1]	B239843	50.0		09/05/19
19H1713-02 [SW-1]	B239843	50.0	50.0	09/05/19
19H1713-02 [SW-1]	B239843	50.0		09/05/19

Prep Method: EPA 200.8-EPA 200.8

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
19H1713-01 [ETMW-1]	B239844	50.0	50.0	09/05/19
19H1713-02 [SW-1]	B239844	50.0	50.0	09/05/19

Prep Method: EPA 245.1-EPA 245.1

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
19H1713-01 [ETMW-1]	B240040	6.00	6.00	09/09/19
19H1713-02 [SW-1]	B240040	6.00	6.00	09/09/19

Prep Method: EPA 300.0-EPA 300.0

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
19H1713-01 [ETMW-1]	B239970	10.0	10.0	09/07/19

Prep Method: EPA 504 water-EPA 504.1

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date

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

Sample Extraction Data

Prep Method: EPA 504 water-EPA 504.1

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
19H1713-01 [ETMW-1]	B240078	36.1	35.0	09/09/19

SM21-22 2540D

Lab Number [Field ID]	Batch	Initial [mL]	Date
19H1713-01 [ETMW-1]	B239501	50.0	08/31/19

SM21-22 3500 Cr B

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
19H1713-01 [ETMW-1]	B239496	50.0	50.0	08/30/19
19H1713-02 [SW-1]	B239496	50.0	50.0	08/30/19

SM21-22 4500 CL G

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
19H1713-01 [ETMW-1]	B239498	100	100	08/30/19

SM21-22 4500 H B

Lab Number [Field ID]	Batch	Initial [mL]	Date
19H1713-01 [ETMW-1]	B239647	50.0	09/03/19
19H1713-02 [SW-1]	B239647	50.0	09/03/19

Prep Method: EPA 200.8-Tri Chrome Calc.

Lab Number [Field ID]	Batch	Initial [mL]	Date
19H1713-01 [ETMW-1]	B239844	50.0	09/05/19
19H1713-02 [SW-1]	B239844	50.0	09/05/19

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

QUALITY CONTROL

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B239548 - SW-846 5030B										
Blank (B239548-BLK1)				Prepared & Analyzed: 09/03/19						
Acetone	ND	50.0	µg/L							
Benzene	ND	1.00	µg/L							
Bromodichloromethane	ND	2.00	µg/L							
Bromoform	ND	2.00	µg/L							
Bromomethane	ND	2.00	µg/L							
Carbon Tetrachloride	ND	2.00	µg/L							
Chlorobenzene	ND	2.00	µg/L							
Chlorodibromomethane	ND	2.00	µg/L							
Chloroethane	ND	2.00	µg/L							
Chloroform	ND	2.00	µg/L							
Chloromethane	ND	2.00	µg/L							
1,2-Dichlorobenzene	ND	2.00	µg/L							
1,3-Dichlorobenzene	ND	2.00	µg/L							
1,4-Dichlorobenzene	ND	2.00	µg/L							
1,2-Dichloroethane	ND	2.00	µg/L							
1,1-Dichloroethane	ND	2.00	µg/L							
1,1-Dichloroethylene	ND	2.00	µg/L							
trans-1,2-Dichloroethylene	ND	2.00	µg/L							
1,2-Dichloropropane	ND	2.00	µg/L							
cis-1,3-Dichloropropene	ND	2.00	µg/L							
trans-1,3-Dichloropropene	ND	2.00	µg/L							
Ethylbenzene	ND	2.00	µg/L							
Methyl tert-Butyl Ether (MTBE)	ND	2.00	µg/L							
Methylene Chloride	ND	5.00	µg/L							
1,1,2,2-Tetrachloroethane	ND	2.00	µg/L							
Tetrachloroethylene	ND	2.00	µg/L							
Toluene	ND	1.00	µg/L							
1,1,1-Trichloroethane	ND	2.00	µg/L							
1,1,2-Trichloroethane	ND	2.00	µg/L							
Trichloroethylene	ND	2.00	µg/L							
Trichlorofluoromethane (Freon 11)	ND	2.00	µg/L							
Vinyl Chloride	ND	2.00	µg/L							
m+p Xylene	ND	2.00	µg/L							
o-Xylene	ND	2.00	µg/L							
Surrogate: 1,2-Dichloroethane-d4	*24.1*		µg/L	25.0		96.5	70-130			
Surrogate: Toluene-d8	*25.8*		µg/L	25.0		103	70-130			
Surrogate: 4-Bromofluorobenzene	*25.4*		µg/L	25.0		101	70-130			
LCS (B239548-BS1)				Prepared & Analyzed: 09/03/19						
Acetone	220	50.0	µg/L	200		110	70-160			†
Benzene	22	1.00	µg/L	20.0		111	65-135			
Bromodichloromethane	20	2.00	µg/L	20.0		102	65-135			
Bromoform	21	2.00	µg/L	20.0		106	70-130			
Bromomethane	16	2.00	µg/L	20.0		79.2	15-185			
Carbon Tetrachloride	23	2.00	µg/L	20.0		115	70-130			
Chlorobenzene	20	2.00	µg/L	20.0		101	65-135			
Chlorodibromomethane	24	2.00	µg/L	20.0		119	70-135			
Chloroethane	20	2.00	µg/L	20.0		97.6	40-160			
Chloroform	21	2.00	µg/L	20.0		105	70-135			
Chloromethane	14	2.00	µg/L	20.0		71.6	20-205			
1,2-Dichlorobenzene	19	2.00	µg/L	20.0		93.2	65-135			
1,3-Dichlorobenzene	18	2.00	µg/L	20.0		91.9	70-130			

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QUALITY CONTROL

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B239548 - SW-846 5030B										
LCS (B239548-BS1)				Prepared & Analyzed: 09/03/19						
1,4-Dichlorobenzene	18	2.00	µg/L	20.0		90.4	65-135			
1,2-Dichloroethane	21	2.00	µg/L	20.0		106	70-130			
1,1-Dichloroethane	23	2.00	µg/L	20.0		114	70-130			
1,1-Dichloroethylene	22	2.00	µg/L	20.0		109	50-150			
trans-1,2-Dichloroethylene	23	2.00	µg/L	20.0		116	70-130			
1,2-Dichloropropane	22	2.00	µg/L	20.0		109	35-165			
cis-1,3-Dichloropropene	21	2.00	µg/L	20.0		104	25-175			
trans-1,3-Dichloropropene	21	2.00	µg/L	20.0		104	50-150			
Ethylbenzene	19	2.00	µg/L	20.0		95.2	60-140			
Methyl tert-Butyl Ether (MTBE)	23	2.00	µg/L	20.0		117	70-130			
Methylene Chloride	21	5.00	µg/L	20.0		105	60-140			
1,1,2,2-Tetrachloroethane	23	2.00	µg/L	20.0		114	60-140			
Tetrachloroethylene	23	2.00	µg/L	20.0		114	70-130			
Toluene	21	1.00	µg/L	20.0		103	70-130			
1,1,1-Trichloroethane	22	2.00	µg/L	20.0		111	70-130			
1,1,2-Trichloroethane	22	2.00	µg/L	20.0		111	70-130			
Trichloroethylene	20	2.00	µg/L	20.0		99.8	65-135			
Trichlorofluoromethane (Freon 11)	19	2.00	µg/L	20.0		95.3	50-150			
Vinyl Chloride	19	2.00	µg/L	20.0		95.1	5-195			
m+p Xylene	38	2.00	µg/L	40.0		94.6	70-130			
o-Xylene	19	2.00	µg/L	20.0		95.7	70-130			
Surrogate: 1,2-Dichloroethane-d4	*23.7*		µg/L	25.0		94.8	70-130			
Surrogate: Toluene-d8	*26.0*		µg/L	25.0		104	70-130			
Surrogate: 4-Bromofluorobenzene	*25.8*		µg/L	25.0		103	70-130			
Batch B239686 - SW-846 5030B										
Blank (B239686-BLK1)				Prepared: 09/04/19 Analyzed: 09/05/19						
Acetone	ND	50.0	µg/L							
Benzene	ND	1.00	µg/L							
Bromodichloromethane	ND	2.00	µg/L							
Bromoform	ND	2.00	µg/L							
Bromomethane	ND	2.00	µg/L							
Carbon Tetrachloride	ND	2.00	µg/L							
Chlorobenzene	ND	2.00	µg/L							
Chlorodibromomethane	ND	2.00	µg/L							
Chloroethane	ND	2.00	µg/L							
Chloroform	ND	2.00	µg/L							
Chloromethane	ND	2.00	µg/L							
1,2-Dichlorobenzene	ND	2.00	µg/L							
1,3-Dichlorobenzene	ND	2.00	µg/L							
1,4-Dichlorobenzene	ND	2.00	µg/L							
1,2-Dichloroethane	ND	2.00	µg/L							
1,1-Dichloroethane	ND	2.00	µg/L							
1,1-Dichloroethylene	ND	2.00	µg/L							
trans-1,2-Dichloroethylene	ND	2.00	µg/L							
1,2-Dichloropropane	ND	2.00	µg/L							
cis-1,3-Dichloropropene	ND	2.00	µg/L							
trans-1,3-Dichloropropene	ND	2.00	µg/L							
Ethylbenzene	ND	2.00	µg/L							
Methyl tert-Butyl Ether (MTBE)	ND	2.00	µg/L							
Methylene Chloride	ND	5.00	µg/L							
1,1,2,2-Tetrachloroethane	ND	2.00	µg/L							

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QUALITY CONTROL

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B239686 - SW-846 5030B										
Blank (B239686-BLK1)				Prepared: 09/04/19 Analyzed: 09/05/19						
Tetrachloroethylene	ND	2.00	µg/L							
Toluene	ND	1.00	µg/L							
1,1,1-Trichloroethane	ND	2.00	µg/L							
1,1,2-Trichloroethane	ND	2.00	µg/L							
Trichloroethylene	ND	2.00	µg/L							
Trichlorofluoromethane (Freon 11)	ND	2.00	µg/L							
Vinyl Chloride	ND	2.00	µg/L							
m+p Xylene	ND	2.00	µg/L							
o-Xylene	ND	2.00	µg/L							
Surrogate: 1,2-Dichloroethane-d4	*25.3*		µg/L	25.0		101	70-130			
Surrogate: Toluene-d8	*24.5*		µg/L	25.0		98.0	70-130			
Surrogate: 4-Bromofluorobenzene	*23.7*		µg/L	25.0		94.6	70-130			
LCS (B239686-BS1)				Prepared: 09/04/19 Analyzed: 09/05/19						
Acetone	170	50.0	µg/L	200		85.9	70-160			†
Benzene	17	1.00	µg/L	20.0		84.5	65-135			
Bromodichloromethane	20	2.00	µg/L	20.0		98.4	65-135			
Bromoform	22	2.00	µg/L	20.0		109	70-130			
Bromomethane	13	2.00	µg/L	20.0		66.6	15-185			
Carbon Tetrachloride	19	2.00	µg/L	20.0		95.2	70-130			
Chlorobenzene	20	2.00	µg/L	20.0		102	65-135			
Chlorodibromomethane	20	2.00	µg/L	20.0		97.8	70-135			
Chloroethane	14	2.00	µg/L	20.0		72.0	40-160			
Chloroform	17	2.00	µg/L	20.0		85.2	70-135			
Chloromethane	14	2.00	µg/L	20.0		70.7	20-205			
1,2-Dichlorobenzene	20	2.00	µg/L	20.0		97.9	65-135			
1,3-Dichlorobenzene	21	2.00	µg/L	20.0		103	70-130			
1,4-Dichlorobenzene	20	2.00	µg/L	20.0		98.6	65-135			
1,2-Dichloroethane	20	2.00	µg/L	20.0		97.5	70-130			
1,1-Dichloroethane	18	2.00	µg/L	20.0		91.6	70-130			
1,1-Dichloroethylene	15	2.00	µg/L	20.0		76.6	50-150			
trans-1,2-Dichloroethylene	18	2.00	µg/L	20.0		88.6	70-130			
1,2-Dichloropropane	18	2.00	µg/L	20.0		89.9	35-165			
cis-1,3-Dichloropropene	18	2.00	µg/L	20.0		87.6	25-175			
trans-1,3-Dichloropropene	16	2.00	µg/L	20.0		79.2	50-150			
Ethylbenzene	20	2.00	µg/L	20.0		102	60-140			
Methyl tert-Butyl Ether (MTBE)	18	2.00	µg/L	20.0		89.4	70-130			
Methylene Chloride	16	5.00	µg/L	20.0		79.1	60-140			
1,1,2,2-Tetrachloroethane	23	2.00	µg/L	20.0		113	60-140			
Tetrachloroethylene	21	2.00	µg/L	20.0		105	70-130			
Toluene	19	1.00	µg/L	20.0		97.4	70-130			
1,1,1-Trichloroethane	18	2.00	µg/L	20.0		90.9	70-130			
1,1,2-Trichloroethane	20	2.00	µg/L	20.0		100	70-130			
Trichloroethylene	18	2.00	µg/L	20.0		92.2	65-135			
Trichlorofluoromethane (Freon 11)	15	2.00	µg/L	20.0		74.4	50-150			
Vinyl Chloride	32	2.00	µg/L	20.0		159	5-195			
m+p Xylene	41	2.00	µg/L	40.0		103	70-130			
o-Xylene	21	2.00	µg/L	20.0		105	70-130			
Surrogate: 1,2-Dichloroethane-d4	*23.5*		µg/L	25.0		94.2	70-130			
Surrogate: Toluene-d8	*24.5*		µg/L	25.0		97.9	70-130			
Surrogate: 4-Bromofluorobenzene	*24.6*		µg/L	25.0		98.3	70-130			

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QUALITY CONTROL

Semivolatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B239937 - SW-846 3510C										
Blank (B239937-BLK1)				Prepared: 09/04/19 Analyzed: 09/06/19						
Benzo(a)anthracene (SIM)	ND	0.050	µg/L							
Benzo(a)pyrene (SIM)	ND	0.10	µg/L							
Benzo(b)fluoranthene (SIM)	ND	0.050	µg/L							
Benzo(k)fluoranthene (SIM)	ND	0.20	µg/L							
Chrysene (SIM)	ND	0.20	µg/L							
Dibenz(a,h)anthracene (SIM)	ND	0.10	µg/L							
Indeno(1,2,3-cd)pyrene (SIM)	ND	0.10	µg/L							
Naphthalene (SIM)	ND	1.0	µg/L							
Surrogate: 2-Fluorophenol (SIM)	*84.3*		µg/L	200		42.1	15-110			
Surrogate: Phenol-d6 (SIM)	*63.9*		µg/L	200		31.9	15-110			
Surrogate: Nitrobenzene-d5	*70.8*		µg/L	100		70.8	30-130			
Surrogate: 2-Fluorobiphenyl	*49.7*		µg/L	100		49.7	30-130			
Surrogate: 2,4,6-Tribromophenol (SIM)	*165*		µg/L	200		82.3	15-110			
Surrogate: p-Terphenyl-d14	*66.7*		µg/L	100		66.7	30-130			
LCS (B239937-BS1)				Prepared: 09/04/19 Analyzed: 09/06/19						
Benzo(a)anthracene (SIM)	42.9	1.0	µg/L	50.0		85.9	33-143			
Benzo(a)pyrene (SIM)	40.4	2.0	µg/L	50.0		80.8	17-163			
Benzo(b)fluoranthene (SIM)	45.0	1.0	µg/L	50.0		89.9	24-159			
Benzo(k)fluoranthene (SIM)	46.8	4.0	µg/L	50.0		93.6	11-162			
Chrysene (SIM)	34.4	4.0	µg/L	50.0		68.8	17-168			
Dibenz(a,h)anthracene (SIM)	42.5	2.0	µg/L	50.0		85.0	10-227			
Indeno(1,2,3-cd)pyrene (SIM)	45.4	2.0	µg/L	50.0		90.7	10-171			
Naphthalene (SIM)	35.5	20	µg/L	50.0		71.0	21-133			
Surrogate: 2-Fluorophenol (SIM)	*92.1*		µg/L	200		46.1	15-110			
Surrogate: Phenol-d6 (SIM)	*72.0*		µg/L	200		36.0	15-110			
Surrogate: Nitrobenzene-d5	*74.3*		µg/L	100		74.3	30-130			
Surrogate: 2-Fluorobiphenyl	*60.7*		µg/L	100		60.7	30-130			
Surrogate: 2,4,6-Tribromophenol (SIM)	*179*		µg/L	200		89.6	15-110			
Surrogate: p-Terphenyl-d14	*58.1*		µg/L	100		58.1	30-130			
LCS Dup (B239937-BSD1)				Prepared: 09/04/19 Analyzed: 09/06/19						
Benzo(a)anthracene (SIM)	37.5	1.0	µg/L	50.0		75.0	33-143	13.5	53	
Benzo(a)pyrene (SIM)	35.3	2.0	µg/L	50.0		70.6	17-163	13.4	72	
Benzo(b)fluoranthene (SIM)	39.8	1.0	µg/L	50.0		79.5	24-159	12.3	71	
Benzo(k)fluoranthene (SIM)	41.9	4.0	µg/L	50.0		83.8	11-162	11.1	63	
Chrysene (SIM)	31.2	4.0	µg/L	50.0		62.4	17-168	9.88	87	
Dibenz(a,h)anthracene (SIM)	39.0	2.0	µg/L	50.0		78.0	10-227	8.64	126	
Indeno(1,2,3-cd)pyrene (SIM)	40.9	2.0	µg/L	50.0		81.8	10-171	10.4	99	‡
Naphthalene (SIM)	31.5	20	µg/L	50.0		63.0	21-133	11.9	65	
Surrogate: 2-Fluorophenol (SIM)	*79.1*		µg/L	200		39.5	15-110			
Surrogate: Phenol-d6 (SIM)	*62.3*		µg/L	200		31.2	15-110			
Surrogate: Nitrobenzene-d5	*64.0*		µg/L	100		64.0	30-130			
Surrogate: 2-Fluorobiphenyl	*54.8*		µg/L	100		54.8	30-130			
Surrogate: 2,4,6-Tribromophenol (SIM)	*157*		µg/L	200		78.6	15-110			
Surrogate: p-Terphenyl-d14	*50.5*		µg/L	100		50.5	30-130			

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QUALITY CONTROL

Semivolatile Organic Compounds by - GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC		%REC Limits	RPD	RPD Limit	Notes
Batch B239765 - SW-846 3510C											
Blank (B239765-BLK1)				Prepared: 09/04/19 Analyzed: 09/06/19							
Acenaphthene	ND	5.00	µg/L								
Acenaphthylene	ND	5.00	µg/L								
Anthracene	ND	5.00	µg/L								
Benzo(g,h,i)perylene	ND	5.00	µg/L								
Butylbenzylphthalate	ND	10.0	µg/L								
Di-n-butylphthalate	ND	10.0	µg/L								
Diethylphthalate	ND	10.0	µg/L								
Dimethylphthalate	ND	10.0	µg/L								
Di-n-octylphthalate	ND	10.0	µg/L								
Bis(2-Ethylhexyl)phthalate	ND	10.0	µg/L								
Fluoranthene	ND	5.00	µg/L								
Fluorene	ND	5.00	µg/L								
Naphthalene	ND	5.00	µg/L								
Phenanthrene	ND	5.00	µg/L								
Phenol	ND	10.0	µg/L								
Pyrene	ND	5.00	µg/L								
Surrogate: 2-Fluorophenol	*97.7*		µg/L	200		48.9		15-110			
Surrogate: Phenol-d6	*71.3*		µg/L	200		35.6		15-110			
Surrogate: Nitrobenzene-d5	*78.8*		µg/L	100		78.8		30-130			
Surrogate: 2-Fluorobiphenyl	*80.4*		µg/L	100		80.4		30-130			
Surrogate: 2,4,6-Tribromophenol	*190*		µg/L	200		94.8		15-110			
Surrogate: p-Terphenyl-d14	*92.3*		µg/L	100		92.3		30-130			
LCS (B239765-BS1)				Prepared: 09/04/19 Analyzed: 09/06/19							
Acenaphthene	47.3	5.00	µg/L	50.0		94.7		47-145			
Acenaphthylene	46.8	5.00	µg/L	50.0		93.5		33-145			
Anthracene	48.7	5.00	µg/L	50.0		97.4		27-133			
Benzo(g,h,i)perylene	50.9	5.00	µg/L	50.0		102		10-219			
Butylbenzylphthalate	50.9	10.0	µg/L	50.0		102		10-152			
Di-n-butylphthalate	50.2	10.0	µg/L	50.0		100		10-120			
Diethylphthalate	51.5	10.0	µg/L	50.0		103		10-120			
Dimethylphthalate	49.6	10.0	µg/L	50.0		99.1		10-120			
Di-n-octylphthalate	51.5	10.0	µg/L	50.0		103		4-146			
Bis(2-Ethylhexyl)phthalate	50.7	10.0	µg/L	50.0		101		8-158			
Fluoranthene	50.5	5.00	µg/L	50.0		101		26-137			
Fluorene	49.1	5.00	µg/L	50.0		98.3		59-121			
Naphthalene	45.4	5.00	µg/L	50.0		90.9		21-133			
Phenanthrene	48.0	5.00	µg/L	50.0		96.1		54-120			
Phenol	22.5	10.0	µg/L	50.0		44.9		5-120			
Pyrene	50.4	5.00	µg/L	50.0		101		52-120			
Surrogate: 2-Fluorophenol	*125*		µg/L	200		62.3		15-110			
Surrogate: Phenol-d6	*94.3*		µg/L	200		47.2		15-110			
Surrogate: Nitrobenzene-d5	*95.5*		µg/L	100		95.5		30-130			
Surrogate: 2-Fluorobiphenyl	*98.2*		µg/L	100		98.2		30-130			
Surrogate: 2,4,6-Tribromophenol	*235*		µg/L	200		**117**	*	15-110			S-07
Surrogate: p-Terphenyl-d14	*109*		µg/L	100		109		30-130			

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QUALITY CONTROL

Semivolatile Organic Compounds by - GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B239765 - SW-846 3510C										
LCS Dup (B239765-BSD1)				Prepared: 09/04/19 Analyzed: 09/06/19						
Acenaphthene	40.8	5.00	µg/L	50.0		81.7	47-145	14.7	48	
Acenaphthylene	40.5	5.00	µg/L	50.0		81.1	33-145	14.2	74	
Anthracene	43.0	5.00	µg/L	50.0		86.1	27-133	12.4	66	
Benzo(g,h,i)perylene	45.6	5.00	µg/L	50.0		91.2	10-219	10.9	97	
Butylbenzylphthalate	44.3	10.0	µg/L	50.0		88.6	10-152	13.8	60	
Di-n-butylphthalate	44.0	10.0	µg/L	50.0		88.1	10-120	13.1	47	
Diethylphthalate	44.6	10.0	µg/L	50.0		89.2	10-120	14.2	100	
Dimethylphthalate	43.1	10.0	µg/L	50.0		86.1	10-120	14.0	183	
Di-n-octylphthalate	45.0	10.0	µg/L	50.0		90.0	4-146	13.5	69	
Bis(2-Ethylhexyl)phthalate	44.2	10.0	µg/L	50.0		88.5	8-158	13.5	82	
Fluoranthene	43.8	5.00	µg/L	50.0		87.6	26-137	14.3	66	
Fluorene	42.7	5.00	µg/L	50.0		85.4	59-121	14.0	38	
Naphthalene	39.3	5.00	µg/L	50.0		78.6	21-133	14.4	65	
Phenanthrene	42.4	5.00	µg/L	50.0		84.9	54-120	12.4	39	
Phenol	18.8	10.0	µg/L	50.0		37.6	5-120	17.8	64	
Pyrene	42.8	5.00	µg/L	50.0		85.5	52-120	16.4	49	
Surrogate: 2-Fluorophenol	*107*		µg/L	200		53.5	15-110			
Surrogate: Phenol-d6	*80.4*		µg/L	200		40.2	15-110			
Surrogate: Nitrobenzene-d5	*83.0*		µg/L	100		83.0	30-130			
Surrogate: 2-Fluorobiphenyl	*85.8*		µg/L	100		85.8	30-130			
Surrogate: 2,4,6-Tribromophenol	*200*		µg/L	200		100	15-110			
Surrogate: p-Terphenyl-d14	*93.8*		µg/L	100		93.8	30-130			

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QUALITY CONTROL

Metals Analyses (Total) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B239843 - EPA 200.7										
Blank (B239843-BLK1)				Prepared: 09/05/19 Analyzed: 09/06/19						
Iron	ND	0.050	mg/L							
LCS (B239843-BS1)				Prepared: 09/05/19 Analyzed: 09/06/19						
Iron	4.05	0.050	mg/L	4.00		101	85-115			
LCS Dup (B239843-BSD1)				Prepared: 09/05/19 Analyzed: 09/06/19						
Iron	4.23	0.050	mg/L	4.00		106	85-115	4.13	20	
Batch B239844 - EPA 200.8										
Blank (B239844-BLK1)				Prepared: 09/05/19 Analyzed: 09/06/19						
Antimony	ND	1.0	µg/L							
Arsenic	ND	0.80	µg/L							
Cadmium	ND	0.20	µg/L							
Chromium	0.30	1.0	µg/L							J
Copper	ND	1.0	µg/L							
Lead	ND	0.50	µg/L							
Nickel	ND	5.0	µg/L							
Selenium	ND	5.0	µg/L							
Silver	ND	0.20	µg/L							
Zinc	ND	10	µg/L							
LCS (B239844-BS1)				Prepared: 09/05/19 Analyzed: 09/06/19						
Antimony	503	10	µg/L	500		101	85-115			
Arsenic	490	8.0	µg/L	500		98.1	85-115			
Cadmium	500	2.0	µg/L	500		100	85-115			
Chromium	519	10	µg/L	500		104	85-115			
Copper	1000	10	µg/L	1000		100	85-115			
Lead	492	5.0	µg/L	500		98.4	85-115			
Nickel	508	50	µg/L	500		102	85-115			
Selenium	483	50	µg/L	500		96.5	85-115			
Silver	497	2.0	µg/L	500		99.5	85-115			
Zinc	968	100	µg/L	1000		96.8	85-115			
LCS Dup (B239844-BSD1)				Prepared: 09/05/19 Analyzed: 09/06/19						
Antimony	500	10	µg/L	500		100	85-115	0.564	20	
Arsenic	500	8.0	µg/L	500		100	85-115	1.93	20	
Cadmium	500	2.0	µg/L	500		100	85-115	0.0162	20	
Chromium	501	10	µg/L	500		100	85-115	3.37	20	
Copper	956	10	µg/L	1000		95.6	85-115	4.85	20	
Lead	493	5.0	µg/L	500		98.6	85-115	0.246	20	
Nickel	492	50	µg/L	500		98.4	85-115	3.33	20	
Selenium	492	50	µg/L	500		98.4	85-115	1.89	20	
Silver	497	2.0	µg/L	500		99.3	85-115	0.155	20	
Zinc	992	100	µg/L	1000		99.2	85-115	2.51	20	

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

QUALITY CONTROL

Metals Analyses (Total) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD		RPD Limit	Notes
Batch B239844 - EPA 200.8											
Duplicate (B239844-DUP1)	**Source: 19H1713-02**			Prepared: 09/05/19 Analyzed: 09/06/19							
Antimony	ND	1.0	µg/L		ND			NC		20	
Arsenic	1.96	0.80	µg/L		2.09			6.42		20	
Cadmium	0.0519	0.20	µg/L		0.0462			11.6		20	J
Chromium	1.03	1.0	µg/L		1.40			**30.7**	*	20	R-04
Copper	3.61	1.0	µg/L		3.89			7.44		20	
Lead	1.71	0.50	µg/L		1.83			6.83		20	
Nickel	1.80	5.0	µg/L		2.01			11.3		20	J
Selenium	ND	5.0	µg/L		ND			NC		20	
Silver	ND	0.20	µg/L		ND			NC		20	
Zinc	36.7	10	µg/L		38.0			3.37		20	
Matrix Spike (B239844-MS1)	**Source: 19H1713-02**			Prepared: 09/05/19 Analyzed: 09/06/19							
Antimony	488	10	µg/L	500	ND	97.7	70-130				
Arsenic	481	8.0	µg/L	500	ND	96.3	70-130				
Cadmium	481	2.0	µg/L	500	ND	96.3	70-130				
Chromium	493	10	µg/L	500	ND	98.7	70-130				
Copper	959	10	µg/L	1000	ND	95.9	70-130				
Lead	487	5.0	µg/L	500	1.83	97.0	70-130				
Nickel	485	50	µg/L	500	ND	96.9	70-130				
Selenium	470	50	µg/L	500	ND	94.1	70-130				
Silver	480	2.0	µg/L	500	ND	96.0	70-130				
Zinc	1000	100	µg/L	1000	38.0	96.5	70-130				
Batch B240040 - EPA 245.1											
Blank (B240040-BLK1)				Prepared & Analyzed: 09/09/19							
Mercury	ND	0.00010	mg/L								
LCS (B240040-BS1)				Prepared & Analyzed: 09/09/19							
Mercury	0.00375	0.00010	mg/L	0.00400		93.8	85-115				
LCS Dup (B240040-BSD1)				Prepared & Analyzed: 09/09/19							
Mercury	0.00369	0.00010	mg/L	0.00400		92.1	85-115	1.76		20	

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QUALITY CONTROL

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B239496 - SM21-22 3500 Cr B										
Blank (B239496-BLK1)				Prepared & Analyzed: 08/30/19						
Hexavalent Chromium	ND	0.0040	mg/L							
LCS (B239496-BS1)				Prepared & Analyzed: 08/30/19						
Hexavalent Chromium	0.10	0.0040	mg/L	0.100		103	83.9-121			
LCS Dup (B239496-BSD1)				Prepared & Analyzed: 08/30/19						
Hexavalent Chromium	0.11	0.0040	mg/L	0.100		113	83.9-121	8.65	10	
Batch B239498 - SM21-22 4500 CL G										
Blank (B239498-BLK1)				Prepared & Analyzed: 08/30/19						
Chlorine, Residual	ND	0.020	mg/L							Z-01
LCS (B239498-BS1)				Prepared & Analyzed: 08/30/19						
Chlorine, Residual	1.3	0.020	mg/L	1.29		102	66.3-134			Z-01
LCS Dup (B239498-BSD1)				Prepared & Analyzed: 08/30/19						
Chlorine, Residual	1.4	0.020	mg/L	1.29		105	66.3-134	2.66	9.96	Z-01
Duplicate (B239498-DUP1)	**Source: 19H1713-01**			Prepared & Analyzed: 08/30/19						
Chlorine, Residual	ND	0.040	mg/L		ND			NC	32.5	DL-03, Z-01
Matrix Spike (B239498-MS1)	**Source: 19H1713-01**			Prepared & Analyzed: 08/30/19						
Chlorine, Residual	1.2	0.040	mg/L	1.00	ND	124	10-167			DL-03, Z-01
Batch B239501 - SM21-22 2540D										
Blank (B239501-BLK1)				Prepared & Analyzed: 08/31/19						
Total Suspended Solids	ND	2.5	mg/L							
LCS (B239501-BS1)				Prepared & Analyzed: 08/31/19						
Total Suspended Solids	138	10	mg/L	200		69.0	57.6-118			
Batch B239647 - SM21-22 4500 H B										
Duplicate (B239647-DUP1)	**Source: 19H1713-01**			Prepared & Analyzed: 09/03/19						
pH	6.4		pH Units		6.4			0.234	5	
Batch B239783 - EPA 1664B										
Blank (B239783-BLK1)				Prepared & Analyzed: 09/05/19						
Silica Gel Treated HEM (SGT-HEM)	ND	1.4	mg/L							

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QUALITY CONTROL

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B239783 - EPA 1664B										
Blank (B239783-BLK2)				Prepared & Analyzed: 09/05/19						
Silica Gel Treated HEM (SGT-HEM)	ND	5.6	mg/L							
LCS (B239783-BS1)				Prepared & Analyzed: 09/05/19						
Silica Gel Treated HEM (SGT-HEM)	9.7		mg/L	10.0		97.0	64-132			
LCS (B239783-BS2)				Prepared & Analyzed: 09/05/19						
Silica Gel Treated HEM (SGT-HEM)	38		mg/L	40.0		95.0	64-132			
Batch B239970 - EPA 300.0										
Blank (B239970-BLK1)				Prepared & Analyzed: 09/07/19						
Chloride	ND	1.0	mg/L							
LCS (B239970-BS1)				Prepared & Analyzed: 09/07/19						
Chloride	4.8	1.0	mg/L	5.00		96.7	90-110			
LCS Dup (B239970-BSD1)				Prepared & Analyzed: 09/07/19						
Chloride	4.8	1.0	mg/L	5.00		96.7	90-110	0.0455	20	

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QUALITY CONTROL

Drinking Water Organics EPA 504.1 - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B240078 - EPA 504 water										
Blank (B240078-BLK1)				Prepared & Analyzed: 09/09/19						
1,2-Dibromoethane (EDB)	ND	0.021	µg/L							
1,2-Dibromoethane (EDB) [2C]	ND	0.021	µg/L							
Surrogate: 1,3-Dibromopropane	*1.12*		µg/L	1.07		105	70-130			
Surrogate: 1,3-Dibromopropane [2C]	*1.12*		µg/L	1.07		105	70-130			
LCS (B240078-BS1)				Prepared & Analyzed: 09/09/19						
1,2-Dibromoethane (EDB)	0.185	0.021	µg/L	0.185		100	70-130			
1,2-Dibromoethane (EDB) [2C]	0.190	0.021	µg/L	0.185		103	70-130			
Surrogate: 1,3-Dibromopropane	*1.13*		µg/L	1.05		107	70-130			
Surrogate: 1,3-Dibromopropane [2C]	*1.14*		µg/L	1.05		108	70-130			
LCS Dup (B240078-BSD1)				Prepared & Analyzed: 09/09/19						
1,2-Dibromoethane (EDB)	0.184	0.021	µg/L	0.182		101	70-130	0.478		
1,2-Dibromoethane (EDB) [2C]	0.193	0.021	µg/L	0.182		106	70-130	1.67		
Surrogate: 1,3-Dibromopropane	*1.04*		µg/L	1.04		100	70-130			
Surrogate: 1,3-Dibromopropane [2C]	*1.05*		µg/L	1.04		102	70-130			

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IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

EPA 504.1

LCS

Lab Sample ID: B240078-BS1 Date(s) Analyzed: 09/09/2019 09/09/2019

Instrument ID (1): Instrument ID (2):

GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%RPD
			FROM	TO		
1,2-Dibromoethane (EDB)	1	3.069	0.000	0.000	0.185	
	2	2.974	0.000	0.000	0.190	0.0

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IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

EPA 504.1

LCS Dup

Lab Sample ID: B240078-BSD1 Date(s) Analyzed: 09/09/2019 09/09/2019

Instrument ID (1): Instrument ID (2):

GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%RPD
			FROM	TO		
1,2-Dibromoethane (EDB)	1	3.071	0.000	0.000	0.184	
	2	2.975	0.000	0.000	0.193	7.0

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FLAG/QUALIFIER SUMMARY

*	QC result is outside of established limits.
†	Wide recovery limits established for difficult compound.
‡	Wide RPD limits established for difficult compound.
#	Data exceeded client recommended or regulatory level
ND	Not Detected
RL	Reporting Limit is at the level of quantitation (LOQ)
DL	Detection Limit is the lower limit of detection determined by the MDL study
MCL	Maximum Contaminant Level
	Percent recoveries and relative percent differences (RPDs) are determined by the software using values in the calculation which have not been rounded.
	No results have been blank subtracted unless specified in the case narrative section.
DL-03	Elevated reporting limit due to matrix interference.
H-05	Holding time was exceeded. pH analysis should be performed immediately at time of sampling. Nominal 15 minute holding time was exceeded.
J	Detected but below the Reporting Limit (lowest calibration standard); therefore, result is an estimated concentration (CLP J-Flag).
R-04	Duplicate relative percent difference (RPD) is a less useful indicator of sample precision for sample results that are <5 times the reporting limit (RL).
S-07	One associated surrogate standard recovery is outside of control limits but the other(s) is/are within limits. All recoveries are > 10%.
V-35	Initial calibration verification (ICV) did not meet method specifications and was biased on the high side for this compound. Reported result is estimated.
Z-01	SM 4500 test had calibration points outside of acceptable back calculated recoveries. Reanalysis yielded similar non-conformance.

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CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
624.1 in Water	
Acetone	CT,NY,MA,NH
tert-Amyl Methyl Ether (TAME)	MA
Benzene	CT,NY,MA,NH,RI,NC,ME,VA
tert-Butyl Alcohol (TBA)	NY,MA
Carbon Tetrachloride	CT,NY,MA,NH,RI,NC,ME,VA
1,2-Dichlorobenzene	CT,NY,MA,NH,RI,NC,ME,VA
1,3-Dichlorobenzene	CT,NY,MA,NH,RI,NC,ME,VA
1,4-Dichlorobenzene	CT,NY,MA,NH,RI,NC,ME,VA
1,2-Dichloroethane	CT,NY,MA,NH,RI,NC,ME,VA
cis-1,2-Dichloroethylene	NY,MA
1,1-Dichloroethane	CT,NY,MA,NH,RI,NC,ME,VA
1,1-Dichloroethylene	CT,NY,MA,NH,RI,NC,ME,VA
Ethanol	NY,MA,NH
Ethylbenzene	CT,NY,MA,NH,RI,NC,ME,VA
Methyl tert-Butyl Ether (MTBE)	NY,MA,NH,NC
Methylene Chloride	CT,NY,MA,NH,RI,NC,ME,VA
Naphthalene	NY,MA,NC
Tetrachloroethylene	CT,NY,MA,NH,RI,NC,ME,VA
Toluene	CT,NY,MA,NH,RI,NC,ME,VA
1,1,1-Trichloroethane	CT,NY,MA,NH,RI,NC,ME,VA
1,1,2-Trichloroethane	CT,NY,MA,NH,RI,NC,ME,VA
Trichloroethylene	CT,NY,MA,NH,RI,NC,ME,VA
Vinyl Chloride	CT,NY,MA,NH,RI,NC,ME,VA
m+p Xylene	CT,NY,MA,NH,RI,NC
o-Xylene	CT,NY,MA,NH,RI,NC
625.1 in Water	
Acenaphthene	CT,MA,NH,NY,NC,RI,ME,VA
Acenaphthylene	CT,MA,NH,NY,NC,RI,ME,VA
Anthracene	CT,MA,NH,NY,NC,RI,ME,VA
Benzo(g,h,i)perylene	CT,MA,NH,NY,NC,RI,ME,VA
1,3-Dichlorobenzene	MA,NC
1,4-Dichlorobenzene	MA,NC
1,2-Dichlorobenzene	MA,NC
Fluoranthene	CT,MA,NH,NY,NC,RI,ME,VA
Fluorene	CT,MA,NH,NY,NC,RI,ME,VA
Naphthalene	CT,MA,NH,NY,NC,RI,ME,VA
Phenanthrene	CT,MA,NH,NY,NC,RI,ME,VA
Pyrene	CT,MA,NH,NY,NC,RI,ME,VA
2-Fluorophenol	NC
2-Fluorophenol	NC,VA
Phenol-d6	VA
Nitrobenzene-d5	VA
EPA 200.7 in Water	
Iron	CT,MA,NH,NY,RI,NC,ME,VA
Hardness	CT,MA,NH,NY,RI,VA
EPA 200.8 in Water	

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CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
EPA 200.8 in Water	
Antimony	CT,MA,NH,NY,RI,NC,ME,VA
Arsenic	CT,MA,NH,NY,RI,NC,ME,VA
Cadmium	CT,MA,NH,NY,RI,NC,ME,VA
Chromium	CT,MA,NH,NY,RI,NC,ME,VA
Copper	CT,MA,NH,NY,RI,NC,ME,VA
Lead	CT,MA,NH,NY,RI,NC,ME,VA
Nickel	CT,MA,NH,NY,RI,NC,ME,VA
Selenium	CT,MA,NH,NY,RI,NC,ME,VA
Silver	CT,MA,NH,NY,RI,NC,ME,VA
Zinc	CT,MA,NH,NY,RI,NC,ME,VA
EPA 245.1 in Water	
Mercury	CT,MA,NH,RI,NY,NC,ME,VA
EPA 300.0 in Water	
Chloride	NC,NY,MA,VA,ME,NH,CT,RI
SM19-22 4500 NH3 C in Water	
Ammonia as N	NY,MA,CT,RI,VA,NC,ME
SM21-22 2540D in Water	
Total Suspended Solids	CT,MA,NH,NY,RI,NC,ME,VA
SM21-22 3500 Cr B in Water	
Hexavalent Chromium	NY,CT,NH,RI,ME,VA,NC
SM21-22 4500 CL G in Water	
Chlorine, Residual	CT,MA,RI,ME
SM21-22 4500 H B in Water	
pH	CT,MA,RI

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

Code	Description	Number	Expires
AIHA	AIHA-LAP, LLC - ISO17025:2017	100033	03/1/2020
MA	Massachusetts DEP	M-MA100	06/30/2020
CT	Connecticut Department of Publilc Health	PH-0567	09/30/2021
NY	New York State Department of Health	10899 NELAP	04/1/2020
NH-S	New Hampshire Environmental Lab	2516 NELAP	02/5/2020
RI	Rhode Island Department of Health	LAO00112	12/30/2019
NC	North Carolina Div. of Water Quality	652	12/31/2019
NJ	New Jersey DEP	MA007 NELAP	06/30/2020
FL	Florida Department of Health	E871027 NELAP	06/30/2020
VT	Vermont Department of Health Lead Laboratory	LL015036	07/30/2020
ME	State of Maine	2011028	06/9/2021
VA	Commonwealth of Virginia	460217	12/14/2019
NH-P	New Hampshire Environmental Lab	2557 NELAP	09/6/2020
VT-DW	Vermont Department of Health Drinking Water	VT-255716	06/12/2020
NC-DW	North Carolina Department of Health	25703	07/31/2020
PA	Commonwealth of Pennsylvania DEP	68-05812	06/30/2020

con-test ANALYTICAL LABORATORY

KAF 19H1713

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CHAIN OF CUSTODY RECORD

Doc # 381 Rev 1_03242017

39 Spruce Street
East Longmeadow, MA 01028

Page 1 of 2

Company Name: EnviroTrac Ltd.
Address: 2 merchant St, Suite 2, Sharon, MA 02067
Phone: 781-793-0074
Project Name: GFI Westminster
Project Location: 100 Simplex Drive, Westminster, MA
Project Number:
Project Manager: D. Tomassi
Con-Test Quote Name/Number:
Invoice Recipient:
Sampled By: A. LaBella

Requested Turnaround Time
7-Day [X] 10-Day [ ]
Due Date:

Rush Approval Required
1-Day [ ] 3-Day [ ]
2-Day [ ] 4-Day [ ]

Data Delivery
Format: PDF [X] EXCEL [X]
Other:
CLP Like Data Pkg Required: [ ]
Email To: denateenvirotrac.com
Fax To #:

ANALYSIS REQUESTED

Con-Test Work Order#	Client Sample ID / Description	Beginning Date/Time	Ending Date/Time	Composite	Grab	[1]Matrix Code	Conc Code	pH by 4500H+B/EPA 150.1	Hardness by SM 2340	Chloride by EPA 300	Total Residual Chlorine by 4500-Cl G	TSS by SM 2540D	Ammonia by SM 4500 B,D	Total Metals by 200.8	Chromium VI by 7196A	Mercury by 245.1/7470A	TPH by 1664A	Ethanol by 8015C
	ETMW-1	8/30/19	10:15		X	GW	U	X	X	X	X	X	X	X	X	X	X	X
	SW-1	8/30/19	11:20		X	O	U	X	X				X	X	X	X		

3 → 1 1 1 1 2 3 # of Containers
I → I,S I,N I I,N I,H I,H [2] Preservation Code
P → P P P P A V [3] Container Code

Dissolved Metals Samples
O Field Filtered
O Lab to Filter

Organophosphate Samples
O Field Filtered
O Lab to Filter

Ethanol being run by 624.1, all VOC requested compounds being run by 624 beside EDB which is being lab preserved and run for 504 per Dena T - MEK 9/5/19

Comments: Total metals: Antimony, Arsenic, Cadmium, Chromium III, Copper, Iron, Lead, Nickel, Selenium, Silver, Zinc

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

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

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

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

Relinquished by: (signature)		Date/Time: 8/30/19 13:18
Received by: (signature)		Date/Time: 8-30-19 1318
Relinquished by: (signature)		Date/Time: 8-30-19 1600
Received by: (signature)		Date/Time: 8-30-19 1600
Relinquished by: (signature)		Date/Time: 8-30-19 1750
Received by: (signature)		Date/Time: 8/30/2019 1750

Detection Limit Requirements
MA: RCGW-1
CT:
Other:

Special Requirements
[X] MA MCP Required
MCP Certification Form Required
[ ] CT RCP Required
RCP Certification Form Required
[ ] MA State DW Required
PWSID #

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

Other
[ ] Chromatogram
[ ] AIHA-LAP, LLC

PCB ONLY
[ ] Soxhlet
[ ] Non Soxhlet

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KAF 19H1713

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CHAIN OF CUSTODY RECORD

Doc # 381 Rev 1_03242017

39 Spruce Street
East Longmeadow, MA 01028

Company Name: Environtrac Ltd
Address: 2 merchant st, suite 2, Sharon, MA 02067
Phone: 781-793-0074
Project Name: GFI Westminster
Project Location: 100 Simplex Drive, Westminster, MA
Project Number:
Project Manager: D. Tomassi
Con-Test Quote Name/Number:
Invoice Recipient:
Sampled By: A. LaBella

Requested Turnaround Time
7-Day [X] 10-Day [ ]
Due Date:

Prior Approval Required
1-Day [ ] 3-Day [ ]
2-Day [ ] 4-Day [ ]

Data Delivery
Format: PDF [X] EXCEL [X]
Other:
CLP Like Data Pkg Required: [ ]
Email To: dena@environtrac.com
Fax To #:

ANALYSIS REQUESTED

Con-Test Work Order#	Client Sample ID / Description	Beginning Date/Time	Ending Date/Time	Composite	Grab	[1]Matrix Code	Conc Code	3 / I,H / V Select VOCs by 624	2 / I / A Select SVOCs by 625	3 / I,H / V MTBE, EDB, Acetone by 524.2	Chlordane (8081)	Trip Blank	# of Containers / [2]Preservation Code / [3]Container Code
	ETMW-1	8/30/19	10:15		X	GW	U	X	X	X		X	
	SW-1	8/30/19	11:20		X	O	U						

Dissolved Metals Samples
[ ] Field Filtered
[ ] Lab to Filter

Orthophosphate Samples
[ ] Field Filtered
[ ] Lab to Filter

Comments: see Kaitlyn Feliciano for list of compounds for 624 and 625.

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

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

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

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

	Date/Time
Relinquished by: (signature) A. LaBella	8/30/19 13:18
Received by: (signature) Paul Chastney	8-30-19 13:18
Relinquished by: (signature) Paul Chastney	8-30-19 16:00
Received by: (signature)	8-30-19 16:00
Relinquished by: (signature)	8-30-19 17:50
Received by: (signature)	8/30/2019 1750

Detection Limit Requirements
MA: RCGW-1
RI:
Other:

Special Requirements
[X] MA MCP Required
[ ] MCP Certification Form Required
[ ] CT RCP Required
[ ] RCP Certification Form Required
[ ] MA State DW Required
PWSID #

con-test ANALYTICAL LABORATORY www.contestlabs.com
NELAC and AIHA-LAP, LLC Accredited

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

Other
[ ] Chromatogram
[ ] AIHA-LAP, LLC

PCB ONLY
[ ] Soxhlet
[ ] Non Soxhlet

Table of Contents

I Have Not Confirmed Sample Container Numbers With Lab Staff Before Relinquishing Over Samples_____

con-test® ANALYTICAL LABORATORY

Doc# 277 Rev 5 2017

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

Client Enviro Trac

Received By CF Date 8/30/2019 Time 1750

How were the samples received? In Cooler T No Cooler _____ On Ice T No Ice _____

Direct from Sampling _____ Ambient _____ Melted Ice _____

Were samples within Temperature? 2-6°C T By Gun # 2 Actual Temp - 3.9

By Blank # _____ Actual Temp - _____

Was Custody Seal Intact? N/A Were Samples Tampered with? N/A

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

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

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

Did COC include all pertinent Information? Client T Analysis T Sampler Name T

Project T ID's T Collection Dates/Times T

Are Sample labels filled out and legible? T

Are there Lab to Filters? F

Are there Rushes? F Who was notified? _____

Are there Short Holds? T Who was notified? _____

Is there enough Volume? T Who was notified? Irma

Is there Headspace where applicable? F MS/MSD? F

Proper Media/Containers Used? T Is splitting samples required? F

Were trip blanks received? T On COC? T

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

Vials	#	Containers:	#		#		#
Unp-		1 Liter Amb.	4	1 Liter Plastic		16 oz Amb.	
HCL-	11	500 mL Amb.		500 mL Plastic		8oz Amb/Clear	
Meoh-		250 mL Amb.		250 mL Plastic	13	4oz Amb/Clear	
Bisulfate-		Flashpoint		Col./Bacteria		2oz Amb/Clear	
DI-		Other Glass		Other Plastic		Encore	
Thiosulfate-		SOC Kit		Plastic Bag		Frozen:	
Sulfuric-		Perchlorate		Ziplock			

Unused Media

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

Comments:

Trip Blank - Sample #3 - Analysis unknown

The results set forth herein are provided by SGS North America Inc.

e-Hardcopy 2.0
Automated Report

Technical Report for

EnviroTrac Ltd.

GFI Westminster, 100 Simplex Drive, Westminster, MA

SGS Job Number: JC94245

Sampling Date: 08/30/19

Report to:

EnviroTrac, Ltd.
2 Merchant Street Suite #2
Sharon, MA 02067
DenaT@Envirotrac.com

ATTN: Dena Tomassi

Total number of pages in report: **16**

Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.

Mike Earp
General Manager

Client Service contact: Thelma Flaherty 732-329-0200

Certifications: NJ(12129), NY(10983), CA, CT, FL, IL, IN, KS, KY, LA, MA, MD, ME, MN, NC, OH VAP (CL0056), AK (UST-103), AZ (AZ0786), PA, RI, SC, TX, UT, VA, WV, DoD ELAP (ANAB L2248)

September 9, 2019

Ms. Dena Tomassi
EnviroTrac, Ltd.
2 Merchant Street Suite #2
Sharon, MA 02067

RE: SGS – Dayton, Job # JC94245 – Reissues

Dear Ms. Tomassi,

The final report for SGS job number JC94245 has been edited to reflect corrections to the final results. These edits have been incorporated into the revised report which is attached.

Specifically, the Method Detection Limits reporting has been added to Cyanide per your request. The attached revised report incorporates these revisions.

SGS apologizes for this occurrence and for any inconvenience this situation may have caused. Please contact me if I can be of further assistance in this matter.

Sincerely,

Report Department

SGS North America Inc.

CONTINUOUS SERVICE IMPROVEMENT!

Our goal is to continuously improve our service to you. Please share your ideas about how we can serve you better at EHS.US.CustomerCare@sgs.com. Your feedback is appreciated!

Sections: 1 2 3 4 5 6

Table of Contents

SGS North America Inc.

Sample Summary

EnviroTrac Ltd.

Job No: JC94245

GFI Westminster, 100 Simplex Drive, Westminster, MA

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
JC94245-1	08/30/19	10:15	AL	08/30/19	AQ	Ground Water	ETMW-1

CASE NARRATIVE / CONFORMANCE SUMMARY

Client:	EnviroTrac Ltd.	**Job No**	JC94245
Site:	GFI Westminster, 100 Simplex Drive, Westminster, MA	**Report Date**	9/6/2019 11:21:56 AM

On 08/30/2019, 1 Sample(s), 0 Trip Blank(s) and 0 Field Blank(s) were received at SGS North America Inc. at a maximum corrected temperature of 2.8 C. Samples were intact and chemically preserved, unless noted below. A SGS North America Inc. Job Number of JC94245 was assigned to the project. Laboratory sample ID, client sample ID and dates of sample collection are detailed in the report's Results Summary Section.

Specified quality control criteria were achieved for this job except as noted below. For more information, please refer to the analytical results and QC summary pages.

Compounds qualified as out of range in the continuing calibration summary report are acceptable as per method requirements when there is a high bias but the sample result is non-detect.

General Chemistry By Method EPA 335.4/LACHAT

Matrix: AQ **Batch ID:** GP23454

- All samples were prepared within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.

SGS North America Inc. certifies that data reported for samples received, listed on the associated custody chain or analytical task order, were produced to specifications meeting the Quality System precision, accuracy and completeness objectives except as noted.

Estimated non-standard method measurement uncertainty data is available on request, based on quality control bias and implicit for standard methods. Acceptable uncertainty requires tested parameter quality control data to meet method criteria.

SGS North America Inc. is not responsible for data quality assumptions if partial reports are used and recommends that this report be used in its entirety. Data release is authorized by SGS North America Inc indicated via signature on the report cover

Summary of Hits

Job Number: JC94245
Account: EnviroTrac Ltd.
Project: GFI Westminster, 100 Simplex Drive, Westminster, MA
Collected: 08/30/19

Lab Sample ID Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
JC94245-1	**ETMW-1**					

No hits reported in this sample.

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID:	ETMW-1		
Lab Sample ID:	JC94245-1	**Date Sampled:**	08/30/19
Matrix:	AQ - Ground Water	**Date Received:**	08/30/19
		Percent Solids:	n/a
Project:	GFI Westminster, 100 Simplex Drive, Westminster, MA		

General Chemistry

Analyte	Result	RL	MDL	Units	DF	Analyzed	By	Method
Cyanide	0.0041 U	0.010	0.0041	mg/l	1	09/05/19 16:09	KI	EPA 335.4/LACHAT

RL = Reporting Limit
MDL = Method Detection Limit

U = Indicates a result < MDL
B = Indicates a result > = MDL but < RL

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody
- MCP Form
- Sample Tracking Chronicle
- QC Evaluation: MA MCP Limits

SGS ACCUTEST (GW) (DT)

CHAIN OF CUSTODY

SGS Accutest - Dayton
2235 Route 130, Dayton, NJ 08810
TEL. 732-329-0200 FAX: 732-329-3499/3480
www.accutest.com

PAGE 1 OF 1

FED-EX Tracking # 1063 6739 2426 | Bottle Order Control #
SGS Accutest Quote # | SGS Accutest Job # JC94245

Client / Reporting Information

Company Name: EnviroTrac Ltd.
Street Address: 2 Merchant Street, Suite 2
City: Sharon State: MA Zip: 02067
Project Contact: D. Tomassi E-mail: donate@envirotrac.com
Phone #: 781-793-0074 Fax #:
Sampler(s) Name(s): A. LaBella Phone #:

Project Information

Project Name: GFI Westminster
Street: 100 Simplex Drive
City: Westminster State: MA
Project #:
Client Purchase Order #:
Project Manager: D. Tomassi

Billing Information (if different from Report to)

Company Name:
Street Address:
City State Zip:
Attention:

Requested Analysis (see TEST CODE sheet)

Cyanide by 335.4 * | Chloride by EPA 300 *

Matrix Codes

DW - Drinking Water
GW - Ground Water
WW - Water
SW - Surface Water
SO - Soil
SL - Sludge
SED-Sediment
OI - Oil
LIQ - Other Liquid
AIR - Air
SOL - Other Solid
WP - Wipe
FB-Field Blank
EB-Equipment Blank
RB- Rinse Blank
TB-Trip Blank

SGS Accutest Sample #	Field ID / Point of Collection	MEOH/DI Vial #	Collection Date	Collection Time	Sampled by	Matrix	# of bottles	Preserved: HCl	NaOH	HNO3	H2SO4	NONE	DI Water	MEOH	ENCORE	other	Cyanide by 335.4 *	Chloride by EPA 300 *	LAB USE ONLY
1	ETMW-1		8/30/19	10:15	AL	GW	2		1			1				1	X	X (DT)	FLO

INITIAL ASESSMENT 3A JK

LABEL VERIFICATION

SGS-ACCUTEST MARLBOR 8/30

Turnaround Time (Business days)

Approved By (SGS Accutest PM): / Date:

- [X] Std. 10 Business Days
- [ ] 5 Day RUSH
- [ ] 3 Day RUSH
- [ ] 2 Day RUSH
- [ ] 1 Day RUSH
- [ ] other

Emergency & Rush T/A data available VIA Lablink

Data Deliverable Information

- [ ] Commercial "A" (Level 1)
- [X] Commercial "B" (Level 2)
- [ ] FULLT1 (Level 3+4)
- [ ] NJ Reduced
- [ ] Commercial "C"
- [ ] NJ Data of Known Quality Protocol Reporting
- [ ] NYASP Category A
- [ ] NYASP Category B
- [ ] State Forms
- [ ] EDD Format
- [ ] Other

Commercial "A" = Results Only, Commercial "B" = Results + QC Summary
NJ Reduced = Results + QC Summary + Partial Raw data

Comments / Special Instructions

Other = 1 250 mL NaOH & ascorbic acid preserved plastic bottle
MCP Report Required. SGS-ACCUTEST MARLBOR
RCGW-1 (DT) * Chloride = ON HOLD
Sample inventory is verified upon receipt in the Laboratory

Sample Custody must be documented below each time samples change possession, including courier delivery.

	Relinquished by:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
1	[redacted]	8/30/19 13:30	1	2	8/30/19 1430	2
3		8/30/19 1900	3	4	8/31/19 1145	
5			5	Custody Seal # 10385	Intact / Not intact	Preserved where applicable: On Ice ✓ Cooler Temp: 2.9°C

IR7 IF

Form:SM088-01CRev.Date:9/13/16

SGS Sample Receipt Summary

Job Number: JC94245 **Client:** _____ **Project:** _____

Date / Time Received: 8/30/2019 2:30:00 PM **Delivery Method:** _____ **Airbill #'s:** _____

Cooler Temps (Raw Measured) °C: Cooler 1: (2.9);

Cooler Temps (Corrected) °C: Cooler 1: (2.8);

Cooler Security	Y	or	N		Y	or	N
1. Custody Seals Present:	☑		☐	3. COC Present:	☑		☐
2. Custody Seals Intact:	☑		☐	4. Smpl Dates/Time OK	☑		☐

Cooler Temperature	Y	or	N
1. Temp criteria achieved:	☑		☐
2. Cooler temp verification:	IR Gun		
3. Cooler media:	Ice (Bag)		
4. No. Coolers:	1		

Quality Control Preservation	Y	or	N	N/A
1. Trip Blank present / cooler:	☐		☐	☑
2. Trip Blank listed on COC:	☐		☐	☑
3. Samples preserved properly:	☑		☐	
4. VOCs headspace free:	☐		☐	☑

Sample Integrity - Documentation	Y	or	N
1. Sample labels present on bottles:	☑		☐
2. Container labeling complete:	☑		☐
3. Sample container label / COC agree:	☑		☐

Sample Integrity - Condition	Y	or	N
1. Sample recvd within HT:	☑		☐
2. All containers accounted for:	☑		☐
3. Condition of sample:	Intact		

Sample Integrity - Instructions	Y	or	N	N/A
1. Analysis requested is clear:	☑		☐	
2. Bottles received for unspecified tests	☐		☑	
3. Sufficient volume recvd for analysis:	☑		☐	
4. Compositing instructions clear:	☐		☐	☑
5. Filtering instructions clear:	☐		☐	☑

Test Strip Lot #s: pH 1-12: 229517 pH 12+: 208717 Other: (Specify) _____ _____

Comments

SM089-03
Rev. Date 12/7/17

Exhibit VII A-2: MassDEP Analytical Protocol Certification Form

MassDEP Analytical Protocol Certification Form

Laboratory Name:	SGS North America Inc. - Dayton	Project #:	JC94245
Project Location:	GFI Westminster, 100 Simplex Drive, Westminster, MA	MADEP RTN	None

This form provides certifications for the following data set: list Laboratory Sample ID Numbers(s)
JC94245-1

Test method: EPA 335.4/LACHAT

Matrices: Groundwater/Surface Water (X) Soil/Sediment ( ) Drinking Water ( ) Air ( ) Other ( )

CAM Protocol (check all that apply below):

8260 VOC ( ) CAM IIA	7470/7471 Hg ( ) CAM III B	MassDEP VPH ( ) CAM IV A	8081 Pesticides ( ) CAM V B	7196 Hex Cr ( ) CAM VI B	Mass DEP APH ( ) CAM IX A
8270 SVOC ( ) CAM II B	7010 Metals ( ) CAM III C	MassDEP EPH ( ) CAM IV B	8151 Herbicides ( ) CAM V C	8330 Explosives ( ) CAM VIII A	TO-15 VOC ( ) CAM IX B
6010 Metals ( ) CAM III A	6020 Metals ( ) CAM III D	8082 PCB ( ) CAM V A	9014 Total Cyanide/PAC ( ) CAM VI A	6860 Perchlorate ( ) CAM VIII B	

Affirmative Responses to Questions A Through F are required for "Presumptive Certainty status

A	Were all samples received in a condition consistent with those described on the Chain-of Custody, properly preserved (including temperature) in the field or laboratory, and prepared/analyzed within method holding times?	☑ Yes	☐ No
B	Were the analytical method(s) and all associated QC requirements specified in the selected CAM protocol(s) followed?	☑ Yes	☐ No
C	Were all required corrective actions and analytical response actions specified in the selected CAM protocol(s) implemented for all identified performance standard non-conformances?	☑ Yes	☐ No
D	Does the laboratory report comply with all the reporting requirements specified in CAM VII A, "Quality Assurance and Quality Control Guidelines for the Acquisition and Reporting of Analytical Data"?	☑ Yes	☐ No
E	VPH, EPH, APH, and TO-15 only: a. VPH, EPH, and APH Methods only: Was each method conducted without significant modification(s)? (Refer to the individual method(s) for a list of significant modifications). b. APH and TO-15 Methods only: Was the complete analyte list reported for each method?	☐ Yes ☐ Yes	☐ No ☐ No
F	Were all applicable CAM protocol QC and performance standard non-conformances identified and evaluated in a laboratory narrative (including all "No" responses to Questions A through E)?	☑ Yes	☐ No

Responses to questions G, H, and I below is required for "Presumptive Certainty" status

G	Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocols	☑ Yes	☐ No [1]
	Data User Note: Data that achieve "Presumptive Certainty" status may not necessarily meet the data useability and representativeness requirements described in 310 CMR 40.1056(2)(k) and WSC-07-350.		
H	Were **all** QC performance standards specified in the CAM protocol(s) achieved?	☑ Yes	☐ No [1]
I	Were results reported for the complete analyte list specified in the selected CAM protocol(s)?	☑ Yes	☐ No [1]

[1] ***All Negative responses must be addressed in an attached Environmental Laboratory case narrative.***

I the undersigned, attest under the pains and penalties of perjury that, based upon my personal inquiry of those responsible for obtaining the information, the material contained in this analytical report is, to the best of my knowledge and belief, accurate and complete.

Signature: _____ **Position:** **General Manager**

Printed Name: **Mike Earp** **Date:** **06-Sep-19**

Internal Sample Tracking Chronicle

EnviroTrac Ltd.

Job No: JC94245

GFI Westminster, 100 Simplex Drive, Westminster, MA

Sample Number	Method	Analyzed	By	Prepped	By	Test Codes
JC94245-1 ETMW-1	Collected: 30-AUG-19 10:15 By: AL			Received: 30-AUG-19 By: DDH		
JC94245-1	EPA 335.4/LACHAT	05-SEP-19 16:09	KI	05-SEP-19	JW	CN

QC Evaluation: MA MCP Limits

Job Number: JC94245
Account: EnviroTrac Ltd.
Project: GFI Westminster, 100 Simplex Drive, Westminster, MA
Collected: 08/30/19

QC Sample ID	CAS#	Analyte	Sample Type	Result Type	Result	Units	Limits

No MA MCP Limits Found.

* Sample used for QC is not from job JC94245

General Chemistry

QC Data Summaries

Includes the following where applicable:

- Method Blank and Blank Spike Summaries
- Duplicate Summaries
- Matrix Spike Summaries

METHOD BLANK AND SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: JC94245
Account: ENVMAS - EnviroTrac Ltd.
Project: GFI Westminster, 100 Simplex Drive, Westminster, MA

Analyte	Batch ID	RL	MB Result	Units	Spike Amount	BSP Result	BSP %Recov	QC Limits
Cyanide	GP23454/GN99586	0.010	0.0	mg/l	0.0833	0.0822	98.7	90-110%

Associated Samples:
Batch GP23454: JC94245-1
(*) Outside of QC limits

ATTACHMENT C
Dilution Factor Calculations

From: Ruan, Xiaodan (DEP)
To: Dena Tomassi
Cc: Vakalopoulos, Catherine (DEP)
Subject: RE: RGP 7Q10 and Dilution Factor review
Date: Friday, October 18, 2019 12:30:10 PM
Attachments: image002.png
image003.png
image004.png
100 Simplex Drive, Westminster, MA.pdf

Hi Dena,

Based on the description and the map of the discharge location, I also run StreamStats, but using a different point (42.556501, -71.914121) that is assumed to be the closest to the point where discharge enters the daylight receiving water. The StreamStats did not generate a 7Q10 (see attached report), therefore, it is determined that there will be no dilution for this proposed discharge at 100 Simplex Drive, Westminster, MA.

To assist you with filling out the NOI for coverage under the RGP, the nearest downstream waterbody that has a segment ID is Round Meadow Pond, identified as MA81114. Round Meadow Pond is listed under Category 3 "No uses assessed" in the *Final Massachusetts Year 2014 Integrated List of Waters*.

I checked the RTN number in your original email and it appears that the site at 100 Simplex Drive, Westminster, MA is a *current* MCP site, therefore, you do not need to apply with MassDEP.

Please let me know if you have any questions.

Thanks,
Xiaodan

From: Vakalopoulos, Catherine (DEP) <catherine.vakalopoulos@mass.gov>
Sent: Tuesday, October 15, 2019 6:41 PM
To: Ruan, Xiaodan (DEP) <xiaodan.ruan@mass.gov>
Cc: 'Dena Tomassi' <denat@envirotrac.com>
Subject: FW: RGP 7Q10 and Dilution Factor review

Hi Xiaodan,
Please let me know if you have time to look at this tomorrow (Wednesday).
Thanks,
Cathy

Cathy Vakalopoulos, Massachusetts Department of Environmental Protection
1 Winter St., Boston, MA 02108, 617-348-4026

From: Dena Tomassi [mailto:denat@envirotrac.com]
Sent: Tuesday, October 15, 2019 4:35 PM

To: Vakalopoulos, Catherine (DEP)
Subject: RGP 7Q10 and Dilution Factor review

Good afternoon Catherine,

I am in the process of generating a NOI for an RGP. The RGP is needed for the treatment and discharge of dewatered groundwater during construction at a site in Westminster, MA. Treatment is required for chlorinated solvents (related to RTN 2-10229) in groundwater.

Treated water will be discharged into an on-site catch basin, which discharges to a drainage swale. Water which enters the swale migrates through wetlands, two fire suppression ponds, and other perennial/intermittent streams, which ultimately discharge to Round Meadow Pond (see attached Figures).

As described in the RGP instructions, I used StreamStats to calculate the dilution factor (both also attached). The 7Q10 is 0.128 cubic feet per second and the calculated dilution factor is 1.48.

Please review and let me know if you have any questions or if you require additional information.

Thanks,

Dena

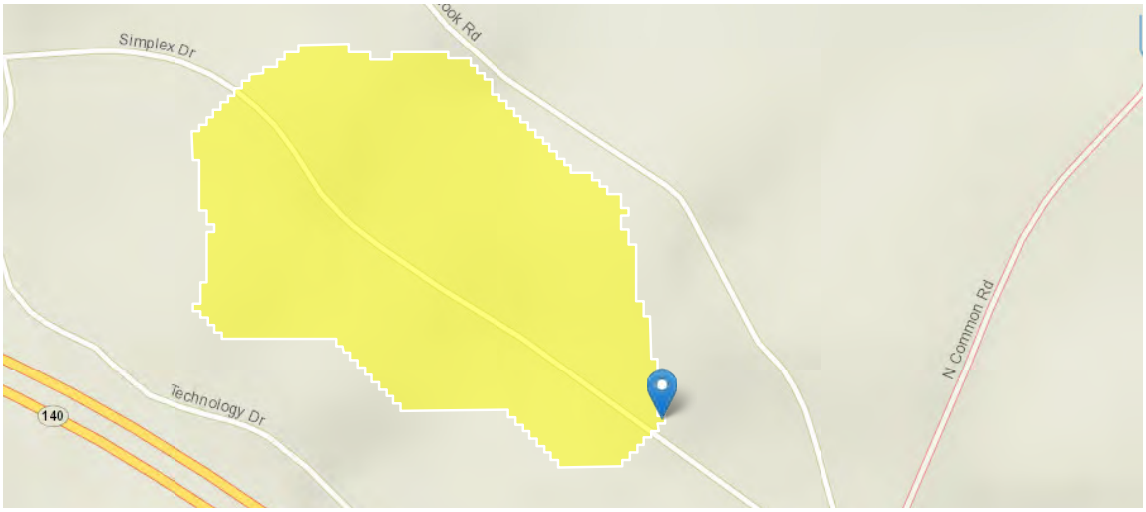
Dena Tomassi

Project Manager

EnviroTrac Ltd.
phone: 781.793.0074 | mobile: 201.988.7888 | email: denat@envirotrac.com
2 Merchant Street Suite 2 Sharon, MA 02067 | https://envirotrac.com

100 Simplex Drive, Westminster, MA

Region ID:	MA
Workspace ID:	MA20191018162435715000
Clicked Point (Latitude, Longitude):	42.55646, -71.91365
Time:	2019-10-18 12:24:52 -0400



Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	0.1	square miles
BSLDEM250	Mean basin slope computed from 1:250K DEM	2.637	percent
DRFTPERSTR	Area of stratified drift per unit of stream length	-100000	square mile per mile
MAREGION	Region of Massachusetts 0 for Eastern 1 for Western	0	dimensionless

Low-Flow Statistics Parameters[Statewide Low Flow WRIR00 4135]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	0.1	square miles	1.61	149
BSLDEM250	Mean Basin Slope from 250K DEM	2.637	percent	0.32	24.6
DRFTPERSTR	Stratified Drift per Stream Length	-100000	square mile per mile	0	1.29
MAREGION	Massachusetts Region	0	dimensionless	0	1

Low-Flow Statistics Flow Report[Statewide Low Flow WRIR00 4135]

Statistic	Value	Unit

Low-Flow Statistics Citations

Application Version: 4.3.9

ATTACHMENT D
Historic Places

National Register of Historic Places

Ref#	Property Name	Status	Restricted Address	Name of Multiple Property Listing	State	County	City
83000612	Westminster Village-Academy Hill Historic District	Listed	FALSE		MASSACHUSETTS	Worcester	Westminster
87000374	Wood, Ahijah, House	Listed	FALSE		MASSACHUSETTS	Worcester	Westminster
83000614	Wood, Ezra-Levi Warner Place	Listed	FALSE		MASSACHUSETTS	Worcester	Westminster
87000375	Wood, Nathan, House	Listed	FALSE		MASSACHUSETTS	Worcester	Westminster

National Register of Historic Places

Ref#	Property Name	Street & Number	Listed Date	NHL Designated Date	Architects/Builders	Federal Agencies
83000612	Westminster Village-Academy Hill Historic District	Bacon, Adams, Main, Dawley, Academy Hill, Leominster, and Pleasant Sts.	30490		Multiple	
87000374	Wood, Ahijah, House	174 Worcester Rd.	32037		Unknown	
83000614	Wood, Ezra-Levi Warner Place	165 Depot Rd.	30504			
87000375	Wood, Nathan, House	164 Worcester Rd.	32036		Unknown	

National Register of Historic Places

Ref#	Property Name	Other Names	Park Name	Significant Persons	Notes	Link to record
83000612	Westminster Village-Academy Hill Historic District	Westminster Village and Academy Hill				https://catalog.archives.gov/id/63797127
87000374	Wood, Ahijah, House	Nathaniel Merrill House; The Valley Hotel; Levi Warner House		Multiple		https://catalog.archives.gov/id/63797111
83000614	Wood, Ezra-Levi Warner Place					https://catalog.archives.gov/id/63797414
87000375	Wood, Nathan, House					https://catalog.archives.gov/id/63797286

Massachusetts Cultural Resource Information System
MACRIS

MACRIS Search Results

Search Criteria: Town(s): Westminster; Resource Type(s): Area, Building, Burial Ground, Object, Structure

Inv. No.	Property Name	Street	Town	Year
WST.A	Westminster Village - Academy Hill Historic Dist.		Westminster	
WST.B	Leominster State Forest - CCC Camp Area		Westminster	
WST.C	Leominster State Forest - Crow Hill Pond Area		Westminster	
WST.D	Wachusett Mountain State Reservation		Westminster	
WST.918	Cowee - Smith Farm Complex		Westminster	
WST.902	First Meeting House Marker	Academy Hill	Westminster	c 1935
WST.29	Merriam, Artemas House	5 Academy Hill Rd	Westminster	c 1870
WST.34	Peckham, Dea. Robert House	12 Academy Hill Rd	Westminster	1820
WST.176	Upton School	13 Academy Hill Rd	Westminster	1912
WST.30	Wood, Abraham - Foote House	19 Academy Hill Rd	Westminster	1829
WST.911	Westminster Academy Marker	19 Academy Hill Rd	Westminster	1923
WST.33	Dustin, Alexander House	22 Academy Hill Rd	Westminster	c 1809
WST.32	Beaman, Silas House	34 Academy Hill Rd	Westminster	1793
WST.178		6 Academy St	Westminster	c 1894
WST.187	Whitman, Widow House	10 Adams St	Westminster	c 1845
WST.903	Ashburnham State Road Bridge over Phillips Brook	Ashburnham State Rd	Westminster	1926
WST.69	Westminster Town Hall	3 Bacon St	Westminster	1839
WST.906	Spanish - American War Memorial	3 Bacon St	Westminster	1946
WST.186	Cutting, Nathan Howard House	6 Bacon St	Westminster	c 1830
WST.182	Minott, J. Nelson House	7 Bacon St	Westminster	c 1838
WST.67	Lamb, Greenlief House	8 Bacon St	Westminster	r 1840
WST.68	Ames, Jacob House	9 Bacon St	Westminster	1837
WST.185	Whitney, Jonas House	10 Bacon St	Westminster	1834
WST.132	Whitney, Benjamin House	11 Bacon St	Westminster	c 1836
WST.156	Holden, Jonas House	12 Bacon St	Westminster	c 1814
WST.183	Merriam, Alfred - Whitney, Stillman House	13 Bacon St	Westminster	1850
WST.70	Whitman, Jerome House	14 Bacon St	Westminster	1850
WST.133	Cowie, Joel House	15 Bacon St	Westminster	1850
WST.71	Darby, Joseph House	16 Bacon St	Westminster	c 1800
WST.184	Morse, Stedman House	17 Bacon St	Westminster	r 1835
WST.72	Raymond, Aretas House	18 Bacon St	Westminster	1830
WST.127	Holden, Betsey House	19 Bacon St	Westminster	c 1836
WST.157	Lewis, John - Goodridge, John House	22 Bacon St	Westminster	1837
WST.73	Thurston, Moses House	54 Bacon St	Westminster	c 1778
WST.144	Bemis, William House	23 Battles Rd	Westminster	1747
WST.131	Edgell, John - Sawyer, Amos House	59 Bean Porridge Hill	Westminster	c 1800
WST.117	Conant, Thomas House	6 Brooks Ave	Westminster	c 1759
WST.46	White, James House	10 Carter Rd	Westminster	c 1798
WST.37	Miles, Reuben House	34 Carter Rd	Westminster	c 1754
WST.38	Damon, Timothy Jr. House	53 Carter Rd	Westminster	1789
WST.111	Eager, Horatio House	64 Carter Rd	Westminster	c 1819
WST.39	Damon House, Old	71 Carter Rd	Westminster	c 1771

Massachusetts Cultural Resource Information System
MACRIS

MACRIS Search Results

Search Criteria: Town(s): Westminster; Resource Type(s): Area, Building, Burial Ground, Object, Structure

Inv. No.	Property Name	Street	Town	Year
WST.138	Jackson, Edward House	74 Chapel St	Westminster	1804
WST.907	Miles, Abner Grave Marker	Colony Rd	Westminster	1951
WST.109	Adams, George House	23 Cross Rd	Westminster	c 1819
WST.50	Garfield, Benjamin House	91 Davis Rd	Westminster	c 1741
WST.64	Harrington, Daniel and Nancy White House	189 Davis Rd	Westminster	1834
WST.160	Seaver, John House	197 Davis Rd	Westminster	c 1838
WST.56	Walker, Daniel House	218 Davis Rd	Westminster	c 1789
WST.208	Bolton, Simeon L. House	233 Davis Rd	Westminster	r 1845
WST.54	Whitney, Nathan House	260 Davis Rd	Westminster	1752
WST.31	Mann, Rev. Cyrus House	6 Dawley Rd	Westminster	c 1815
WST.48	Eager, Augustus House	18 Dawley Rd	Westminster	c 1849
WST.910	Westminster Town Pound	18 Dawley Rd	Westminster	1810
WST.211	Erikson, Fred and Helen K. House	30 Dawley Rd	Westminster	c 1870
WST.212	Pierce, Lyman Brown and Carrie Elizabeth Vinal House	34 Dawley Rd	Westminster	c 1870
WST.213	Good, Maude M. House	36 Dawley Rd	Westminster	c 1870
WST.905	New Meeting House Marker	Dean Hill Rd	Westminster	1904
WST.139	Laws, James Jr. House	54 Dean Hill Rd	Westminster	1797
WST.94	Curtis House	57 Depot Rd	Westminster	c 1761
WST.148	Curtis House	74 Depot Rd	Westminster	c 1870
WST.130	Sanger, John House	4 East Gardner Rd	Westminster	c 1751
WST.125		5 East Rd	Westminster	c 1800
WST.123	Brown, Jonathan House	34 East Rd	Westminster	c 1771
WST.124	Brown, Joseph House	40 East Rd	Westminster	c 1800
WST.62	Hoar, Timothy - Benjamin, Ahija House	115 East Rd	Westminster	c 1790
WST.65	Burpee Place	185 East Rd	Westminster	c 1845
WST.129	Penniman, William House	7 Eaton St	Westminster	1827
WST.40	Bigelow, Elisha House - Bigelow Tavern	51 Ellis Rd	Westminster	c 1757
WST.165	Kenney, James House	87 Ellis Rd	Westminster	r 1850
WST.175	Rice, Rev. Asaph House	3 Foster St	Westminster	c 1855
WST.118	Wyman, David - Rice, Sherman House	15 Hanks Hill Rd	Westminster	r 1860
WST.52	Sawin, Samuel House	10 Harrington Rd	Westminster	c 1741
WST.49	Hosley, Joseph House	46 Harrington Rd	Westminster	c 1741
WST.57	Baker, Richard House	68 Harrington Rd	Westminster	c 1790
WST.43	Gately, Patrick House	70 Knower Rd	Westminster	c 1855
WST.44	Sawin, Luke House	129 Knower Rd	Westminster	c 1835
WST.47	Darby, Andrew Jr. House	104 Knowler Rd	Westminster	c 1763

Massachusetts Cultural Resource Information System
MACRIS

MACRIS Search Results

Search Criteria: Town(s): Westminster; Resource Type(s): Area, Building, Burial Ground, Object, Structure

Inv. No.	Property Name	Street	Town	Year
WST.205	Flagg, Edward R. - Lucander, Kustaa House	32 Lanes Rd	Westminster	r 1865
WST.204	Merriam, Thomas House	33 Lanes Rd	Westminster	1777
WST.203	Merriam, Jonas - Nickerson, Sarah House	45 Lanes Rd	Westminster	c 1825
WST.202	Merriam, Caleb - Merriam, Oliver House	47 Lanes Rd	Westminster	c 1800
WST.55	Mirick, George Alonzo House - Orchard, The	79 Lanes Rd	Westminster	1900
WST.53	Whitney, John House	98 Lanes Rd	Westminster	1793
WST.207		98 Lanes Rd	Westminster	c 2007
WST.901	Westminster World War I Memorial	Leominster St	Westminster	1920
WST.99	Westminster Cracker Bakery	1 Leominster St	Westminster	c 1842
WST.27		3 Leominster St	Westminster	r 1770
WST.195		4 Leominster St	Westminster	r 1925
WST.28	Everett, Joshua House - Penniman Tavern	5 Leominster St	Westminster	c 1765
WST.35	Corey, Nathan House	6 Leominster St	Westminster	1818
WST.84	Miles, Isaac Inn	8 Leominster St	Westminster	1801
WST.181	Baker, Adin Franklin House	10 Leominster St	Westminster	c 1870
WST.177	Drury, Lyman M. House	11 Leominster St	Westminster	1892
WST.179	Miller, Frank. A House	13 Leominster St	Westminster	c 1890
WST.85	Minott, Luke House	14 Leominster St	Westminster	c 1827
WST.180	Merriam, Sarah House	15 Leominster St	Westminster	c 1890
WST.196		16 Leominster St	Westminster	c 1827
WST.86	Wetherbee, Joseph House	24 Leominster St	Westminster	1875
WST.194	Westminster Farmer's Cooperative Building	62 Leominster St	Westminster	c 1932
WST.1	Hoar, John House	24 Main St	Westminster	r 1755
WST.162	Kendall, S. Gerrish House	29 Main St	Westminster	r 1845
WST.2	Gardner Third Center School	30 Main St	Westminster	1789
WST.112	Mudge, Joseph House	31 Main St	Westminster	1804
WST.3	Eaton, Thomas House	32 Main St	Westminster	c 1855
WST.19	Pierce, Jarvis House	41 Main St	Westminster	1800
WST.4	Nichols, Marcus House	42 Main St	Westminster	r 1865
WST.20	Perry, Silas	57 Main St	Westminster	1768
WST.5	Eaton, Stillman House	58 Main St	Westminster	1850
WST.113	Kendall, Edward House	65 Main St	Westminster	r 1850
WST.170		87 Main St	Westminster	c 1847
WST.6	Everett, Dr. Jeremiah House	90 Main St	Westminster	c 1763
WST.7	Bartlett, Dr. Daniel House	94-96 Main St	Westminster	1780
WST.164	Westminster Hotel Bowling Alley	97A Main St	Westminster	1904
WST.10	Edgell House	98 Main St	Westminster	c 1820

Massachusetts Cultural Resource Information System
MACRIS

MACRIS Search Results

Search Criteria: Town(s): Westminster; Resource Type(s): Area, Building, Burial Ground, Object, Structure

Inv. No.	Property Name	Street	Town	Year
WST.11	Upham, Alvin House	100 Main St	Westminster	r 1820
WST.8	Lane, Mary W. House	104 Main St	Westminster	1840
WST.9	Mayo, William House	106 Main St	Westminster	1841
WST.12	Darby, Joseph Hossue	110 Main St	Westminster	c 1804
WST.13	Hill, David W. House	112 Main St	Westminster	1870
WST.163	Minott, Joseph House	113 Main St	Westminster	r 1820
WST.14	First Baptist Parsonage	116 Main St	Westminster	r 1860
WST.900	Miles, Daniel C. Marker	116 Main St	Westminster	
WST.21	Second Baptist Church	117 Main St	Westminster	r 1865
WST.15	Forbush Memorial Library	118 Main St	Westminster	1901
WST.22	Whitman, Joseph General Store	121 Main St	Westminster	1829
WST.23	Whitman, Joseph House	123 Main St	Westminster	1830
WST.24	Universalist Church	127 Main St	Westminster	1822
WST.172	Cutting, Jonas House	128 Main St	Westminster	c 1825
WST.114	Fire Station, Old	129 Main St	Westminster	c 1855
WST.25	Titus, Otis House	133 Main St	Westminster	c 1812
WST.16	Titus, Otis House	134 Main St	Westminster	1823
WST.199		135 Main St	Westminster	1973
WST.26	Cutler, Amos Marritt House	137 Main St	Westminster	c 1855
WST.17	First Congregational Church	138 Main St	Westminster	1942
WST.904	Westminster Soldiers - Civil War Monument	138 Main St	Westminster	1868
WST.18	Bigelow, Jabez House	142 Main St	Westminster	r 1755
WST.200		144 Main St	Westminster	1909
WST.121	Baptist Parsonage	2 Marshall Hill Rd	Westminster	1836
WST.171	Fenno, Frank Carriage House	6 Marshall Hill Rd	Westminster	r 1850
WST.88	Bemis, Philip Jr. House	25 Merriam Rd	Westminster	r 1775
WST.59	Powers Place, Old	59 Mile Hill Rd	Westminster	1766
WST.41	Knower, Thomas House	67 Minnott Rd	Westminster	1780
WST.42	Sawin, Jonathan - Wheeler, Mary Dike House	82 Minnott Rd	Westminster	1838
WST.45	Sawin, Jonathan House	1 Minott Rd	Westminster	r 1820
WST.800	Woodside Cemetery	9 Narrows Rd	Westminster	1742
WST.908	Hadley - Urban Memorial Arch and Gateway	9 Narrows Rd	Westminster	1913
WST.909	Westminster Revolutionary War Monument	9 Narrows Rd	Westminster	1905
WST.126	Derby, Ezra House	50 Narrows Rd	Westminster	c 1810
WST.168	Leland, Hollis J. House	90 Narrows Rd	Westminster	r 1845
WST.166	Underwood, J. House	95 Narrows Rd	Westminster	r 1845
WST.119	Perkins, Harrison House	98 Narrows Rd	Westminster	
WST.167	Baker, Elmer House	99 Narrows Rd	Westminster	c 1830
WST.103	Wyman, Harrison House	137 Narrows Rd	Westminster	c 1845
WST.120	Lucas, Henry House	139 Narrows Rd	Westminster	r 1820
WST.169	Wyman, Benjamin House	171 Narrows Rd	Westminster	r 1825
WST.89	Wyman, David House	177 Narrows Rd	Westminster	c 1793
WST.90	Robbins, Ephraim House	185 Narrows Rd	Westminster	c 1783

Massachusetts Cultural Resource Information System
MACRIS

MACRIS Search Results

Search Criteria: Town(s): Westminster; Resource Type(s): Area, Building, Burial Ground, Object, Structure

Inv. No.	Property Name	Street	Town	Year
WST.150	Newcomb House	22 Newcomb Rd	Westminster	r 1770
WST.110		7 Nichols St	Westminster	c 1830
WST.36	White, Marshall House	9 Nichols St	Westminster	c 1820
WST.115	Bigelow, John House	15 Nichols St	Westminster	c 1808
WST.77	Rand, John House	82 North Common Rd	Westminster	1751
WST.75	Graves, Levi Jr. House	96 North Common Rd	Westminster	c 1850
WST.76	Morse, Farwell House	102 North Common Rd	Westminster	c 1840
WST.78	Taylor, Ebenezer House	110 North Common Rd	Westminster	c 1757
WST.66	Moore, Fairbanks and Judith Bellows House	2 Old Worcester Rd	Westminster	r 1750
WST.137	Seaver, Isaac House	139 Overlook	Westminster	c 1773
WST.136	Spaulding, Merari House	99 Overlook Rd	Westminster	c 1800
WST.80	Smith, Charles House - Smith Tavern	21 Pierce Rd	Westminster	1792
WST.141	Fessenden, Timothy House	1 Pleasant St	Westminster	1837
WST.161	Wears, Abigail House	3 Pleasant St	Westminster	c 1839
WST.154		4 Pleasant St	Westminster	c 1840
WST.95	Cutting, Dr. Flavel House	5 Pleasant St	Westminster	c 1850
WST.197		9 Pleasant St	Westminster	c 1930
WST.87	Hager, Joseph House	11 Pleasant St	Westminster	c 1837
WST.912	Potato Hill Road Bridge over Phillips Brook	Potato Hill Rd	Westminster	c 1958
WST.149	Bacon, Edward House	10 Roper Rd	Westminster	1772
WST.151	Murdock, William House	16 Roper Rd	Westminster	c 1774
WST.201	Leominster State Forest - CCC Headquarters	Rt 31	Westminster	1933
WST.914	Leominster State Forest - CCC Camp Foundations	Rt 31	Westminster	1933
WST.915	Leominster State Forest - Crow Hill Pond	Rt 31	Westminster	1936
WST.916	Leominster State Forest - Crow Hill Pond Steps	Rt 31	Westminster	1936
WST.917	Leominster State Forest - Crow Hill Pond Dam	Rt 31	Westminster	1936
WST.173	Darby, Nathan House	83 Sargent Rd	Westminster	c 1823
WST.140	White, James House	2 Seaver St	Westminster	c 1830
WST.155	Beard, Joseph House	73 Shady Ave	Westminster	1777
WST.79	Whitman, Zechariah House - Whitman Tavern	238 South Ashburnham Rd	Westminster	c 1780
WST.214	Gilson, Merrick L. and Emeline Elvira Tucker House	119 South St	Westminster	r 1875
WST.215	Baker, Nathan and Eliza Burnap House	135 South St	Westminster	r 1875
WST.216	Dawley, Charles C. and Katie E. Merriam House	154 South St	Westminster	r 1875
WST.51	Houghton, Lemuel House	6 Spruce Rd	Westminster	1761
WST.217	Holden, Calvin and Sarah M. Underwood House	9 Spruce Rd	Westminster	1851
WST.218	Sawin, Reuben H. - Foster, Josiah House	37 Spruce Rd	Westminster	r 1755
WST.135	Jackson, Edward House - Town Farm	State Colony	Westminster	c 1766
WST.913	State Road East Bridge over Whitman River	State Rd East	Westminster	1925
WST.153	Barnes, Plympton House	56 State Rd East	Westminster	c 1840
WST.152	Raymond Saw Mill, Old	69 State Rd East	Westminster	1761
WST.147	Merriam, Caleb House	149 State Rd East	Westminster	1848
WST.93	Wood, Ezra - Warner, Levi Place	165 State Rd East	Westminster	c 1759
WST.116	Doty, Timothy House	131 State Rd West	Westminster	r 1825

Massachusetts Cultural Resource Information System
MACRIS

MACRIS Search Results

Search Criteria: Town(s): Westminster; Resource Type(s): Area, Building, Burial Ground, Object, Structure

Inv. No.	Property Name	Street	Town	Year
WST.81	Warren, Simeon House	2 Syd Smith Rd	Westminster	r 1800
WST.82	Whitney, Phinneas House	9 Syd Smith Rd	Westminster	c 1788
WST.146	Stearns, Thomas House	46 Town Farm Rd	Westminster	c 1792
WST.96	Hartwell, Leander House	121 Town Farm Rd	Westminster	r 1800
WST.142	Smith, Joseph House	17 Turnpike Rd	Westminster	1779
WST.192	Dupee, Isaac Carriage House	44 Turnpike Rd	Westminster	c 1765
WST.92	Dupee, Isaac House	45 Turnpike Rd	Westminster	c 1764
WST.193	Dupee, Isaac Barn	46 Turnpike Rd	Westminster	c 1765
WST.91	Garfield, Solomon House	57 Turnpike Rd	Westminster	c 1766
WST.143	Miles, Daniel House	103 Turnpike Rd	Westminster	c 1845
WST.104	Nelson, Gen. Miles House	104 Turnpike Rd	Westminster	c 1824
WST.83	Jackson, Josiah House	85 West Main St	Westminster	1757
WST.122	Raymond, George - Getchell, Warren E. House	36 West Princeton Rd	Westminster	1842
WST.206	Miller, Jonas House	93 West Princeton Rd	Westminster	c 1855
WST.58	Miller, Ezra House	109 West Princeton Rd	Westminster	1792
WST.102	Bemis, William - Day, Michael House	201 West Princeton Rd	Westminster	r 1820
WST.209	Merriam, Robert House	258 West Princeton Rd	Westminster	r 1835
WST.134	Lombard, Franklin House	12 Whitmanville Rd	Westminster	c 1839
WST.191		16 Whitney Rd	Westminster	c 1900
WST.190		56 Whitney St	Westminster	c 1900
WST.189	Crowell House	924 Whitney St	Westminster	c 1780
WST.210	Rice, Aaron Clark House	36 Worcester Rd	Westminster	c 1840
WST.159	Harrington, Seth House	86 Worcester Rd	Westminster	c 1750
WST.63	Wood, Nathan House	164 Worcester Rd	Westminster	c 1756
WST.174	Wood, N. House	174 Worcester Rd	Westminster	c 1756
WST.61	Wood, Ahijah House	175 Worcester Rd	Westminster	c 1795
WST.158		196 Worcester Rd	Westminster	c 1800
WST.60	Williams, Isaac House	302 Worcester Rd	Westminster	c 1775

ATTACHMENT E
IPaC Resource List

IPaC **U.S. Fish & Wildlife Service**

IPaC resource list

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

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

Location

Worcester County, Massachusetts

Local office

New England Ecological Services Field Office

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

70 Commercial Street, Suite 300
Concord, NH 03301-5094

http://www.fws.gov/newengland

Endangered species

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

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

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

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

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

Listed species[1] and their critical habitats are managed by the Ecological Services Program of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries[2]).

Species and critical habitats under the sole responsibility of NOAA Fisheries are **not** shown on this list. Please contact NOAA Fisheries for species under their jurisdiction.

1. Species listed under the Endangered Species Act are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the listing status page for more information.
2. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

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

Mammals

NAME	STATUS

Northern Long-eared Bat Myotis septentrionalis Threatened
No critical habitat has been designated for this species.
https://ecos.fws.gov/ecp/species/9045

Critical habitats

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

THERE ARE NO CRITICAL HABITATS AT THIS LOCATION.

Migratory birds

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

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described below.

1. The Migratory Birds Treaty Act of 1918.
2. The Bald and Golden Eagle Protection Act of 1940.

Additional information can be found using the following links:

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

The birds listed below are birds of particular concern either because they occur on the USFWS Birds of Conservation Concern (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ below. This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the E-bird data mapping tool (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found below.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON (IF A BREEDING SEASON IS INDICATED FOR A BIRD ON YOUR LIST, THE BIRD MAY BREED IN YOUR PROJECT AREA SOMETIME WITHIN THE TIMEFRAME SPECIFIED, WHICH IS A VERY LIBERAL ESTIMATE OF THE DATES INSIDE WHICH THE BIRD BREEDS ACROSS ITS ENTIRE RANGE. "BREEDS ELSEWHERE" INDICATES THAT THE BIRD DOES NOT LIKELY BREED IN YOUR PROJECT AREA.)
Bald Eagle *Haliaeetus leucocephalus* This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1626	Breeds Dec 1 to Aug 31
Black-billed Cuckoo *Coccyzus erythropthalmus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9399	Breeds May 15 to Oct 10
Bobolink *Dolichonyx oryzivorus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 20 to Jul 31
Canada Warbler *Cardellina canadensis* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 20 to Aug 10
Cape May Warbler *Setophaga tigrina* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Jun 1 to Jul 31
Prairie Warbler *Dendroica discolor* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 1 to Jul 31

Rusty Blackbird Euphagus carolinus — Breeds May 10 to Jul 20
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Wood Thrush Hylocichla mustelina — Breeds May 10 to Aug 31
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the FAQ "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

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

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

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

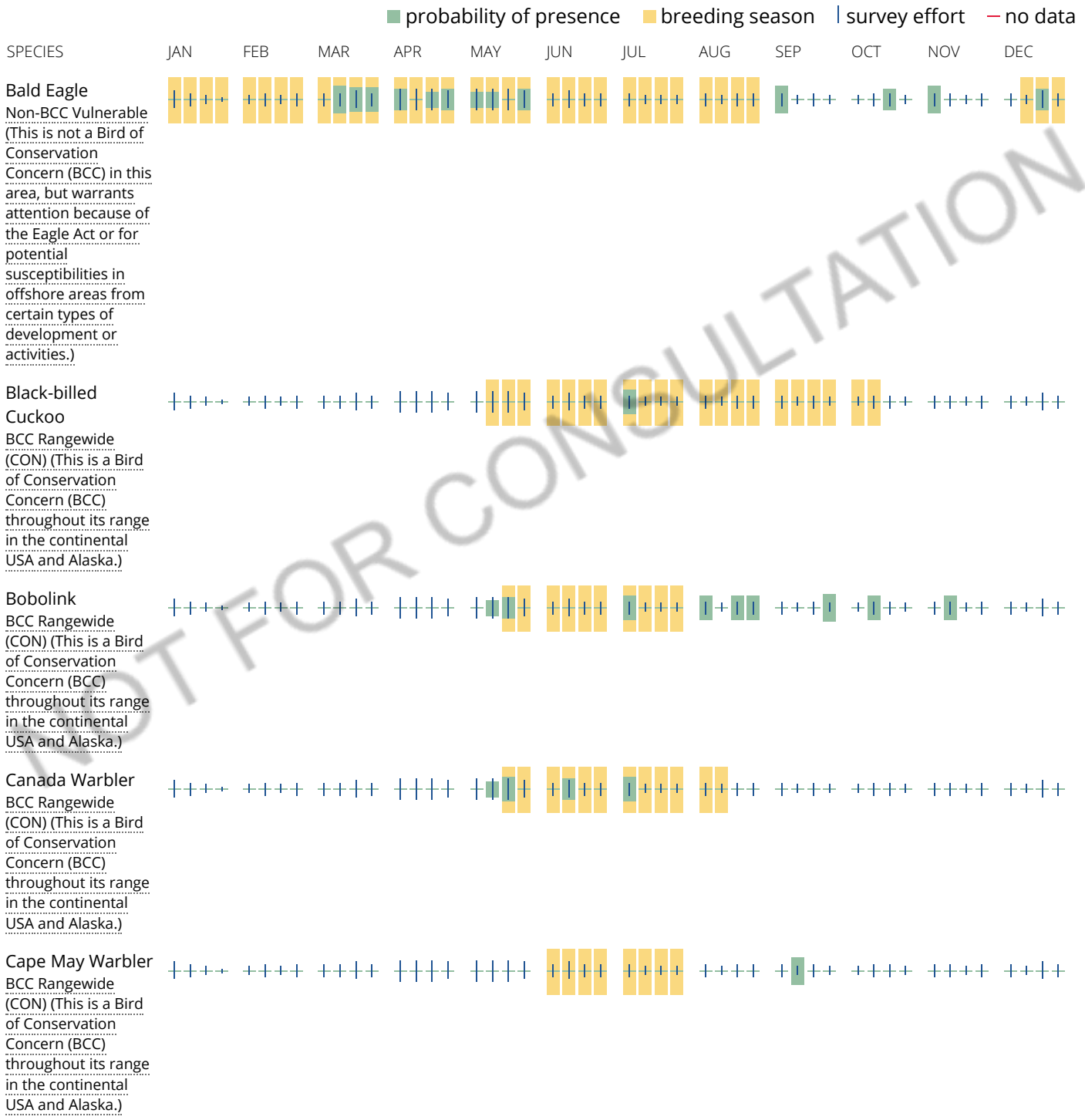
Breeding Season (■)
Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort (|)
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

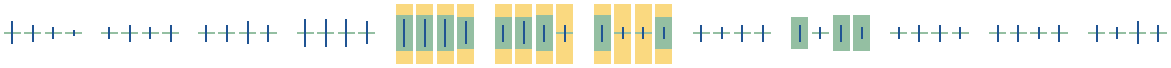
To see a bar's survey effort range, simply hover your mouse cursor over the bar.

No Data (–)
A week is marked as having no data if there were no survey events for that week.

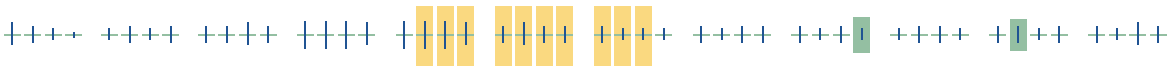
Survey Timeframe
Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.



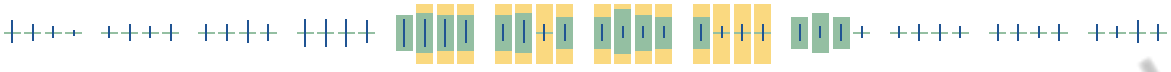
Prairie Warbler
BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)



Rusty Blackbird
BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)



Wood Thrush
BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)



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

Nationwide Conservation Measures describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. Additional measures and/or permits may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

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

The Migratory Bird Resource List is comprised of USFWS Birds of Conservation Concern (BCC) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the AKN Phenology Tool.

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

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

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

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

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

What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are Birds of Conservation Concern (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the Eagle Act requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the Northeast Ocean Data Portal. The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the Diving Bird Study and the nanotag studies or contact Caleb Spiegel or Pam Loring.

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to obtain a permit to avoid violating the Eagle Act should such impacts occur.

Proper Interpretation and Use of Your Migratory Bird Report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ “What does IPaC use to generate the migratory birds potentially occurring in my specified location”. Please be aware this report provides the “probability of presence” of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look

carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

Facilities

National Wildlife Refuge lands

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

THERE ARE NO REFUGE LANDS AT THIS LOCATION.

Fish hatcheries

THERE ARE NO FISH HATCHERIES AT THIS LOCATION.

Wetlands in the National Wetlands Inventory

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

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

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

This location overlaps the following wetlands:

FRESHWATER EMERGENT WETLAND

PEM1F

FRESHWATER FORESTED/SHRUB WETLAND

PFO1E
PFO1C

FRESHWATER POND
PUBH

RIVERINE
R5UBH

A full description for each wetland code can be found at the National Wetlands Inventory website

Data limitations

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

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

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

Data exclusions

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

Data precautions

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