89 Crawford Street
Leominster, Massachusetts 01453
Tel: 774.450.7177
Fax: 888.835.0617
www.lrt-llc.net

August 2, 2019

U.S. Environmental Protection Agency
Office of Ecosystem Protection
EPA/OEP RGP Applications Coordinator
5 Post Office Square, Suite 100 (OEP06-4)
Boston, Massachusetts 02109-3912

Reference: **Notice of Intent (NOI) - Remediation General Permit (RGP)**
189 Chelmsford Street
Chelmsford, Massachusetts

Dear Sir/Madam:

On behalf of Sovereign Consulting Inc (Sovereign), Lockwood Remediation Technologies, LLC (LRT) has prepared this Notice of Intent (NOI) requesting a determination of coverage under the United States Environmental Protection Agency's (EPA's) Remediation General Permit (RGP), pursuant EPA's National Pollutant Discharge Elimination System (NPDES) program. This NOI was prepared in accordance with the general requirements of the NPDES and related guidance documentation provided by EPA. The completed NOI Form is provided in **Appendix A**.

Site Information

This NOI has been prepared for the management of water that will be generated during dewatering activities associated with a tank removal and installation at a gas station located at 189 Chelmsford Street in Chelmsford, Massachusetts (the Site). This work will take place in a small portion of the site approximately 0.1 acres and is anticipated to be completed within one month. A Site Locus is provided as **Figure 1** and a Site Plan satisfying the requirements of RGP Appendix IV Part I.B and I.D is provided as **Figure 2**.

Work Summary

The project includes the installation of a two (2) 15,000-gallon underground storage tanks (USTs). The excavation area for the tanks is assumed to be 30' x 37' x 15' deep. To install the new USTs in the dry, dewatering is required to lower the groundwater table as the work is being performed. To do this, filtered sumps will be strategically placed in low spots within the excavation. The water generated during dewatering (Source water) will be pumped to a treatment system prior to discharge to a storm drain with a final outfall in Goldern Cove which is a tributary of River Meadow Brook. To characterize groundwater from the proposed excavation area, Sovereign collected representative groundwater samples from a one monitoring well on site on July 10, 2019. A sample of the receiving water (Goldern Cove) was collected at the same time. The samples were analyzed for various parameters in accordance with the NPDES RGP

Activity Category III-G. The location of receiving water and monitoring wells is depicted on Figures 1 and 2, respectively.

Discharge and Receiving Surface Water Information

A summary of the analytical results is provided in **Tables 1 and 2** included within **Appendix A**, and copies of the laboratory data reports are provided in **Appendix B**. The "Report Only" compounds ammonia and chloride were detected in the sample. Concentrations of non-halogenated volatile organic compounds (VOCs), total petroleum hydrocarbons (TPH), total residual chlorine (TRC), total suspended solids (TSS), and various metals were detected in groundwater at concentrations above the respective NPDES RGP Effluent Limitations. To meet these standards, Source water will undergo treatment that includes bag filtration and carbon filtration prior to discharge. Details of the water treatment system are provided below.

Water Treatment System

A water treatment system schematic is provided as **Figure 3**. Cutsheets of the system components, product information and Safety Data Sheets (SDS) are included in **Appendix C**.

Source water will be pumped to a treatment system with a design flow of up to 200 gallons per minute (gpm); the average effluent flow of the system is estimated to be 150 gpm, and the maximum flow will not exceed 200 gpm. Source water will enter one 21,000-gallon frac tank at the head of the system from the frac tank, the water will be pumped to a multi-bag filter skid (with two multi bag filters), followed by two carbon vessels plumbed in series. Each carbon vessel will contain 4,000 pounds of reactivated liquid-phase carbon. Discharge from the carbon vessel will pass through a flow/totalizer meter prior to discharge into a storm drain with an outfall in Goldern Cove a tributary of River Meadow Brook. The discharge will be at one location (Discharge Location 2) as depicted on **Figure 2**. Effluent sampling will correspond with this discharge location.

Consultation with Federal Services

LRT reviewed online electronic data viewers and databases from the Massachusetts Geographical Information System (MassGIS), the Massachusetts Division of Fisheries and Wildlife (MassWildlife; Natural Heritage and Endangered Species Program), and the U.S. National Parks Service Natural Historic Places (NPS). Based on this review, the Site and the point where the proposed discharge reaches the receiving surface water body are not located within an Area of Critical Environmental Concern (ACEC). The Site and the proposed discharge point are not located within Habitats of Rare Wetland Wildlife, Habitats of Rare Species, Estimated Habitats of Rare Wildlife, or listed as a National Historic Place. Documentation is included in **Appendix D**.

Coverage under NPDES RGP

It is our opinion that the proposed discharge is eligible for coverage under the NPDES RGP. On behalf of Sovereign, we are requesting coverage under the NPDES RGP for the discharge of treated wastewater to

Goldern Cove a tributary of River Meadow Brook in support of construction dewatering activities that are to take place at 189 Chelmsford Street in Chelmsford MA.

The enclosed NOI form provides required information on the general site conditions, discharge, treatment system, receiving water, and consultation with federal services. For this project, Lee Kennedy is considered the Operator and has operational control over the construction plans and specifications, including the ability to make modifications to those plans and specifications.

Please feel free to contact us at 774-450-7177 if you have any questions or if you require additional information.

Sincerely,
Lockwood Remediation Technologies, LLC

Jacob Jennings

Jacob Jennings
Staff Scientist

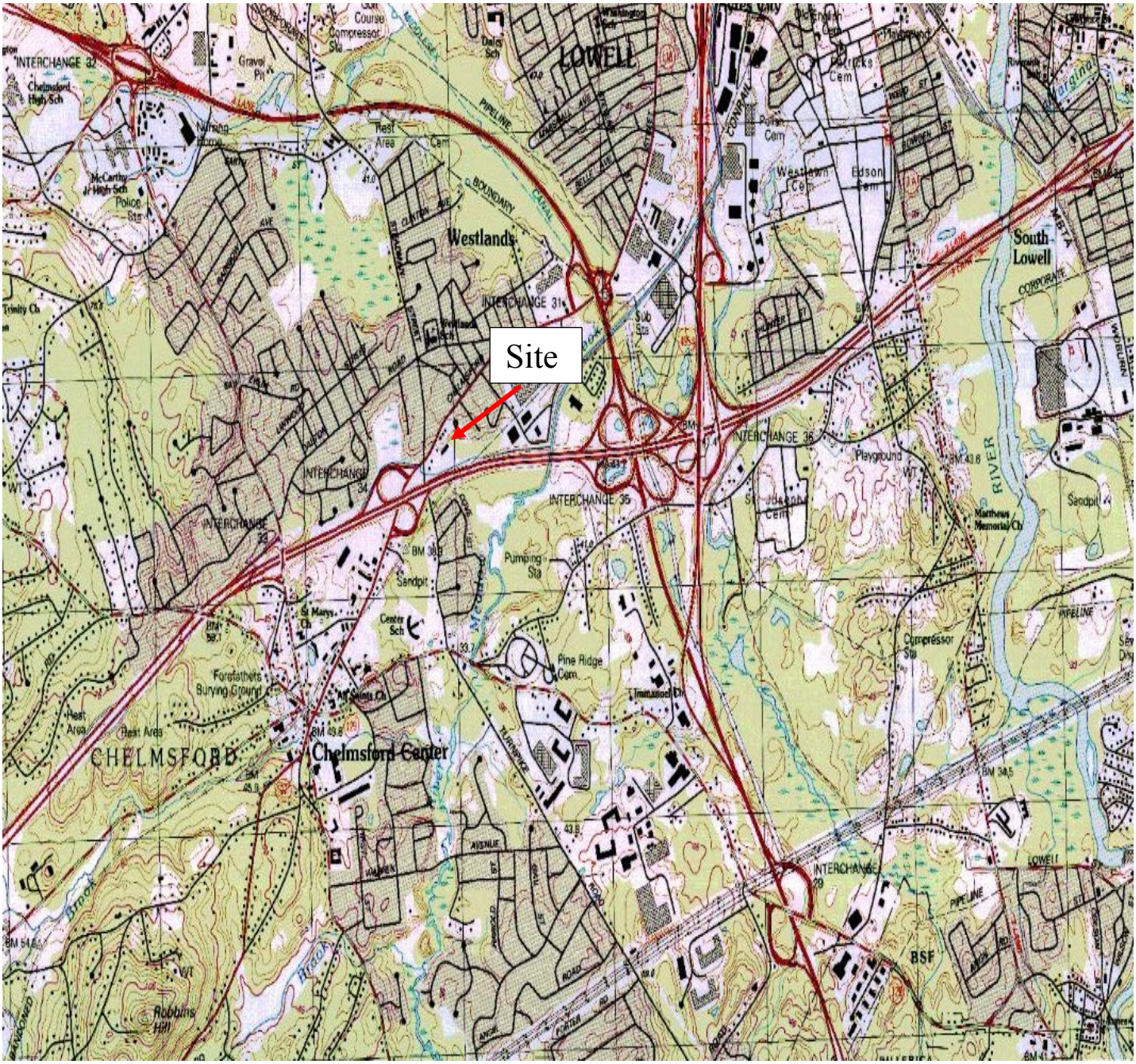
Kim Gravelle

Kim Gravelle, P.G.
Senior Project Manager

Encl: Figure 1 - Locus Plan
Figure 2 - Site Plan
Figure 3 - Water Treatment System Schematic
Appendix A - NOI Form
Appendix B - Laboratory Data
Appendix C - Water Treatment System
Appendix D - Supplemental Information

cc: Lisa Stone – Sovereign
Paul Belanger – Nouria Energy
Cathy Vakalopoulos - MassDEP

Figures



Source: MassGIS Oliver

Notes

1. Figure is not to scale.

N

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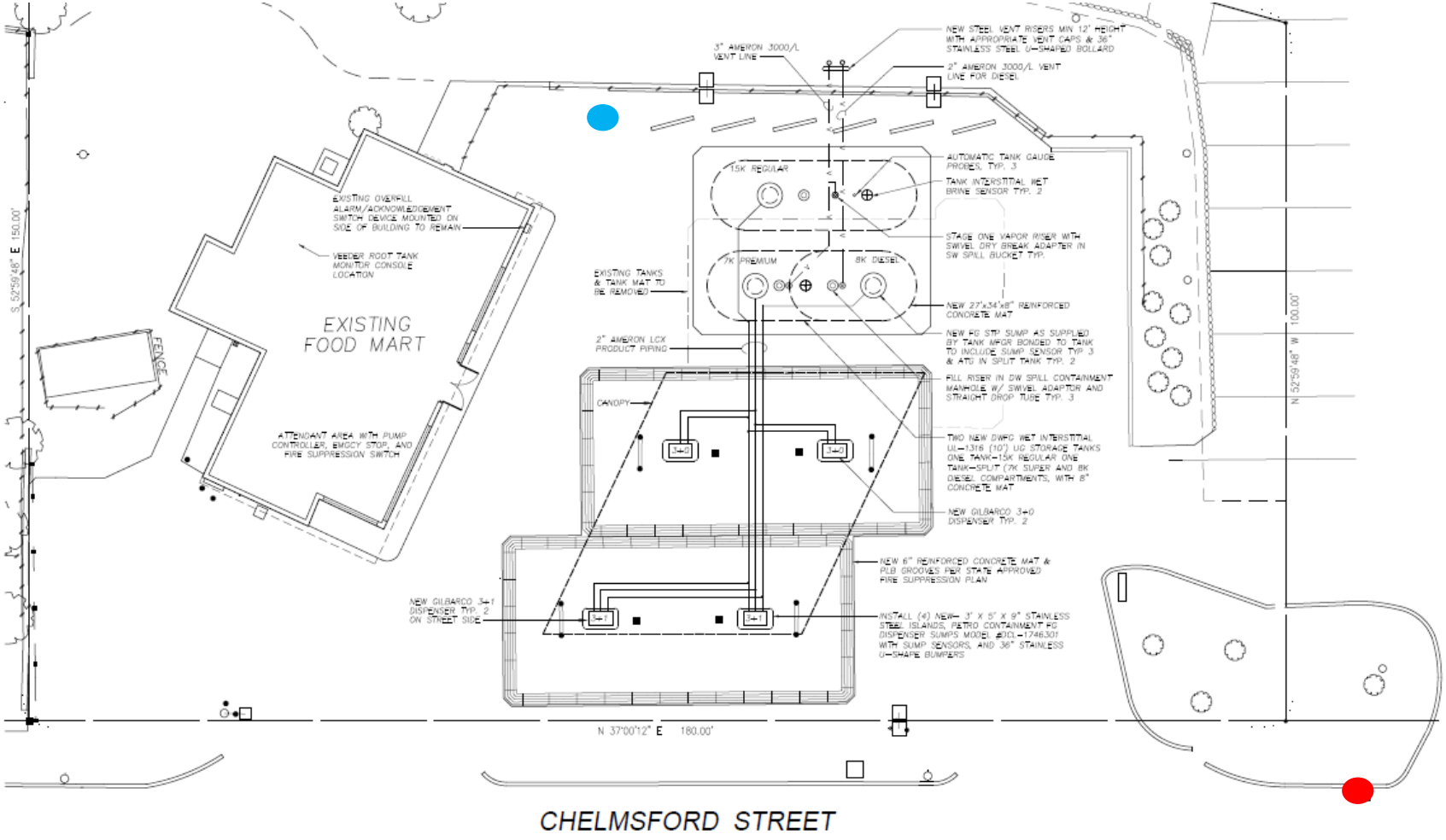
Figure 1 – Locus Plan
189 Chelmsford Street
Chelmsford, MA



Source: 189 Chelmsford Street Drawing Set

Notes

1. Figure is not to scale

Key

- Discharge location
- Water Treatment System location

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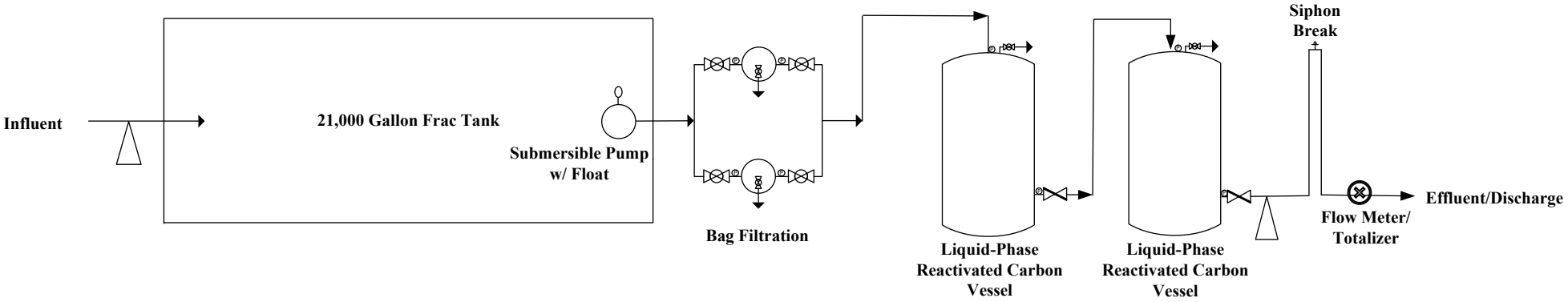
Figure 2 – Site plan
189 Chelmsford Street
Chelmsford, Massachusetts



Notes:

1.) Figure is not to scale
2.) System rated for 200 GPM

Key:
Piping/Hose
Sample Port
Ball Valve
Butterfly Valve
Pressure Gauge

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

DESIGNED BY: LRT **DRAWN BY:** JHJ

CHECKED BY: **DATE:**

Figure 3 - Water Treatment System Schematic

189 Chelmsford Street
Chelmsford, MA

PROJECT No. 2-1887

FIGURE No. 3

Appendix A

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:
189 Chelmsford Street</td><td colspan="3">Site address: 189 Chelmsford Street
Street:</td></tr>
<tr><td>City: Chemlsford</td><td>State: MA</td><td>Zip: 01824</td></tr>
<tr><td rowspan="4">2. Site owner
Nouria Energy Corporation

Owner is (check one): ☐ Federal ☐ State/Tribal ☐ Private ☐ Other; if so, specify:</td><td colspan="3">Contact Person: Paul Belanger</td></tr>
<tr><td colspan="2">Telephone: 508-762-3708</td><td>Email:</td></tr>
<tr><td colspan="3">Mailing address: 362 Clark Street
Street:</td></tr>
<tr><td>City: Worcester</td><td>State: MA</td><td>Zip: 01606</td></tr>
<tr><td rowspan="4">3. Site operator, if different than owner</td><td colspan="3">Contact Person:</td></tr>
<tr><td colspan="2">Telephone:</td><td>Email:</td></tr>
<tr><td colspan="3">Mailing address:
Street:</td></tr>
<tr><td>City:</td><td>State:</td><td>Zip:</td></tr>
<tr><td colspan="2">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="2">5. Other regulatory program(s) that apply to the site (check all that apply):
■ MA Chapter 21e; list RTN(s): 3-23270
☐ 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):
Goldern Cove - River Meadow Brook	MA82A-10	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: PWS Protected Areas: Zone II, MPA, Zone A

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. fecal coliform

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.	0.103
5. Indicate the requested dilution factor for the calculation of water quality-based effluent limitations (WQBELs) determined in accordance with the instructions in Appendix V for sites in Massachusetts and Appendix VI for sites in New Hampshire.	1.23

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: 7/24/2019

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: Ammonia, Chloride, Metals, TSS, TPH, Naphthalene, Total BTEX	
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): Goldern Cove	Outfall location(s): (Latitude, Longitude) (42.606473, -71.342890)
Discharges enter the receiving water(s) via (check any that apply): ☐ Direct discharge to the receiving water ■ Indirect discharge, if so, specify: Water will first enter a storm catch basin then discharge to Goldern Cove ☐ 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): 9/3/2019 to 10/3/19 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	SM4500	100	4000	4000	Report mg/L	---
Chloride		✔	1	SM4500CI	25000	1350000	1350000	Report µg/l	---
Total Residual Chlorine		✔	1	SM4500-C	10	20	20	0.2 mg/L	14
Total Suspended Solids		✔	1	SM2540-D	2000	4000	4000	30 mg/L	---
Antimony		✔	1	EPA 200.8	0.1	0.2	0.2	206 µg/L	
Arsenic		✔	1	EPA 200.8	0.1	11.7	11.7	104 µg/L	
Cadmium	✔		1	EPA 200.8	0.1	<0.1	<0.1	10.2 µg/L	
Chromium III		✔	1	EPA 200.8	0.1	1.8	1.8	323 µg/L	
Chromium VI	✔		1	SM3500-C	10	<10	<10	323 µg/L	
Copper	✔		1	EPA 200.8	1	<1	<1	242 µg/L	
Iron		✔	1	EPA 200.8	1	22800	22800	5,000 µg/L	1023
Lead	✔		1	EPA 200.8	0.1	<0.1	<0.1	160 µg/L	
Mercury	✔		1	EPA 245.1	0.2	<0.2	<0.2	0.739 µg/L	
Nickel	✔		1	EPA 200.8	1	<1	<1	1,450 µg/L	
Selenium	✔		1	EPA 200.8	5	<5	<5	235.8 µg/L	
Silver	✔		1	EPA 200.8	0.1	<0.1	<0.1	35.1 µg/L	
Zinc		✔	1	EPA 200.8	1	2	2	420 µg/L	
Cyanide	✔		1	SM4500-C	4000	<4000	<4000	178 mg/L	
B. Non-Halogenated VOCs									
Total BTEX		✔	5	EPA 624.1	100	873	174	100 µg/L	---
Benzene		✔	1	EPA 624.1	10	214	214	5.0 µg/L	---
1,4 Dioxane	✔		1	EPA 624.1	500	<500	<500	200 µg/L	---
Acetone	✔		1	EPA 624.1	15	<15	<15	7.97 mg/L	---
Phenol	✔		1	EPA 625.1	2	<2	<2	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	EPA 624.1	1	<1	<1	4.4 µg/L	
1,2 Dichlorobenzene	✔		1	EPA 624.1	1	<1	<1	600 µg/L	---
1,3 Dichlorobenzene	✔		1	EPA 624.1	1	<1	<1	320 µg/L	---
1,4 Dichlorobenzene	✔		1	EPA 624.1	1	<1	<1	5.0 µg/L	---
Total dichlorobenzene			1	EPA 624.1	1	<1	<1	763 µg/L in NH	---
1,1 Dichloroethane	✔		1	EPA 624.1	1	<1	<1	70 µg/L	---
1,2 Dichloroethane	✔		1	EPA 624.1	1	<1	<1	5.0 µg/L	---
1,1 Dichloroethylene	✔		1	EPA 624.1	1	<1	<1	3.2 µg/L	---
Ethylene Dibromide	✔		1	EPA 624.1	1	<1	<1	0.05 µg/L	---
Methylene Chloride	✔		1	EPA 624.1	5	<5	<5	4.6 µg/L	---
1,1,1 Trichloroethane	✔		1	EPA 624.1	1	<1	<1	200 µg/L	---
1,1,2 Trichloroethane	✔		1	EPA 624.1	1	<1	<1	5.0 µg/L	---
Trichloroethylene	✔		1	EPA 624.1	1	<1	<1	5.0 µg/L	---
Tetrachloroethylene	✔		1	EPA 624.1	1	<1	<1	5.0 µg/L	
cis-1,2 Dichloroethylene	✔		1	EPA 624.1	1	<1	<1	70 µg/L	---
Vinyl Chloride	✔		1	EPA 624.1	1	<1	<1	2.0 µg/L	---
D. Non-Halogenated SVOCs									
Total Phthalates	✔		1	EPA625.1	0.5	<0.5	<0.5	190 µg/L	
Diethylhexyl phthalate	✔		1	EPA625.1	6	<6	<6	101 µg/L	
Total Group I PAHs	✔		1	EPA 625.1	0.5	<0.5	<0.5	1.0 µg/L	---
Benzo(a)anthracene	✔		1	EPA 625.1	0.5	<0.5	<0.5	As Total PAHs	
Benzo(a)pyrene	✔		1	EPA 625.1	0.5	<0.5	<0.5		
Benzo(b)fluoranthene	✔		1	EPA 625.1	0.5	<0.5	<0.5		
Benzo(k)fluoranthene	✔		1	EPA 625.1	0.5	<0.5	<0.5		
Chrysene	✔		1	EPA 625.1	0.5	<0.5	<0.5		
Dibenzo(a,h)anthracene	✔		1	EPA 625.1	0.5	<0.5	<0.5		
Indeno(1,2,3-cd)pyrene	✔		1	EPA 625.1	0.5	<0.5	<0.5		

Parameter	Known or believed absent	Known or believed present	# of samples	Test method (#)	Detection limit (µg/l)	Influent		Effluent Limitations	
						Daily maximum (µg/l)	Daily average (µg/l)	TBEL	WQBEL
Total Group II PAHs	✔		1	EPA 625.1	100	61	61	100 µg/L	---
Naphthalene		✔	1	EPA 625.1	0.5	61	61	20 µg/L	---
E. Halogenated SVOCs									
Total PCBs	✔		1	EPA 625.1	1	<1	<1	0.000064 µg/L	---
Pentachlorophenol	✔		1	EPA 625.1	1	<1	<1	1.0 µg/L	---
F. Fuels Parameters									
Total Petroleum Hydrocarbons		✔	1	EPA 624.1	0.5	43.3	43.3	5.0 mg/L	---
Ethanol	✔		1	EPA-8100	10000	<10000	<10000	Report mg/L	---
Methyl-tert-Butyl Ether	✔		1	EPA624.1	0.5	<0.5	<0.5	70 µg/L	25
tert-Butyl Alcohol	✔		1	EPA 624.1	5.0	<5.0	<5.0	120 µg/L in MA 40 µg/L in NH	---
tert-Amyl Methyl Ether		✔	1	EPA 624.1	0.5	43.3	43.3	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:									
Total Hardness		✔	1		125	181000	181000		
pH		✔	1			6.5	6.5		
pH (receiving water)		✔	1			6.7	6.7		
Total Hardness (receiving		✔	1		125	136000	136000		

E. Treatment system information

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

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

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

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

Water from construction dewatering activities will be pumped to a weir tank for primary settling. From the weir tank water will be pumped through a triple bag filter skid with 5 micron bag filtration. From the bag filters water will be pumped through two 2000 lbs GAC media vessels plumed in series. Prior to discharge, treated water will be monitored with a flow meter/ totalizer.

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

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

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

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

☐ Chlorination ☐ De-chlorination

3. Provide the **design flow capacity** in gallons per minute (gpm) of the most limiting component. Indicate the most limiting component: GAC media vessels Is use of a flow meter feasible? (check one): ■ Yes ☐ No, if so, provide justification:	200
Provide the proposed maximum effluent flow in gpm.	200
Provide the average effluent flow in gpm.	150
If Activity Category IV applies, indicate the estimated total volume of water that will be discharged:	N/A

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

F. Chemical and additive information

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

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

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

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

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

G. Endangered Species Act eligibility determination

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

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

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

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

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

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

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

H. National Historic Preservation Act eligibility determination

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

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

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

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

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

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

I. Supplemental information

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

see attached

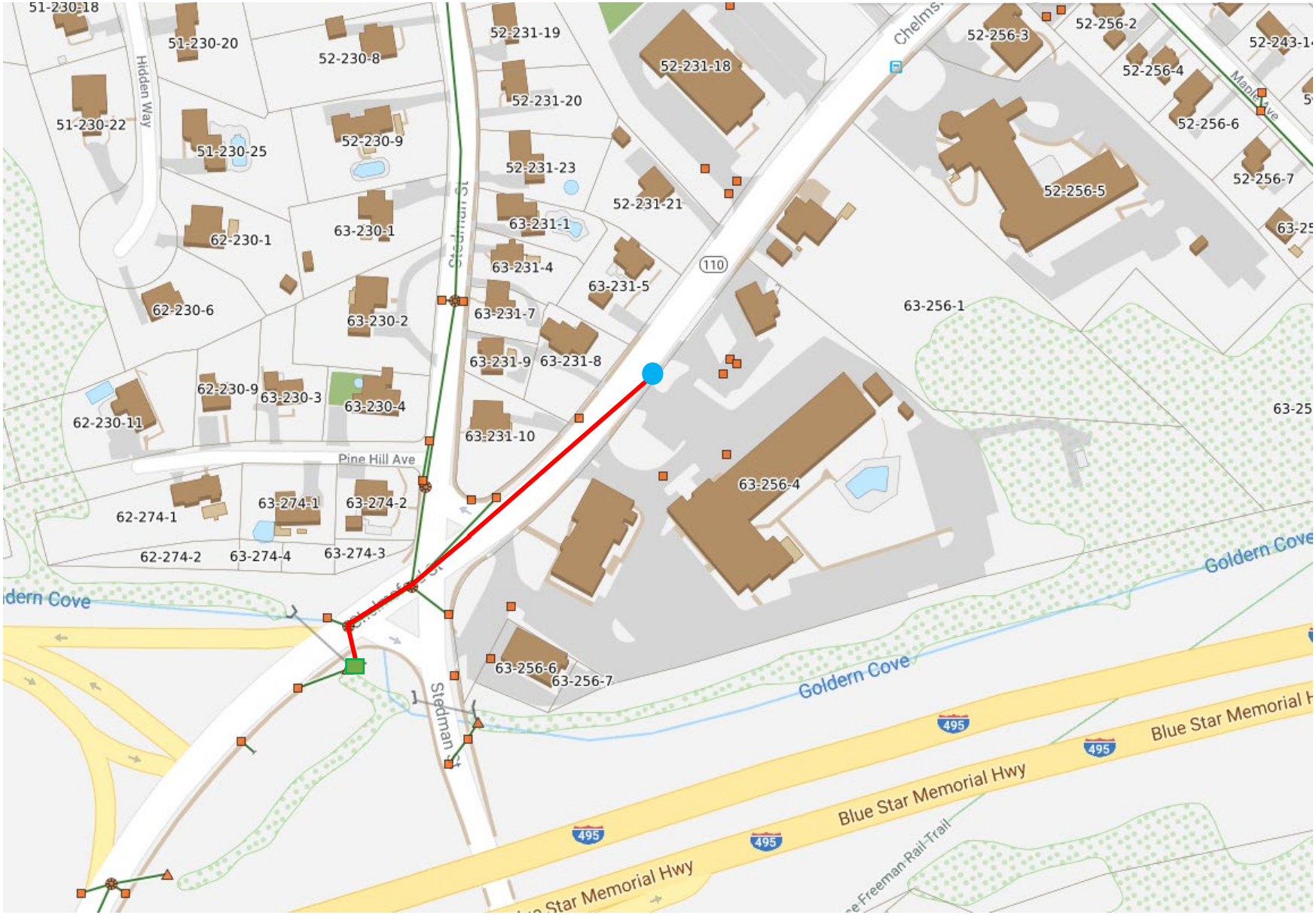
Has the operator attached data, including any laboratory case narrative and chain of custody used to support the application? (check one): ■ Yes ☐ No

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

J. Certification requirement

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

BMPP certification statement:	· A BMPP will be developed and maintained that meets the requirements of this permit. The BMPP will be implemented on-site prior to 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: Of Sovereign Consulting Inc. OBO Paul Belanger of Nova Energy Corporation	Date: 8/2/19
Print Name and Title: Lisa M. Stone, Senior Project Manager	

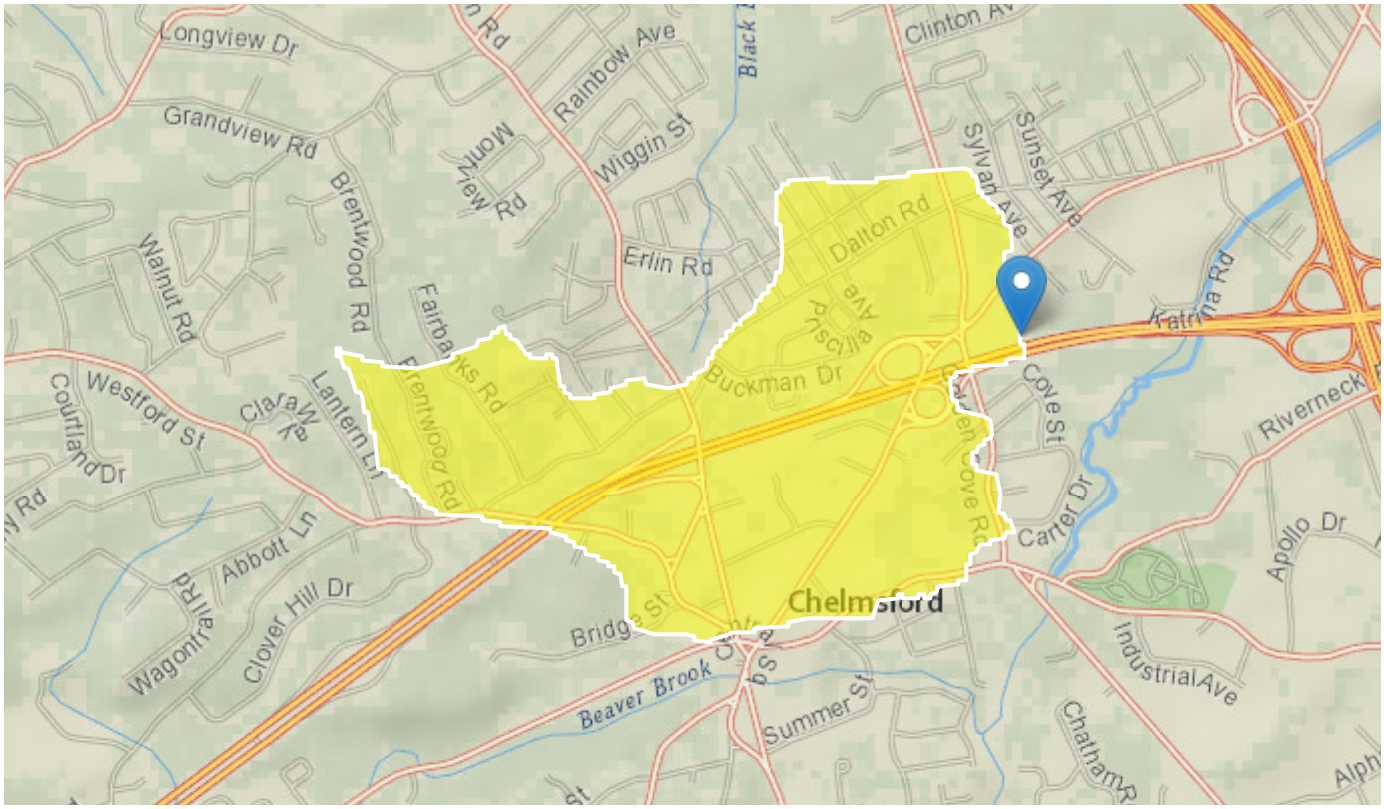


Discharge Path: 189 Chelmsford Street Chelmsford, MA

Key:
Discharge Path
Outfall
Catch basin

StreamStats Report

Region ID: MA
Workspace ID: MA20190724111606834000
Clicked Point (Latitude, Longitude): 42.60666, -71.34013
Time: 2019-07-24 07:16:25 -0400



Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	0.83	square miles
BSLDEM250	Mean basin slope computed from 1:250K DEM	1.446	percent
DRFTPERSTR	Area of stratified drift per unit of stream length	1.17	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	0.83	square miles	1.61	149
BSLDEM250	Mean Basin Slope from 250K DEM	1.446	percent	0.32	24.6
DRFTPERSTR	Stratified Drift per Stream Length	1.17	square mile per mile	0	1.29
MAREGION	Massachusetts Region	0	dimensionless	0	1

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

One or more of the parameters is outside the suggested range. Estimates were extrapolated with unknown errors

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

Statistic	Value	Unit
7 Day 2 Year Low Flow	0.19	ft^3/s
7 Day 10 Year Low Flow	0.103	ft^3/s

Low-Flow Statistics Citations

Ries, K.G., III,2000, Methods for estimating low-flow statistics for Massachusetts streams: U.S. Geological Survey Water Resources Investigations Report 00-4135, 81 p. (http://pubs.usgs.gov/wri/wri004135/)

USGS Product Names Disclaimer: Any use of trade, firm, or product names is for descriptive purposes only and does not imply endorsement by the U.S. Government.

Application Version: 4.3.8

DILUTION CALCULATIONS
189 Chelmsford Street
Chelmsford, MA

Calculate Dilution Factor (DF) for project based on 7 Day 10 Year (7Q10) Low Flow values

Calculate DF based on EPA formula $(Q_S + Q_D)/Q_D$, where Q_S is 7Q10 in million gallons per day (MGD) and Q_D is discharge flow in MGD

ASSUMPTIONS FOR 200 GPM SYSTEM

7Q10 is 0.103 cubic feet per second (cfs) - from StreamStats 4.0
A conversion of 7.48 is used to convert cubic feet to gallons
A design flow rate of 200 gallons per minute (gpm) is assumed

CALCULATIONS

7q10 Low Flow Value (Q_S)

$$Q_S = \frac{0.103}{\text{sec}} \times \frac{7.48 \text{ gallons}}{\text{ft}^3} \times \frac{86{,}400 \text{ sec}}{\text{day}} \times \frac{1 \text{ MG}}{1{,}000{,}000 \text{ gallons}} = 0.067 \text{ MGD}$$

Discharge Flow Rate (Q_D)

$$Q_D = \frac{200 \text{ gallons}}{\text{min}} \times \frac{1{,}440 \text{ min}}{\text{day}} \times \frac{1\text{MG}}{1{,}000{,}000 \text{ gallons}} = 0.288 \text{ MGD}$$

Dilution Factor (DF)

$$DF = \frac{Q_S + Q_D}{Q_D} = \frac{0.067 \text{ MGD} + 0.288 \text{ MDG}}{0.288 \text{ MGD}} = 1.23$$

Enter number values in green boxes below

Enter values in the units specified

↓

0.067	Q_R = Enter upstream flow in **MGD**
0.288	Q_P = Enter discharge flow in **MGD**
0	Downstream 7Q10

Enter a dilution factor, if other than zero

↓

1.23

Enter values in the units specified

↓

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

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

↓

6.6	pH in **Standard Units**
17.98	Temperature in **°C**
0.2	Ammonia in **mg/L**
132	Hardness in **mg/L** $CaCO_3$
0	Salinity in **ppt**
0.2	Antimony in **µg/L**
24.4	Arsenic in **µg/L**
0.1	Cadmium in **µg/L**
0.8	Chromium III in **µg/L**
0.1	Chromium VI in **µg/L**
0	Copper in **µg/L**
900	Iron in **µg/L**
0.9	Lead in **µg/L**
0	Mercury in **µg/L**
3	Nickel in **µg/L**
0	Selenium in **µg/L**
0.2	Silver in **µg/L**
9	Zinc in **µg/L**

Enter **influent** concentrations in the units specified

↓

0	TRC in **µg/L**
4	Ammonia in **mg/L**
0.2	Antimony in **µg/L**
1.7	Arsenic in **µg/L**
0	Cadmium in **µg/L**
1.8	Chromium III in **µg/L**
0	Chromium VI in **µg/L**
0	Copper in **µg/L**
22800	Iron in **µg/L**
0	Lead in **µg/L**
0	Mercury in **µg/L**
0	Nickel in **µg/L**
0	Selenium in **µg/L**
0	Silver in **µg/L**
2	Zinc in **µg/L**
0	Cyanide in **µg/L**
0	Phenol in **µg/L**
0	Carbon Tetrachloride in **µg/L**
0	Tetrachloroethylene in **µg/L**
0.1	Total Phthalates in **µg/L**
0	Diethylhexylphthalate in **µg/L**
0	Benzo(a)anthracene in **µg/L**
0	Benzo(a)pyrene in **µg/L**
0	Benzo(b)fluoranthene in **µg/L**
0	Benzo(k)fluoranthene in **µg/L**
0	Chrysene in **µg/L**
0	Dibenzo(a,h)anthracene in **µg/L**
0	Indeno(1,2,3-cd)pyrene in **µg/L**
43.3	Methyl-tert butyl ether in **µg/L**

Dilution Factor	1.2			
A. Inorganics	TBEL applies if bolded		WQBEL applies if bolded	
Ammonia	**Report**	mg/L	---	
Chloride	**Report**	µg/L	---	
Total Residual Chlorine	0.2	mg/L	**14**	µg/L
Total Suspended Solids	**30**	mg/L	---	
Antimony	**206**	µg/L	789	µg/L
Arsenic	**104**	µg/L	10	µg/L
Cadmium	**10.2**	µg/L	0.4040	µg/L
Chromium III	**323**	µg/L	165.2	µg/L
Chromium VI	**323**	µg/L	14.1	µg/L
Copper	**242**	µg/L	18.3	µg/L
Iron	5000	µg/L	**1023**	µg/L
Lead	**160**	µg/L	7.60	µg/L
Mercury	**0.739**	µg/L	1.12	µg/L
Nickel	**1450**	µg/L	100.9	µg/L
Selenium	**235.8**	µg/L	6.2	µg/L
Silver	**35.1**	µg/L	11.8	µg/L
Zinc	**420**	µg/L	231.5	µg/L
Cyanide	**178**	mg/L	6.4	µg/L
B. Non-Halogenated VOCs				
Total BTEX	**100**	µg/L	---	
Benzene	**5.0**	µg/L	---	
1,4 Dioxane	**200**	µg/L	---	
Acetone	**7970**	µg/L	---	
Phenol	**1,080**	µg/L	370	µg/L
C. Halogenated VOCs				
Carbon Tetrachloride	**4.4**	µg/L	2.0	µg/L
1,2 Dichlorobenzene	**600**	µg/L	---	
1,3 Dichlorobenzene	**320**	µg/L	---	
1,4 Dichlorobenzene	**5.0**	µg/L	---	
Total dichlorobenzene	**---**	µg/L	---	
1,1 Dichloroethane	**70**	µg/L	---	
1,2 Dichloroethane	**5.0**	µg/L	---	
1,1 Dichloroethylene	**3.2**	µg/L	---	
Ethylene Dibromide	**0.05**	µg/L	---	
Methylene Chloride	**4.6**	µg/L	---	
1,1,1 Trichloroethane	**200**	µg/L	---	
1,1,2 Trichloroethane	**5.0**	µg/L	---	
Trichloroethylene	**5.0**	µg/L	---	
Tetrachloroethylene	**5.0**	µg/L	4.1	µg/L
cis-1,2 Dichloroethylene	**70**	µg/L	---	

Vinyl Chloride	**2.0**	µg/L	---	
D. Non-Halogenated SVOCs				
Total Phthalates	**190**	µg/L	---	µg/L
Diethylhexyl phthalate	**101**	µg/L	2.7	µg/L
Total Group I Polycyclic Aromatic Hydrocarbons	**1.0**	µg/L	---	
Benzo(a)anthracene	**1.0**	µg/L	0.0047	µg/L
Benzo(a)pyrene	**1.0**	µg/L	0.0047	µg/L
Benzo(b)fluoranthene	**1.0**	µg/L	0.0047	µg/L
Benzo(k)fluoranthene	**1.0**	µg/L	0.0047	µg/L
Chrysene	**1.0**	µg/L	0.0047	µg/L
Dibenzo(a,h)anthracene	**1.0**	µg/L	0.0047	µg/L
Indeno(1,2,3-cd)pyrene	**1.0**	µg/L	0.0047	µg/L
Total Group II Polycyclic Aromatic Hydrocarbons	**100**	µg/L	---	
Naphthalene	**20**	µg/L	---	
E. Halogenated SVOCs				
Total Polychlorinated Biphenyls	**0.000064**	µg/L	---	
Pentachlorophenol	**1.0**	µg/L	---	
F. Fuels Parameters				
Total Petroleum Hydrocarbons	**5.0**	mg/L	---	
Ethanol	**Report**	mg/L	---	
Methyl-tert-Butyl Ether	70	µg/L	**25**	µg/L
tert-Butyl Alcohol	**120**	µg/L	---	
tert-Amyl Methyl Ether	**90**	µg/L	---	

From: Vakalopoulos, Catherine (DEP)
To: Jake Jennings
Subject: RE: NPDES RGP Application - 7Q10 and Dilution Factor Confirmation - 189 Chelmsford Street, Chelmsford, MA
Date: Wednesday, July 24, 2019 11:59:21 AM
Attachments: image001.jpg

Hi Jake,
I can confirm that your dilution factor calculation of 1.23 is correct for the proposed discharge from 189 Chelmsford St., Chelmsford with a design flow of 200 gpm and a 7Q10 in the unnamed receiving water of 0.103 cfs.

To assist you with the NOI, the unnamed stream flows to River Meadow Brook in the Concord Watershed. River Meadow Brook is identified as MA82A-10 and is classified as Class B. There are no approved TMDLs for this brook and this is not an Outstanding Resource Water. To see the causes of impairments, go to: https://www.mass.gov/files/documents/2016/08/sa/14list2_0.pdf and search for "MA82A-10".

In addition to submitting the EPA NOI for the RGP, if this is not a *current* MCP site, you will have to apply to MassDEP and submit a fee (unless fee exempt, e.g. a municipality). Instructions are located here: https://www.mass.gov/how-to/wm-15-npdes-general-permit-notice-of-intent.

Please let me know if you have any further questions.

Cathy

Cathy Vakalopoulos, Massachusetts Department of Environmental Protection
1 Winter St., Boston, MA 02108, 617-348-4026
Please consider the environment before printing this e-mail

From: Jake Jennings [mailto:JJennings@lrt-llc.net]
Sent: Wednesday, July 24, 2019 9:31 AM
To: Vakalopoulos, Catherine (DEP)
Subject: NPDES RGP Application - 7Q10 and Dilution Factor Confirmation - 189 Chelmsford Street, Chelmsford, MA

Hi Cathy,

As required in appendix V, please see attached StreamStats Report along with our dilution calcs for your review and conformation.

The project location:

189 Chelmsford Street
Chelmsford, MA

The 7 Day 10 Year Low Flow value from the StreamStats report is 0.103 cfs and the calculated dilution factor is 1.23.

Can you please confirm that these values are appropriate.

Thank you,

Jake Jennings

Lockwood Remediation Technologies, LLC
89 Crawford Street
Leominster, MA 01453
O: 774.450.7177
F: 888.835.0617
M: 508.930.9812
jjennings@lrt-llc.net

Appendix B

Laboratory Data

Influent Sample

New England Testing Laboratory, Inc.
(401) 353-3420

REPORT OF ANALYTICAL RESULTS

NETLAB Work Order Number: 9G10078
Client Project: NU006.00R - 189 Chelmsford St, Chelmsford, MA

Report Date: 19-July-2019

Prepared for:

Lisa Stone
Sovereign Consulting Inc.
16 Chestnut Street #520
Foxborough, MA 02035

Richard Warila, Laboratory Director
New England Testing Laboratory, Inc.
59 Greenhill Street
West Warwick, RI 02893
rich.warila@newenglandtesting.com

Samples Submitted :

The samples listed below were submitted to New England Testing Laboratory on 07/10/19. The group of samples appearing in this report was assigned an internal identification number (case number) for laboratory information management purposes. The client's designations for the individual samples, along with our case numbers, are used to identify the samples in this report. This report of analytical results pertains only to the sample(s) provided to us by the client which are indicated on the custody record. The case number for this sample submission is 9G10078. Custody records are included in this report.

Lab ID	Sample	Matrix	Date Sampled	Date Received
9G10078-01	MW-1	Water	07/10/2019	07/10/2019

Request for Analysis

At the client's request, the analyses presented in the following table were performed on the samples submitted.

MW-1 (Lab Number: 9G10078-01)

Analysis	Method
Acid Base/Neutral Extractables	EPA 625.1
Ammonia	SM4500-NH3-D
Antimony	EPA 200.8
Arsenic	EPA 200.8
Cadmium	EPA 200.8
Calcium	SM3120-B
Chloride	SM4500CI-B
Chromium	EPA 200.8
Copper	EPA 200.8
Cyanide	SM4500-CN-E
Hexavalent Chromium	SM3500-Cr-B
Iron	EPA 200.8
Lead	EPA 200.8
Magnesium	SM3120-B
Mercury	EPA 245.1
Methanol and Ethanol	EPA-8100-mod
Nickel	EPA 200.8
Oil & Grease, SGT	EPA 1664A
pH	SM4500-H-B
Selenium	EPA 200.8
Silver	EPA 200.8
Total Residual Chlorine	SM4500-CI-G
Total Suspended Solids	SM2540-D
Trivalent Chromium	Calculation
Volatile Organic Compounds	EPA 524.2
Volatile Organic Compounds	EPA 624.1
Zinc	EPA 200.8

Method References

40 CFR Part 136, Guidelines Establishing Test Procedures for the Analysis of Pollutants Under the Clean Water Act, Office of Federal Register National Archives and Records Administration

Method 1664, Revision A: N-Hexane Extractable Material (HEM; Oil and Grease) and Silica Gel Treated N-Hexane Extractable Material (SGTHEM; Non-polar, USEPA, 1999

Methods for the Determination of Metals in Environmental Samples EPA-600/R-94/111, USEPA, 1994

Methods for the Determination of Organic Compounds in Finished Drinking Water and Raw Source Water, USEPA/EMSL, 1985

Standard Methods for the Examination of Water and Wastewater, 20th Edition, APHA/ AWWA-WPCF, 1998

Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW846, USEPA

Case Narrative

Sample Receipt

The samples were all appropriately cooled and preserved upon receipt. The samples were received in the appropriate containers. The chain of custody was adequately completed and corresponded to the samples submitted.

Metals

All analyses were performed according to NETLAB's documented Standard Operating Procedures, within all required holding times, and with appropriate quality control measures. All QC was within laboratory established acceptance criteria. The samples were received, processed, and reported with no anomalies.

PCBs

All samples were extracted and analyzed within method specified holding times and according to NETLAB's documented standard operating procedures. The results for the associated calibration, method blank and laboratory control sample (LCS) were within method specified quality control criteria.

Semi-volatile Compounds

All samples were extracted and analyzed within method specified holding times and according to NETLAB's documented standard operating procedures. The results for the associated calibration, method blank and laboratory control sample (LCS) were within method specified quality control criteria.

Volatile Organic Compounds

All samples were analyzed within method specified holding times and according to NETLAB's documented standard operating procedures. The results for the associated calibration, method blank and laboratory control sample (LCS) were within method specified quality control requirements and allowances.

524: 'MW-1' was reported with one surrogate outside the method-recommended QC limits due to matrix interference.

Wet Chemistry

All samples were analyzed within method specified holding times and according to NETLAB's documented standard operating procedures.

Results: Calculation

Sample: MW-1

Lab Number: 9G10078-01 (Water)

Analyte	Result	Qual	Reporting Limit	Units	Date Prepared	Date Analyzed
Trivalent Chromium	**0.00177**		0.000100	mg/L	07/11/19 9:49	07/16/19 11:48

Results: General Chemistry

Sample: MW-1

Lab Number: 9G10078-01 (Water)

Analyte	Result	Qual	Reporting Limit	Units	Date Prepared	Date Analyzed
Ammonia	**4.0**		0.1	mg/L	07/17/19	07/17/19
Chloride	**1350**		25	mg/L	07/15/19	07/15/19
Cyanide	ND		0.010	mg/L	07/16/19	07/17/19
Hexavalent chromium	ND		0.01	mg/L	07/10/19 18:48	07/10/19 18:48
pH	**6.5**		0.1	SU	07/10/19 17:40	07/10/19 17:40
Oil & Grease SGT	ND		2	mg/L	07/18/19	07/18/19
Total Residual Chlorine	**0.02**		0.01	mg/L	07/10/19 17:15	07/10/19 17:15
Total Suspended Solids	**4**		2	mg/L	07/16/19	07/16/19

Results: Total Metals

Sample: MW-1

Lab Number: 9G10078-01 (Water)

Analyte	Result	Qual	Reporting Limit	Units	Date Prepared	Date Analyzed
Total Hardness	**181**		0.125	mg/L	07/11/19	07/11/19
Antimony	**0.0002**		0.0001	mg/L	07/11/19	07/16/19
Arsenic	**0.0117**		0.0001	mg/L	07/11/19	07/16/19
Cadmium	ND		0.0001	mg/L	07/11/19	07/16/19
Calcium	**64.6**		0.05	mg/L	07/11/19	07/11/19
Chromium	**0.0018**		0.0001	mg/L	07/11/19	07/16/19
Copper	ND		0.001	mg/l	07/11/19	07/16/19
Iron	**22.8**		0.001	mg/l	07/11/19	07/16/19
Magnesium	**4.84**		0.05	mg/L	07/11/19	07/11/19
Mercury	ND		0.0002	mg/L	07/11/19	07/11/19
Nickel	ND		0.001	mg/l	07/11/19	07/16/19
Selenium	ND		0.005	mg/L	07/11/19	07/16/19
Silver	ND		0.0001	mg/L	07/11/19	07/15/19
Zinc	**0.002**		0.001	mg/l	07/11/19	07/16/19
Lead	ND		0.0001	mg/L	07/11/19	07/16/19

Results: Volatile Organic Compounds

Sample: MW-1

Lab Number: 9G10078-01 (Water)

Analyte	Result	Qual	Reporting Limit	Units	Date Prepared	Date Analyzed
tert-Amyl methyl ether	ND		0.5	ug/l	07/12/19	07/12/19
tert-Butyl alcohol	ND		5.0	ug/l	07/12/19	07/12/19
Methyl t-butyl ether (MTBE)	**43.3**		0.5	ug/l	07/12/19	07/12/19

Surrogate(s)	Recovery%	Limits		
4-Bromofluorobenzene	*113%*	*70-130*	07/12/19	07/12/19
1,2-Dichlorobenzene-d4	*133%*	*70-130*	07/12/19	07/12/19
Benzene	**214**	10	ug/l	07/12/19	07/12/19
Carbon tetrachloride	ND	1	ug/l	07/12/19	07/12/19
1,2-Dichlorobenzene	ND	1	ug/l	07/12/19	07/12/19
1,3-Dichlorobenzene	ND	1	ug/l	07/12/19	07/12/19
1,4-Dichlorobenzene	ND	1	ug/l	07/12/19	07/12/19
1,1-Dichloroethane	ND	1	ug/l	07/12/19	07/12/19
1,2-Dichloroethane	ND	1	ug/l	07/12/19	07/12/19
1,1-Dichloroethene	ND	1	ug/l	07/12/19	07/12/19
Methylene chloride	ND	5	ug/l	07/12/19	07/12/19
Tetrachloroethene	ND	1	ug/l	07/12/19	07/12/19
Toluene	**8**	1	ug/l	07/12/19	07/12/19
1,1,2-Trichloroethane	ND	1	ug/l	07/12/19	07/12/19
1,1,1-Trichloroethane	ND	1	ug/l	07/12/19	07/12/19
Trichloroethene	ND	1	ug/l	07/12/19	07/12/19
Vinyl chloride	ND	1	ug/l	07/12/19	07/12/19
cis-1,2-Dichloroethene	ND	1	ug/l	07/12/19	07/12/19
Acetone	ND	15	ug/l	07/12/19	07/12/19
1,2-Dibromoethane (EDB)	ND	1	ug/l	07/12/19	07/12/19
1,4-Dioxane	ND	500	ug/l	07/12/19	07/12/19
o-Xylene	**25**	1	ug/l	07/12/19	07/12/19
m&p-Xylene	**396**	2	ug/l	07/12/19	07/12/19
Ethylbenzene	**230**	10	ug/l	07/12/19	07/12/19

Surrogate(s)	Recovery%	Limits		
4-Bromofluorobenzene	*103%*	*70-130*	07/12/19	07/12/19
1,2-Dichloroethane-d4	*103%*	*70-130*	07/12/19	07/12/19
Toluene-d8	*107%*	*70-130*	07/12/19	07/12/19

Results: Semivolatile organic compounds

Sample: MW-1

Lab Number: 9G10078-01 (Water)

Analyte	Result	Qual	Reporting Limit	Units	Date Prepared	Date Analyzed
Ethanol	ND		10	mg/L	07/16/19	07/16/19

Results: Base/Neutral & Acid Extractables

Sample: MW-1

Lab Number: 9G10078-01 (Water)

Analyte	Result	Qual	Reporting Limit	Units	Date Prepared	Date Analyzed
Phenol	ND		2	ug/l	07/16/19	07/17/19
Acenaphthene	ND		0.5	ug/l	07/16/19	07/17/19
Acenaphthylene	ND		0.5	ug/l	07/16/19	07/17/19
Anthracene	ND		0.5	ug/l	07/16/19	07/17/19
Benzo(a)anthracene	ND		0.5	ug/l	07/16/19	07/17/19
Benzo(a)pyrene	ND		0.5	ug/l	07/16/19	07/17/19
Benzo(b)fluoranthene	ND		0.5	ug/l	07/16/19	07/17/19
Benzo(g,h,i)perylene	ND		0.5	ug/l	07/16/19	07/17/19
Benzo(k)fluoranthene	ND		0.5	ug/l	07/16/19	07/17/19
Bis(2-ethylhexyl)phthalate	ND		6	ug/l	07/16/19	07/17/19
Butyl benzyl phthalate	ND		2	ug/l	07/16/19	07/17/19
Chrysene	ND		0.5	ug/l	07/16/19	07/17/19
Di(n)octyl phthalate	ND		3	ug/l	07/16/19	07/17/19
Dibenz(a,h)anthracene	ND		0.5	ug/l	07/16/19	07/17/19
Diethyl phthalate	ND		2	ug/l	07/16/19	07/17/19
Dimethyl phthalate	ND		2	ug/l	07/16/19	07/17/19
Di-n-butylphthalate	ND		3	ug/l	07/16/19	07/17/19
Fluoranthene	ND		0.5	ug/l	07/16/19	07/17/19
Indeno(1,2,3-cd)pyrene	ND		0.5	ug/l	07/16/19	07/17/19
Naphthalene	**61**		0.5	ug/l	07/16/19	07/17/19
Pentachlorophenol	ND		1	ug/l	07/16/19	07/17/19
Phenanthrene	ND		0.5	ug/l	07/16/19	07/17/19
Pyrene	ND		0.5	ug/l	07/16/19	07/17/19

Surrogate(s)	Recovery%	Limits		
Nitrobenzene-d5	*87.3%*	*30-118*	07/16/19	07/17/19
p-Terphenyl-d14	*82.5%*	*38-130*	07/16/19	07/17/19
2-Fluorobiphenyl	*76.0%*	*30-119*	07/16/19	07/17/19
Phenol-d6	*13.6%*	*10-115*	07/16/19	07/17/19
2,4,6-Tribromophenol	*73.1%*	*15-130*	07/16/19	07/17/19
2-Fluorophenol	*24.2%*	*10-115*	07/16/19	07/17/19

Quality Control

General Chemistry

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: B9G0502 - Hexavalent Chrome										
Blank (B9G0502-BLK1)					Prepared & Analyzed: 07/10/19					
Hexavalent chromium	ND		0.01	mg/L						
Blank (B9G0502-BLK2)					Prepared & Analyzed: 07/10/19					
Hexavalent chromium	ND		0.01	mg/L						
LCS (B9G0502-BS1)					Prepared & Analyzed: 07/10/19					
Hexavalent chromium	0.50		0.01	mg/L	0.500		101	90-110		
LCS (B9G0502-BS2)					Prepared & Analyzed: 07/10/19					
Hexavalent chromium	0.10		0.01	mg/L	0.100		95.0	90-110		
LCS (B9G0502-BS3)					Prepared & Analyzed: 07/10/19					
Hexavalent chromium	0.50		0.01	mg/L	0.500		100	90-110		
Duplicate (B9G0502-DUP1)		**Source: 9G10078-01**			Prepared & Analyzed: 07/10/19					
Hexavalent chromium	ND		0.01	mg/L		ND				20
Matrix Spike (B9G0502-MS1)		**Source: 9G10078-01**			Prepared & Analyzed: 07/10/19					
Hexavalent chromium	ND		0.01	mg/L	0.500	ND		80-120		
Batch: B9G0645 - Chloride										
Blank (B9G0645-BLK1)					Prepared & Analyzed: 07/15/19					
Chloride	ND		1	mg/L						
LCS (B9G0645-BS1)					Prepared & Analyzed: 07/15/19					
Chloride	63		1	mg/L	60.6		104	90-110		

Quality Control
(Continued)

General Chemistry (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: B9G0645 - Chloride (Continued)										
Duplicate (B9G0645-DUP1)		**Source: 9G10004-01**			Prepared & Analyzed: 07/15/19					
Chloride	549		10	mg/L		549			0.00	20
Matrix Spike (B9G0645-MS1)		**Source: 9G10004-01**			Prepared & Analyzed: 07/15/19					
Chloride	666		10	mg/L	606	549	19.4	80-120		
Batch: B9G0675 - Residual chlorine										
Blank (B9G0675-BLK1)					Prepared & Analyzed: 07/10/19					
Total Residual Chlorine	ND		0.01	mg/L						
Blank (B9G0675-BLK2)					Prepared & Analyzed: 07/10/19					
Total Residual Chlorine	ND		0.01	mg/L						
LCS (B9G0675-BS1)					Prepared & Analyzed: 07/10/19					
Total Residual Chlorine	0.48		0.01	mg/L	0.500		96.4	90-110		
LCS (B9G0675-BS2)					Prepared & Analyzed: 07/10/19					
Total Residual Chlorine	0.52		0.01	mg/L	0.500		103	90-110		
Duplicate (B9G0675-DUP1)		**Source: 9G10078-01**			Prepared & Analyzed: 07/10/19					
Total Residual Chlorine	0.03		0.01	mg/L		0.02			12.2	20
Matrix Spike (B9G0675-MS1)		**Source: 9G10078-01**			Prepared & Analyzed: 07/10/19					
Total Residual Chlorine	0.03		0.01	mg/L	0.500	0.02	2.20	80-120		
Batch: B9G0678 - pH										
LCS (B9G0678-BS1)					Prepared & Analyzed: 07/10/19					
pH	7.0		0.1	SU	7.00		100	90-110		

Quality Control
(Continued)

General Chemistry (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: B9G0678 - pH (Continued)										
LCS (B9G0678-BS2)					Prepared & Analyzed: 07/10/19					
pH	7.1		0.1	SU	7.00		101	90-110		
Duplicate (B9G0678-DUP1)		**Source: 9G10012-01**			Prepared & Analyzed: 07/10/19					
pH	7.4		0.1	SU		7.5			0.402	20
Batch: B9G0728 - Cyanide										
Blank (B9G0728-BLK1)					Prepared: 07/16/19 Analyzed: 07/17/19					
Cyanide	ND		0.010	mg/L						
Blank (B9G0728-BLK2)					Prepared: 07/16/19 Analyzed: 07/17/19					
Cyanide	ND		0.010	mg/L						
LCS (B9G0728-BS1)					Prepared: 07/16/19 Analyzed: 07/17/19					
Cyanide	0.091		0.010	mg/L	0.100		91.0	90-110		
LCS (B9G0728-BS2)					Prepared: 07/16/19 Analyzed: 07/17/19					
Cyanide	0.090		0.010	mg/L	0.100		90.0	90-110		
LCS (B9G0728-BS3)					Prepared: 07/16/19 Analyzed: 07/17/19					
Cyanide	0.091		0.010	mg/L	0.100		91.0	90-110		
Duplicate (B9G0728-DUP1)		**Source: 9G10006-02**			Prepared: 07/16/19 Analyzed: 07/17/19					
Cyanide	ND		0.010	mg/L		ND				200
Matrix Spike (B9G0728-MS1)		**Source: 9G10006-02**			Prepared: 07/16/19 Analyzed: 07/17/19					
Cyanide	0.090		0.010	mg/L	0.100	ND	90.0	80-120		

Quality Control
(Continued)

General Chemistry (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: B9G0731 - TSS										
Blank (B9G0731-BLK1)					Prepared & Analyzed: 07/16/19					
Total Suspended Solids	ND		2	mg/L						
LCS (B9G0731-BS1)					Prepared & Analyzed: 07/16/19					
Total Suspended Solids	958		10	mg/L	1000		95.8	90-110		
Duplicate (B9G0731-DUP1)		**Source: 9G10038-01**			Prepared & Analyzed: 07/16/19					
Total Suspended Solids	336		10	mg/L		408			19.4	20
Batch: B9G0762 - Ammonia										
Blank (B9G0762-BLK1)					Prepared & Analyzed: 07/17/19					
Ammonia	ND		0.1	mg/L						
Blank (B9G0762-BLK2)					Prepared & Analyzed: 07/17/19					
Ammonia	ND		0.1	mg/L						
LCS (B9G0762-BS1)					Prepared & Analyzed: 07/17/19					
Ammonia	0.9		0.1	mg/L	1.00		91.8	90-110		
LCS (B9G0762-BS2)					Prepared & Analyzed: 07/17/19					
Ammonia	1.1		0.1	mg/L	1.00		107	90-110		
Duplicate (B9G0762-DUP1)		**Source: 9G10081-01**			Prepared & Analyzed: 07/17/19					
Ammonia	0.2		0.1	mg/L		0.2			4.66	20
Matrix Spike (B9G0762-MS1)		**Source: 9G10081-01**			Prepared & Analyzed: 07/17/19					
Ammonia	1.2		0.1	mg/L	1.00	0.2	106	80-120		

Quality Control
(Continued)

General Chemistry (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: B9G0785 - Oil & Grease										
Blank (B9G0785-BLK1)					Prepared & Analyzed: 07/18/19					
Oil & Grease SGT	ND		2	mg/L						
LCS (B9G0785-BS1)					Prepared & Analyzed: 07/18/19					
Oil & Grease SGT	16		2	mg/L	20.0		80.5	64-132		

Quality Control
(Continued)

Total Metals

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: B9G0509 - Hot plate acid digestion waters										
Blank (B9G0509-BLK1)					Prepared: 07/11/19 Analyzed: 07/16/19					
Nickel	ND		0.001	mg/l						
Zinc	ND		0.001	mg/l						
Cadmium	ND		0.0001	mg/L						
Copper	ND		0.001	mg/l						
Magnesium	ND		0.05	mg/L						
Calcium	ND		0.05	mg/L						
Silver	ND		0.0001	mg/L						
Lead	ND		0.0001	mg/L						
LCS (B9G0509-BS1)					Prepared & Analyzed: 07/11/19					
Calcium	9.84		0.05	mg/L	10.0		98.4	85-115		
Magnesium	9.86		0.05	mg/L	10.0		98.6	85-115		
LCS (B9G0509-BS2)					Prepared: 07/11/19 Analyzed: 07/16/19					
Zinc	0.188		0.001	mg/l	0.200		94.1	85-115		
Cadmium	0.0189		0.0001	mg/L	0.0200		94.6	85-115		
Arsenic	0.0199		0.0001	mg/L	0.0200		99.4	85-115		
Selenium	0.019		0.005	mg/L	0.0200		94.3	85-115		
Chromium	0.0194		0.0001	mg/L	0.0200		97.0	85-115		
Copper	0.175		0.001	mg/l	0.200		87.3	85-115		
Iron	0.184		0.001	mg/l	0.200		92.1	85-115		
Nickel	0.177		0.001	mg/l	0.200		88.5	85-115		
Antimony	0.0227		0.0001	mg/L	0.0200		113	85-115		
Silver	0.0224		0.0001	mg/L	0.0200		112	85-115		
Lead	0.0204		0.0001	mg/L	0.0200		102	85-115		

Quality Control
(Continued)

Volatile Organic Compounds

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: B9G0547 - Purge-Trap										
Blank (B9G0547-BLK1)					Prepared & Analyzed: 07/12/19					
Benzene	ND		1	ug/l						
Carbon tetrachloride	ND		1	ug/l						
1,2-Dichlorobenzene	ND		1	ug/l						
1,3-Dichlorobenzene	ND		1	ug/l						
1,4-Dichlorobenzene	ND		1	ug/l						
1,1-Dichloroethane	ND		1	ug/l						
1,2-Dichloroethane	ND		1	ug/l						
1,1-Dichloroethene	ND		1	ug/l						
Methylene chloride	ND		5	ug/l						
Tetrachloroethene	ND		1	ug/l						
Toluene	ND		1	ug/l						
1,1,2-Trichloroethane	ND		1	ug/l						
1,1,1-Trichloroethane	ND		1	ug/l						
Trichloroethene	ND		1	ug/l						
Vinyl chloride	ND		1	ug/l						
cis-1,2-Dichloroethene	ND		1	ug/l						
Acetone	ND		15	ug/l						
1,2-Dibromoethane (EDB)	ND		1	ug/l						
1,4-Dioxane	ND		500	ug/l						
o-Xylene	ND		1	ug/l						
m&p-Xylene	ND		2	ug/l						
Ethylbenzene	ND		1	ug/l						
Surrogate: 4-Bromofluorobenzene			*47.2*	ug/l	*50.0*		*94.4*	*70-130*		
Surrogate: 1,2-Dichloroethane-d4			*51.8*	ug/l	*50.0*		*104*	*70-130*		
Surrogate: Toluene-d8			*49.1*	ug/l	*50.0*		*98.1*	*70-130*		
LCS (B9G0547-BS1)					Prepared & Analyzed: 07/12/19					
Benzene	22			ug/l	20.0		109	65-135		
Carbon tetrachloride	24			ug/l	20.0		119	70-130		
1,2-Dichlorobenzene	24			ug/l	20.0		121	65-135		
1,3-Dichlorobenzene	23			ug/l	20.0		116	70-130		
1,4-Dichlorobenzene	23			ug/l	20.0		115	65-135		
1,1-Dichloroethane	21			ug/l	20.0		107	70-130		
1,2-Dichloroethane	23			ug/l	20.0		113	70-130		
1,1-Dichloroethene	20			ug/l	20.0		98.4	50-150		
Methylene chloride	23			ug/l	20.0		117	60-140		
Tetrachloroethene	23			ug/l	20.0		113	70-130		
Toluene	22			ug/l	20.0		110	70-130		
1,1,2-Trichloroethane	23			ug/l	20.0		114	70-130		
1,1,1-Trichloroethane	23			ug/l	20.0		116	70-130		
Trichloroethene	21			ug/l	20.0		105	65-135		
Vinyl chloride	21			ug/l	20.0		103	5-195		
cis-1,2-Dichloroethene	22			ug/l	20.0		109	70-130		
Acetone	22			ug/l	20.0		109	34-193		
1,2-Dibromoethane (EDB)	23			ug/l	20.0		113	70-130		
1,4-Dioxane	0			ug/l	20.0			70-130		
o-Xylene	23			ug/l	20.0		113	70-130		
m&p-Xylene	46			ug/l	40.0		114	70-130		
Ethylbenzene	23			ug/l	20.0		115	60-140		
Surrogate: 4-Bromofluorobenzene			*51.0*	ug/l	*50.0*		*102*	*70-130*		
Surrogate: 1,2-Dichloroethane-d4			*51.9*	ug/l	*50.0*		*104*	*70-130*		
Surrogate: Toluene-d8			*50.8*	ug/l	*50.0*		*102*	*70-130*		

Quality Control
(Continued)

Semivolatile organic compounds

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: B9G0717 - EPA 3580A										
Blank (B9G0717-BLK1)					Prepared & Analyzed: 07/16/19					
Ethanol	ND		10	mg/L						

Quality Control
(Continued)

Base/Neutral & Acid Extractables

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: B9G0696 - Sep-Funnel-extraction										
Blank (B9G0696-BLK1)					Prepared: 07/16/19 Analyzed: 07/17/19					
Phenol	ND		2	ug/l						
Acenaphthene	ND		0.1	ug/l						
Acenaphthylene	ND		0.1	ug/l						
Anthracene	ND		0.1	ug/l						
Benzo(a)anthracene	ND		2	ug/l						
Benzo(a)pyrene	ND		2	ug/l						
Benzo(b)fluoranthene	ND		2	ug/l						
Benzo(g,h,i)perylene	ND		0.1	ug/l						
Benzo(k)fluoranthene	ND		2	ug/l						
Bis(2-ethylhexyl)phthalate	ND		6	ug/l						
Butyl benzyl phthalate	ND		2	ug/l						
Chrysene	ND		2	ug/l						
Di(n)octyl phthalate	ND		3	ug/l						
Dibenz(a,h)anthracene	ND		2	ug/l						
Diethyl phthalate	ND		2	ug/l						
Dimethyl phthalate	ND		2	ug/l						
Di-n-butylphthalate	ND		3	ug/l						
Fluoranthene	ND		0.1	ug/l						
Indeno(1,2,3-cd)pyrene	ND		2	ug/l						
Naphthalene	ND		0.1	ug/l						
Pentachlorophenol	ND		5	ug/l						
Phenanthrene	ND		0.1	ug/l						
Pyrene	ND		0.1	ug/l						
Surrogate: Nitrobenzene-d5			*38.9*	ug/l	*50.0*		*77.7*	*30-118*		
Surrogate: p-Terphenyl-d14			*44.1*	ug/l	*50.0*		*88.3*	*38-130*		
Surrogate: 2-Fluorobiphenyl			*38.3*	ug/l	*50.0*		*76.7*	*30-119*		
Surrogate: Phenol-d6			*6.88*	ug/l	*50.0*		*13.8*	*10-115*		
Surrogate: 2,4,6-Tribromophenol			*42.3*	ug/l	*50.0*		*84.6*	*15-130*		
Surrogate: 2-Fluorophenol			*14.3*	ug/l	*50.0*		*28.7*	*10-115*		

Quality Control
(Continued)

Base/Neutral & Acid Extractables (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: B9G0696 - Sep-Funnel-extraction (Continued)										
LCS (B9G0696-BS1)					Prepared: 07/16/19 Analyzed: 07/17/19					
Phenol	11		2	ug/l	50.0		22.6	17-120		
Acenaphthene	47		2	ug/l	50.0		94.3	60-132		
Acenaphthylene	47		2	ug/l	50.0		95.0	54-126		
Anthracene	48		2	ug/l	50.0		96.9	43-120		
Benzo(a)anthracene	49		2	ug/l	50.0		98.1	42-133		
Benzo(a)pyrene	50		2	ug/l	50.0		100	32-148		
Benzo(b)fluoranthene	51		2	ug/l	50.0		101	42-140		
Benzo(g,h,i)perylene	48		2	ug/l	50.0		96.4	5-195		
Benzo(k)fluoranthene	50		2	ug/l	50.0		99.4	25-146		
Bis(2-ethylhexyl)phthalate	50		6	ug/l	50.0		99.9	29-137		
Butyl benzyl phthalate	49		2	ug/l	50.0		99.0	5-152		
Chrysene	49		2	ug/l	50.0		98.5	44-140		
Di(n)octyl phthalate	49		3	ug/l	50.0		98.6	19-132		
Dibenz(a,h)anthracene	48		2	ug/l	50.0		96.6	5-200		
Diethyl phthalate	49		2	ug/l	50.0		98.4	5-120		
Dimethyl phthalate	49		2	ug/l	50.0		98.1	5-120		
Di-n-butylphthalate	47		3	ug/l	50.0		94.0	8-120		
Fluoranthene	48		2	ug/l	50.0		95.5	43-121		
Indeno(1,2,3-cd)pyrene	51		2	ug/l	50.0		102	5-151		
Naphthalene	46		2	ug/l	50.0		92.6	36-120		
Pentachlorophenol	56		5	ug/l	50.0		112	38-152		
Phenanthrene	49		2	ug/l	50.0		98.3	65-120		
Pyrene	48		2	ug/l	50.0		95.0	70-120		
Surrogate: Nitrobenzene-d5			*50.4*	ug/l	*50.0*		*101*	*30-118*		
Surrogate: p-Terphenyl-d14			*51.6*	ug/l	*50.0*		*103*	*38-130*		
Surrogate: 2-Fluorobiphenyl			*48.2*	ug/l	*50.0*		*96.4*	*30-119*		
Surrogate: Phenol-d6			*11.0*	ug/l	*50.0*		*21.9*	*10-115*		
Surrogate: 2,4,6-Tribromophenol			*56.5*	ug/l	*50.0*		*113*	*15-130*		
Surrogate: 2-Fluorophenol			*19.4*	ug/l	*50.0*		*38.9*	*10-115*		

Notes and Definitions

Item	Definition
Wet	Sample results reported on a wet weight basis.
ND	Analyte NOT DETECTED at or above the reporting limit.

New England Testing Laboratory
59 Greenhill St
W. Warwick, RI 02893
1-888-863-8522

9 G 1 0078 !

Chain of Custody Record

NU006.00R	Project Name/Location: 189 Chelmsford St, Chelmsford, MA				Matrix					Tests**								
Client: Sovereign Consulting Inc.																		
Report To: Lisa Stone (lstone@sovcon.com)																		
Invoice To: Lisa Stone																		
Date	Time	Comp	Grab	Sample I.D.	Aqueous	Soil	Other	No. of Containers	Preservative	Inorganics	Non-halogenated VOCS	Halogenated VOCs	non-halogenated SVOCs	Halogenated SVOCs	Fuels Parameters (TPH, ethanol, MTBE, TBS, TAME)	~~pH by EPA 4500-H+ B-2000~~	Temperature by EPA2550-B-2000	Hardness (freshwater)
7/10/2019	1138		x	MW-1	x			9		X	X	X	X	X	X		X	X

Sampled By:	Date/Time	Received By:	Date/Time	Laboratory Remarks:	Special Instructions: Test methods and parameter lists per NPDES permit Appendix VII. Please watch sample hold times.
	7/10/19 ~~1250~~ 1400		7/10/19 1400		
Relinquished By:	Date/Time	Received By:	Date/Time	Temp. Received:_____	

**Netlab Subcontracts the following tests: Radiologicals, Radon, TOC, Asbestos, UCMRs, Perchlorate, Bromate, Bromide, Sieve, Salmonella, Carbamates

Turnaround Time [Business Days]: 5

Receiving Water Sample

New England Testing Laboratory, Inc.
(401) 353-3420

REPORT OF ANALYTICAL RESULTS

NETLAB Work Order Number: 9G10081
Client Project: NU006.00R - 189 Chelmsford St, Chelmsford, MA

Report Date: 25-July-2019

Prepared for:

Lisa Stone
Sovereign Consulting Inc.
16 Chestnut Street #520
Foxborough, MA 02035

Richard Warila, Laboratory Director
New England Testing Laboratory, Inc.
59 Greenhill Street
West Warwick, RI 02893
rich.warila@newenglandtesting.com

Samples Submitted :

The samples listed below were submitted to New England Testing Laboratory on 07/10/19. The group of samples appearing in this report was assigned an internal identification number (case number) for laboratory information management purposes. The client's designations for the individual samples, along with our case numbers, are used to identify the samples in this report. This report of analytical results pertains only to the sample(s) provided to us by the client which are indicated on the custody record. The case number for this sample submission is 9G10081. Custody records are included in this report.

Lab ID	Sample	Matrix	Date Sampled	Date Received
9G10081-01	Golden Cove Discharge Point	Water	07/10/2019	07/10/2019

Request for Analysis

At the client's request, the analyses presented in the following table were performed on the samples submitted.

Golden Cove Discharge Point (Lab Number: 9G10081-01)

Analysis	Method
Ammonia	SM4500-NH3-D
Antimony	EPA 200.8
Arsenic	EPA 200.8
Cadmium	EPA 200.8
Calcium	SM3120-B
Chromium	EPA 200.8
Copper	EPA 200.8
Hexavalent Chromium	SM3500-Cr-B
Iron	EPA 200.8
Lead	EPA 200.8
Magnesium	SM3120-B
Mercury	EPA 245.1
Nickel	EPA 200.8
pH	SM4500-H-B
Selenium	EPA 200.8
Silver	EPA 200.8
Trivalent Chromium	Calculation
Zinc	EPA 200.8

Method References

Methods for the Determination of Metals in Environmental Samples EPA-600/R-94/111, USEPA, 1994

Standard Methods for the Examination of Water and Wastewater, 20th Edition, APHA/ AWWA-WPCF, 1998

Case Narrative

Sample Receipt

The samples were all appropriately cooled and preserved upon receipt. The samples were received in the appropriate containers. The chain of custody was adequately completed and corresponded to the samples submitted.

Metals

All analyses were performed according to NETLAB's documented Standard Operating Procedures, within all required holding times, and with appropriate quality control measures. All QC was within laboratory established acceptance criteria. The samples were received, processed, and reported with no anomalies.

Wet Chemistry

All samples were analyzed within method specified holding times and according to NETLAB's documented standard operating procedures.

Results: Calculation

Sample: Golden Cove Discharge Point
Lab Number: 9G10081-01 (Water)

Analyte	Result	Qual	Reporting Limit	Units	Date Prepared	Date Analyzed
Trivalent Chromium	**0.000808**		0.000100	mg/L	07/23/19 14:15	07/23/19 14:15

Results: General Chemistry

Sample: Golden Cove Discharge Point

Lab Number: 9G10081-01 (Water)

Analyte	Result	Qual	Reporting Limit	Units	Date Prepared	Date Analyzed
Ammonia	**0.2**		0.1	mg/L	07/17/19	07/17/19
Hexavalent chromium	ND		0.01	mg/L	07/23/19 14:15	07/23/19 14:15
pH	**6.7**		0.1	SU	07/11/19 15:30	07/11/19 15:30

Results: Total Metals

Sample: Golden Cove Discharge Point

Lab Number: 9G10081-01 (Water)

Analyte	Result	Qual	Reporting Limit	Units	Date Prepared	Date Analyzed
Total Hardness	**136**		0.125	mg/L	07/11/19	07/11/19
Antimony	**0.0002**		0.0001	mg/L	07/11/19	07/23/19
Arsenic	**0.0244**		0.0001	mg/L	07/11/19	07/23/19
Cadmium	**0.0001**		0.0001	mg/L	07/11/19	07/23/19
Calcium	**42.5**		0.05	mg/L	07/11/19	07/11/19
Chromium	**0.0008**		0.0001	mg/L	07/11/19	07/23/19
Copper	ND		0.001	mg/l	07/11/19	07/23/19
Iron	**0.900**		0.001	mg/l	07/11/19	07/23/19
Magnesium	**7.12**		0.05	mg/L	07/11/19	07/11/19
Mercury	ND		0.0002	mg/L	07/23/19	07/23/19
Nickel	**0.003**		0.001	mg/l	07/11/19	07/23/19
Selenium	ND		0.005	mg/L	07/11/19	07/23/19
Silver	**0.0002**		0.0001	mg/L	07/11/19	07/23/19
Zinc	**0.009**		0.001	mg/l	07/11/19	07/23/19
Lead	**0.0009**		0.0001	mg/L	07/11/19	07/23/19

Quality Control

General Chemistry

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: B9G0679 - pH										
LCS (B9G0679-BS1)					Prepared & Analyzed: 07/11/19					
pH	7.1		0.1	SU	7.00		101	90-110		
LCS (B9G0679-BS2)					Prepared & Analyzed: 07/11/19					
pH	7.0		0.1	SU	7.00		100	90-110		
Duplicate (B9G0679-DUP1)		**Source: 9G11020-02**			Prepared & Analyzed: 07/11/19					
pH	6.7		0.1	SU		6.6			0.451	20
Batch: B9G0762 - Ammonia										
Blank (B9G0762-BLK1)					Prepared & Analyzed: 07/17/19					
Ammonia	ND		0.1	mg/L						
Blank (B9G0762-BLK2)					Prepared & Analyzed: 07/17/19					
Ammonia	ND		0.1	mg/L						
LCS (B9G0762-BS1)					Prepared & Analyzed: 07/17/19					
Ammonia	0.9		0.1	mg/L	1.00		91.8	90-110		
LCS (B9G0762-BS2)					Prepared & Analyzed: 07/17/19					
Ammonia	1.1		0.1	mg/L	1.00		107	90-110		
Duplicate (B9G0762-DUP1)		**Source: 9G10081-01**			Prepared & Analyzed: 07/17/19					
Ammonia	0.2		0.1	mg/L		0.2			4.66	20
Matrix Spike (B9G0762-MS1)		**Source: 9G10081-01**			Prepared & Analyzed: 07/17/19					
Ammonia	1.2		0.1	mg/L	1.00	0.2	106	80-120		

Quality Control
(Continued)

General Chemistry (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: B9G1014 - Hexavalent Chrome										
Blank (B9G1014-BLK1)					Prepared & Analyzed: 07/23/19					
Hexavalent chromium	ND		0.01	mg/L						
Blank (B9G1014-BLK2)					Prepared & Analyzed: 07/23/19					
Hexavalent chromium	ND		0.01	mg/L						
LCS (B9G1014-BS1)					Prepared & Analyzed: 07/23/19					
Hexavalent chromium	0.51		0.01	mg/L	0.500		102	90-110		
LCS (B9G1014-BS2)					Prepared & Analyzed: 07/23/19					
Hexavalent chromium	0.11		0.01	mg/L	0.100		110	90-110		
LCS (B9G1014-BS3)					Prepared & Analyzed: 07/23/19					
Hexavalent chromium	0.50		0.01	mg/L	0.500		99.6	90-110		
Duplicate (B9G1014-DUP1)		**Source: 9G10081-01**			Prepared & Analyzed: 07/23/19					
Hexavalent chromium	ND		0.01	mg/L		ND				20
Matrix Spike (B9G1014-MS1)		**Source: 9G10081-01**			Prepared & Analyzed: 07/23/19					
Hexavalent chromium	0.47		0.01	mg/L	0.500	ND	93.4	80-120		

Quality Control
(Continued)

Total Metals

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: B9G0508 - Hot plate acid digestion waters										
Blank (B9G0508-BLK1)					Prepared: 07/11/19 Analyzed: 07/19/19					
Arsenic	ND		0.0001	mg/L						
Calcium	ND		0.05	mg/L						
Magnesium	ND		0.05	mg/L						
Zinc	ND		0.001	mg/l						
Silver	ND		0.0001	mg/L						
Iron	ND		0.001	mg/l						
Selenium	ND		0.005	mg/L						
Antimony	ND		0.0001	mg/L						
Nickel	ND		0.001	mg/l						
Copper	ND		0.001	mg/l						
Chromium	ND		0.0001	mg/L						
Cadmium	ND		0.0001	mg/L						
Lead	ND		0.0001	mg/L						
LCS (B9G0508-BS1)					Prepared & Analyzed: 07/11/19					
Calcium	9.84		0.05	mg/L	10.0		98.4	85-115		
Magnesium	9.86		0.05	mg/L	10.0		98.6	85-115		
LCS (B9G0508-BS2)					Prepared: 07/11/19 Analyzed: 07/19/19					
Chromium	20.6			ug/l	20.0		103	85-115		
Copper	177			ug/l	200		88.6	85-115		
Arsenic	18.9			ug/l	20.0		94.7	85-115		
Silver	20.4			ug/l	20.0		102	85-115		
Nickel	183			ug/l	200		91.6	85-115		
Cadmium	19.1			ug/l	20.0		95.3	85-115		
Antimony	19.6			ug/l	20.0		98.1	85-115		
Selenium	18.0			ug/l	20.0		90.2	85-115		
Zinc	184			ug/l	200		92.0	85-115		
Iron	188			ug/l	200		93.9	85-115		
Lead	20.4			ug/l	20.0		102	85-115		

Notes and Definitions

Item	Definition
Wet	Sample results reported on a wet weight basis.
ND	Analyte NOT DETECTED at or above the reporting limit.

New England Testing Laboratory
59 Greenhill St
W. Warwick, RI 02893
1-888-863-8522

9 G 1 0081

Chain of Custody Record

NU006.00R	Project Name/Location: 189 Chelmsford St, Chelmsford, MA				Matrix					Tests**								
Client: Sovereign Consulting Inc.										~~pH by EPA 4500-H+ B-2000~~	Temperature by EPA 2550-B-2000	Hardness (freshwater)	Ammonia					
Report To: Lisa Stone (lstone@sovcon.com)																		
Invoice To: Lisa Stone																		
Date	Time	Comp	Grab	Sample I.D.	Aqueous	Soil	Other	No. of Containers	Preservative									
7/10/2019	1211		x	Golden Cove Discharge Point	x			3 •••			X	X	X					

Sampled By:	Date/Time	Received By:	Date/Time	Laboratory Remarks:	Special Instructions: Test methods and parameter lists per NPDES permit Appendix VII. Please watch sample hold times.
	7/10/19 1400		7/10/19 1400		Ag, As, Cd, Cr, Cu, Fe, Ni, Pb, Sb, Se, Zn, Hg added per Lisa 3day TAT Sdd 7/22
Relinquished By:	Date/Time	Received By:	Date/Time	Temp. Received:	

**Netlab Subcontracts the following tests: Radiologicals, Radon, TOC, Asbestos, UCMRs, Perchlorate, Bromate, Bromide, Sieve, Salmonella, Carbamates

Turnaround Time [Business Days]: 5

New England Testing Laboratory
59 Greenhill St
W. Warwick, RI 02893
1-888-863-8522

9G1 0081

Chain of Custody Record

NU006.00R	Project Name/Location: 189 Chelmsford St, Chelmsford, MA				Matrix					Tests**									
Client: Sovereign Consulting Inc.										~~pH by EPA 4500 H+ B-2000~~	Temperature by EPA 2550-B-2000	Hardness (freshwater)	Ammonia						
Report To: Lisa Stone (lstone@sovcon.com)																			
Invoice To: Lisa Stone																			
Date	Time	Comp	Grab	Sample I.D.	Aqueous	Soil	Other	No. of Containers	Preservative										
7/10/2019	1211		x	Golden Cove Discharge Point	x			3 •••			X	X	X						

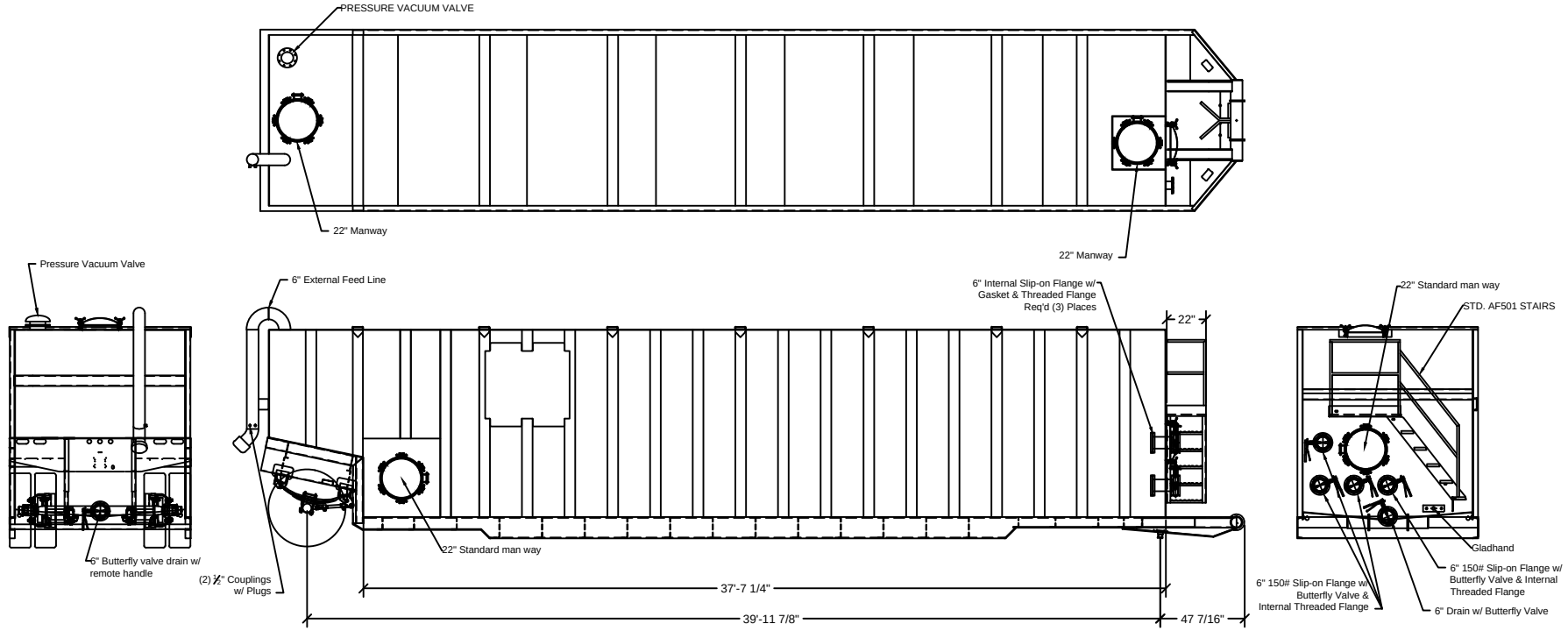
Sampled By:	Date/Time	Received By:	Date/Time	Laboratory Remarks:	Special Instructions: Test methods and parameter lists per NPDES permit Appendix VII. Please watch sample hold times.
	7/10/19 1400		7/10/19 1400		
Relinquished By:	Date/Time	Received By:	Date/Time	Temp. Received:	

**Netlab Subcontracts the following tests: Radiologicals, Radon, TOC, Asbestos, UCMRs, Perchlorate, Bromate, Bromide, Sieve, Salmonella, Carbamates

Turnaround Time [Business Days]: 5

Appendix C

Water Treatment System



STANDARD SPECIFICATION

CAPACITY: .... 21,000 GALLONS (500 BBL)
SIDE SHEETS: .... 1/4" A36 PLATE
TOP SHEET: .... 1/4" A36 PLATE
FRONT SHEET: .... 1/4" A36 PLATE
REAR SHEET: .... 1/4" A36 PLATE
FLOOR: .... 1/4" A36 PLATE
MAIN FLOOR RAILS: .... 12" x 20.7# STRUCTURAL CHANNEL
FLOOR CROSSMEMBERS: .... 1/4" A36 PLATE
SIDE STAKES: .... ONE PIECE 3/16" A36 PLATE
SUSPENSION: .... 3 LEAF SPRING, 22,500 LBS. CACPACITY
AXLE: .... 77.5" TRACK, 22,500 LBS. CAPACITY
TIRES: 11R22.5
WHEELS: .... 8.25 x 22.5 STEEL
MANWAYS: .... 3 - 22" DIA. FRONT & TOP
1 - 22" DIA. CURB SIDE
VALVES: .... 1 - BLAYLOCK PRESSURE VALVE
5 - 6" BUTTERFLY (FRONT)
1 - 6" BUTTERFLY VALVE (REAR DRAIN)
INLET PIPING: .... 1 - 6" PIPE SYSTEM (REAR)
BLAST: .... (INTERIOR) SSPC-SP-10 (NEAR WHITE)
(EXTERIOR) SSPC-SP-6 (COMMERCIAL BLAST)
PAINT: .... (INTERIOR) EPOXYPHENOLIC 100% SOLID 20.0 MILS D.F.T.
(EXTERIOR) PRIMER COAT EPOXY 3.0 TO 4.0 MILS D.F.T.
(EXTERIOR) FINISH COAT POLURETHANE 3.0 TO 4.0 D.F.T.

21,000 Gal. Frac Tank

Lockwood Remediation Technologies, LLC

89 Crawford Street
Leominster, Massachusetts 01453
O: 774-450-7177
F: 888-835-0617

TSURUMI PUMP

LHW- SERIES

HIGH HEAD DEWATERING PUMP

SPECIFICATIONS

FEATURES

1. Enclosed, high chrome iron, impellers, with replaceable / adjustable high chrome iron wear rings increases wear resistance when pumpage contains abrasive particles.

2. Double inside mechanical seals with silicon carbide faces, (both top and bottom) running in an oil filled chamber and further protected by a lip seal running against a replaceable, 430 stainless steel shaft sleeve, provides for the most durable seal design available.

3. Highly efficient, continuous duty air filled, copper wound motor with class B, F insulation minimizes the cost of operation.

4. Built in thermal & amperage Sensing protector prevents motor failure due to- overloading or accidental run -dry conditions.

5. Double shielded, permanently lubricated, high temperature C3 ball bearings rated for a B-10 life of 60,000 hours, extend operational life.

6. Top discharge, flow-thru design enables operation at low water levels for extended Periods.

APPLICATIONS

1. Residential, commercial, industrial wastewater and construction site drainage.

2. Effluent transfer.

3. Decorative waterfalls and fountains.

4. Raw water supply from rivers or lakes..

OIL LIFTER (PAT PEND) EQUIPPED

C ETL LISTED US Intertek

SPECIFICATIONS

Discharge Size	2" ~ 4" NPT (50 ~ 100 mm)
Horsepower Range	4 ~ 150 HP. (3.0 ~ 110 kW)
Performance Range Capacity	26.4 ~ 528 GPM. (0.10 ~ 2.0 m^3/min)
Head	54.1 Ft. ~ 755 Ft. (16.5. ~ 230 m)
Maximum water temperature	104 °F. (40 °C.)
Materials of Construction	
Casing	Cast Iron , Ductile Cast Iron
Impeller	High Chrome Cast Iron
Shaft	420 Stainless Steel
Motor Frame	Cast Iron
Fasteners	304 Stainless Steel
Seal Pressure Relief Ports	7.5 - 150HP (5.5 - 30kW)
Mechanical Seal	Silicon Carbide
Elastomers	NBR (Nitrile Butadiene Rubber)
Impeller Type	Enclosed, two stage, solids handling.
Solids Handling Capability	0.236 - 0.334" (6.0 - 8.5mm)
Bearings	Prelubricated, Double Shielded
Motor Nomenclature	
Type, Speed, Hz.	Air Filled, 3600 RPM, 60 Hz.
Voltage, Phase	208/230/460/575 V., 3 Phase
Insulation	Class B, F
Accessories	Submersible Power Cable 65' (20 m)
Operational Mode	Manual

STANDARD

OPTIONS

Length as Required

TS-301 Float Switch

Polyester Liquid Filter Bag

Features

* Polyester liquid bag filter are available with a carbon steel ring, stainless steel ring or plastic flanges.
* Heavy-duty handle eases installation and removal
* Metal ring sewn into bag top for increased durability and positive sealing
* Wide array of media fibers to meet needed temperature and micron specifications

Applications

Polyester liquid filter bags can be used in the filtering of a wide array of industrial and commercial process fluids

Sizes

Our liquid filter bags are available for all common liquid bag housings. Dimensions range from 4.12" diameter X 8" length thru 9" diameter X 32" length.

Micron Ratings

Available fibers range from 1 to 1500 microns

Options

* Bag finish or covers for strict migration requirements.
* Plastic top O.E.M. replacements
* Multi-layered filtering capabilities for higher dirt holding capacities

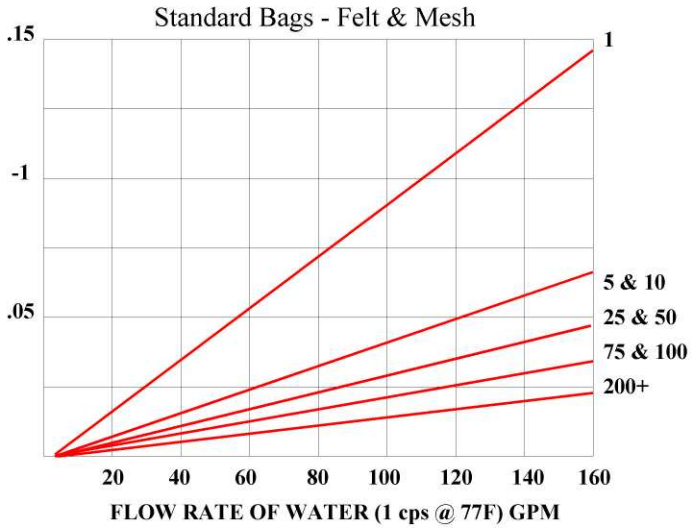
Optional Filter Media

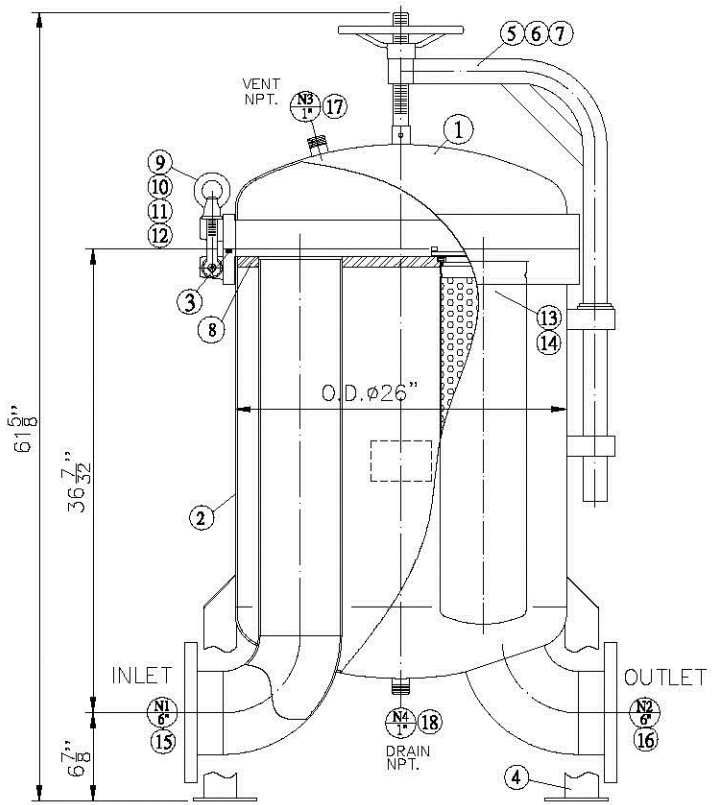
Felt: Nomex, Polyester, Polypropylene

Monofilament: Nylon, Polyester, Polypropylene

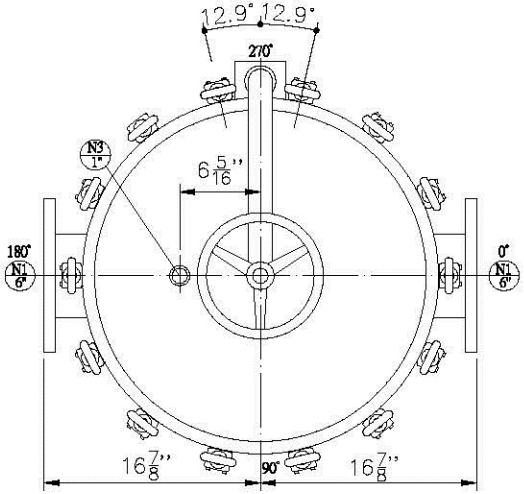
Multifilament: Nylon, Polyester

Polypropylene: Oil Removal

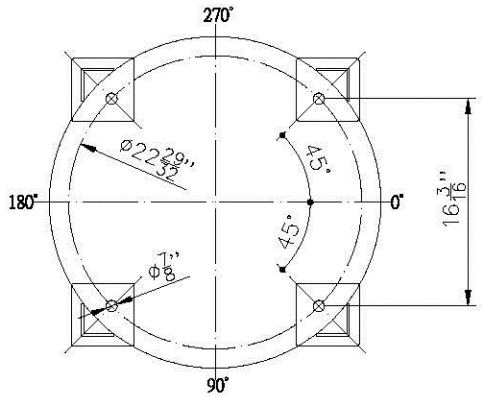




SIDE VIEW



TOP VIEW



ANCHOR

BILL OF MATERIALS
(QUANTITY PER UNIT)

PROD ORDER_____S.O_____ MFG. SERIAL NO._____

CUSTOMER_____ DESIGN __150__ PSIG __90__ °C

DESTINATION_____ MAX. A.W.P._150__ PSIG __90__ °C

CUST. P.O._____ HYDROSTATIC TESTED _225_ PSIG

CUST.EQUIP_____ CODE _____

CODE STAMP_____ N.B._____

NO OF UNITS _____ SCH SHIP DATE _____

WEIGHT EMPTY _____ KG. FULL _____ KG

NO.	DESCRIPTION	MATERIAL	UNIT	QUAN.	PART NO.
1	FILTER COVER	304		1	
2	FILTER SHELL	304		1	
3	GASKET	EPDM		1	
4	LEG WELDMENT	304		4	
5	DAVIT HANDWHEEL	304		1	
6	DAVIT SCREW	304		1	
7	DAVIT ARM	304		1	
8	SEPARATE PLATE	304		1	
9	EYENUT	304		14	
10	WASHER	304		14	
11	EYEBOLT	304		14	
12	BOLT SUPPORT	304		14	
13	BASKET	304		6	
14	BAG-LOCK DEVICE	304		6	
15	INLET 6" ANSI 150B RF	304		1	
16	OUTLET 6" ANSI 150B RF	304		1	
17	VENT NPT 1"	304		1	
18	DRAIN NPT 1"	304		1	

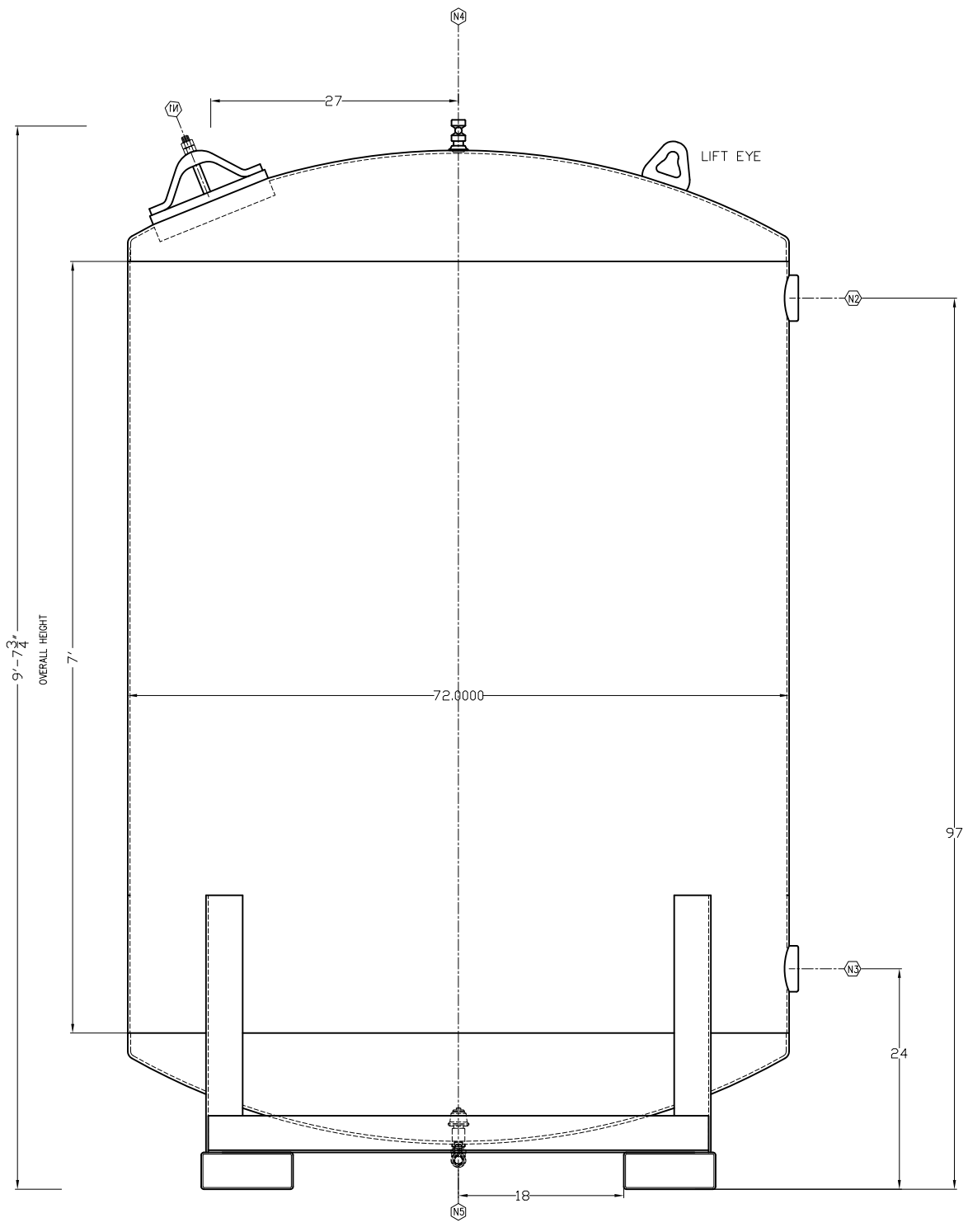
Lockwood Remediation Technologies, LLC
89 Crawford Street
Leominster, MA

NAME	REV: A
Multi-Bag Filter Vessel	SCALE: NONE

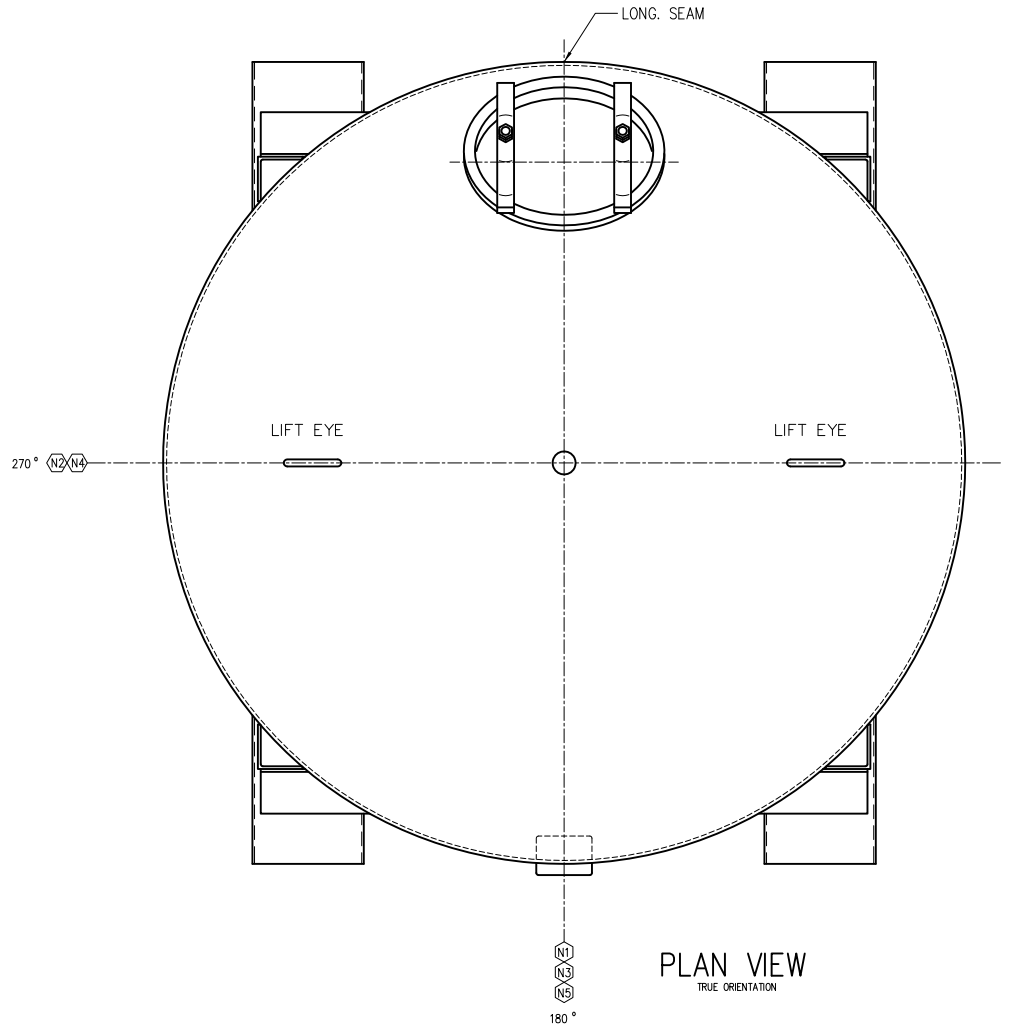
PROJECT NO.	ORDER NO.	ITEM NO.

DATE: UNIT: INCH

RevNo	Revision note	Date	Signature	Checked



ELEVATION VIEW



PLAN VIEW
TRUE ORIENTATION

NOZZLE SCHEDULE

ID	*Description*	*Service*
N1	14" x 18" Ellip. Manway w/3/4" x 3" Ring	Upper bed access with Cover (SA-36), Bolts, Neoprene Gasket
N2	4" FNPT 3000# Coupling	Process Inlet
N3	4" FNPT 3000# Coupling	Process Outlet
N4	1/2" 150# Tank Flange	Vent w/Valve
N5	1" FNPT 3000# Coupling	Drain w/Valve
N6		
N7		

COATINGS SCHEDULE

Surface	*Surface Preparation*	*Product Specification*
Internal - 1	SSPC-SP10 , Near White Blast	Carboline Carboguard 635 6-10 mils DFT per Coat
Internal - 2	Inspect	Carboline Carboguard 635 6-10 mils DFT per Coat
External - 1	SSPC-SP6	Carboline Carboguard 635 6-10 mils DFT
External - 2	n/a	Carboline Carbothane 8845 3-5 mils DFT (Blue)
External - 3	n/a	n/a

NOTES

Item	*Details*
Construction	Non-Code Design Pressure: 75 PSIG @ 140 DEG F.
Mtrls Vessel	Shell: SA-36 Heads: SA-36 Pipe: SA-53 (see nozzle detail for others)
Mtrls Interls	Hub, Laterals (.012" Slot), Diffuser: 304 SS Gaskets: Buna-N
n/a	n/a
n/a	n/a
Media	TBD

5,000 lb. High Pressure Liquid Media Vessel

Lockwood Remediation Technologies, LLC

89 Crawford Street
Leominster, Massachusetts 01453
O: 774-450-7177
F: 888-835-0617

89 Crawford Street
Leominster, Massachusetts 01453
Tel: 774.450.7177
Fax: 888.835.0617
www.lrt-llc.net

GC 8x30AW

Acid-Washed Granular Activated Carbon

GC 8x30AW is a virgin acid washed activated carbon which is granular in form. Made from the finest grades of bituminous coal and then acid washed, it is ideal for many liquid phase applications including the removal of organics from water streams. Its superior adsorptive capacity and low level of impurities make it cleaner than most other carbons and gives it longer life expectancy. NSF certified, it is suitable for drinking water and food grade applications.

Specifications	
Mesh Size – 8×30, %:	90 (min)
Less than No. 8, %:	5 (max)
Greater than No. 30, %:	5 (max)
Iodine No., mg/g:	900 (min)
Surface Area, m^2/g:	900 (min)
Hardness, %:	90 (min)
Ash Content, %:	8 (max)
Moisture Content, % (as packaged):	3.0 (max)
Typical Density, $lbs./ft.^3$:	29 – 33
g/cc:	0.47 – 0.53
pH:	6 – 7 (avg)

*Standard packaging is in 55 or 1100 lb. vinyl bags. Other packaging is available upon request.

CAUTION!

Wet activated carbon removes oxygen from air causing a severe hazard to workers inside carbon vessels. Confined space/low oxygen procedures should be put in place before any entry is made. Such procedures should comply with all applicable Local, State and Federal guidelines.

GROOVED & SMOOTH-END FLOWMETER MODEL MG/MS100

SPECIFICATIONS

PERFORMANCE

ACCURACY/REPEATABILITY: ±2% of reading guaranteed throughout full range. ±1% over reduced range. Repeatability 0.25% or better.
RANGE: (see dimensions chart below)
HEAD LOSS: (see dimensions chart below)
MAXIMUM TEMPERATURE: (Standard Construction) 160°F constant
PRESSURE RATING: 150 psi

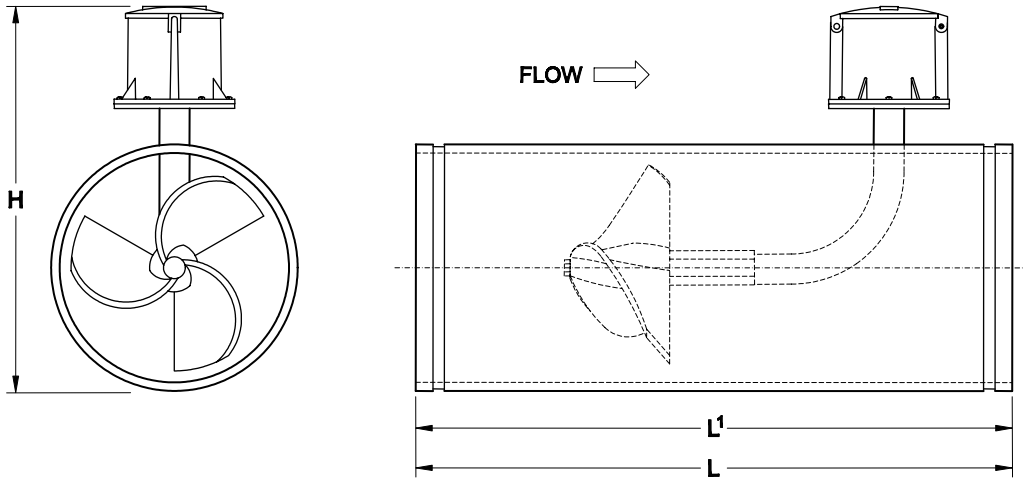
MATERIALS

TUBE: Epoxy-coated carbon steel.
BEARING ASSEMBLY: Impeller shaft is 316 stainless steel. Ball bearings are 440C stainless steel.
MAGNETS: (Permanent type) Cast or sintered alnico
BEARING HOUSING: Brass; Stainless Steel optional
IMPELLER: Impellers are manufactured of high-impact plastic, retaining their shape and accuracy over the life of the meter. High temperature impeller is optional.

REGISTER: An instantaneous flowrate indicator and six-digit straight-reading totalizer are standard. The register is hermetically sealed within a die cast aluminum case. This protective housing includes a domed acrylic lens and hinged lens cover with locking hasp.
COATING: Fusion-bonded epoxy

OPTIONS

- Forward/reverse flow measurement
- High temperature construction
- "Over Run" bearing assembly for higher-than-normal flowrates
- Electronic Propeller Meter available in all sizes of this model
- A complete line of flow recording/control instrumentation
- Straightening vanes and register extensions available
- Certified calibration test results



McCrometer reserves the right to change design or specifications without notice.

MG100 / MS100	DIMENSIONS												
Meter Size (inches)	**2**	**2 ½**	**3**	**4**	**6**	**8**	**10**	**12**	**14**	**16**	**18**	**20**	**24**
Maximum Flow U.S. GPM	250	250	250	600	1200	1500	1800	2500	3000	4000	5000	6000	8500
Minimum Flow U.S. GPM	40	40	40	50	90	100	125	150	250	275	400	475	700
Head Loss in Inches at Max. Flow	29.50	29.50	29.50	23.00	17.00	6.75	3.75	2.75	2.00	1.75	1.50	1.25	1.00
Shipping Weight, lbs.	* See Special Note		17	40	54	68	87	106	140	144	172	181	223
H (inches)			10.9	12.78	13.84	14.84	16.91	18.90	20.53	22.53	25.53	26.53	30.53
L (inches) MG100			13	20	20	20	20	20	20	22	22	22	22
L^1 (inches) MS100			13	20	22	22	22	22	22	24	24	24	24
O.D. of Meter Tube			3.50	4.500	6.625	8.625	10.750	12.750	14.00	16.00	18.00	20.00	24.00

Special Note—
Reducing fittings incorporating grooves are supplied to adapt the 3-inch model to smaller line sizes.

Larger flowmeters on special order.

Appendix D

Supplemental Information

MassDEP - Bureau of Waste Site Cleanup

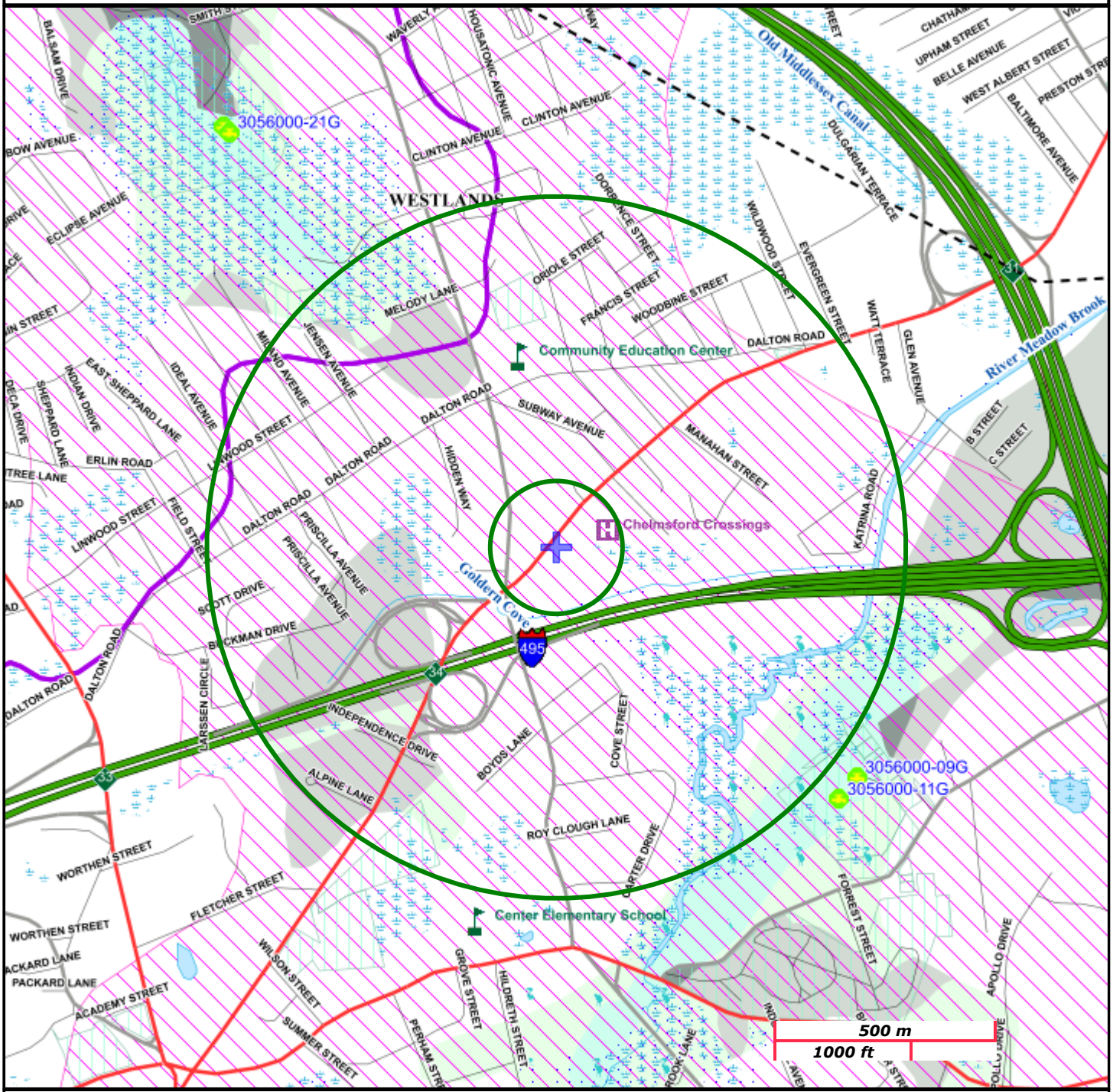
Phase 1 Site Assessment Map: 500 feet & 0.5 Mile Radii

Site Information:
189 CHELMSFORD STREET
189 CHELMSFORD STREET CHELMSFORD, MA

NAD83 UTM Meters:
4719913mN , 307954mE (Zone: 19)
July 2, 2019

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

MassDEP
Commonwealth of Massachusetts
Department of Environmental Protection



Roads: Limited Access, Divided, Other Hwy, Major Road, Minor Road, Track, Trail
Boundaries: Town, County, DEP Region; Train; Powerline; Pipeline; Aqueduct
Basins: Major, PWS; Streams: Perennial, Intermittent, Man Made Shore, Dam
Aquifers: Medium Yield, High Yield, EPA Sole Source
Non Potential Drinking Water Source Area: Medium, High (Yield)
PWS Protection Areas: Zone II, IWPA, Zone A
Hydrography: Open Water, PWS Reservoir, Tidal Flat
Wetlands: Freshwater, Saltwater, Cranberry Bog
FEMA 100yr Floodplain; Protected Open Space; ACEC
Est. Rare Wetland Wildlife Hab; Vernal Pool: Cert., Potential
Solid Waste Landfill; PWS: Com.GW,SW, Emerg., Non-Com.

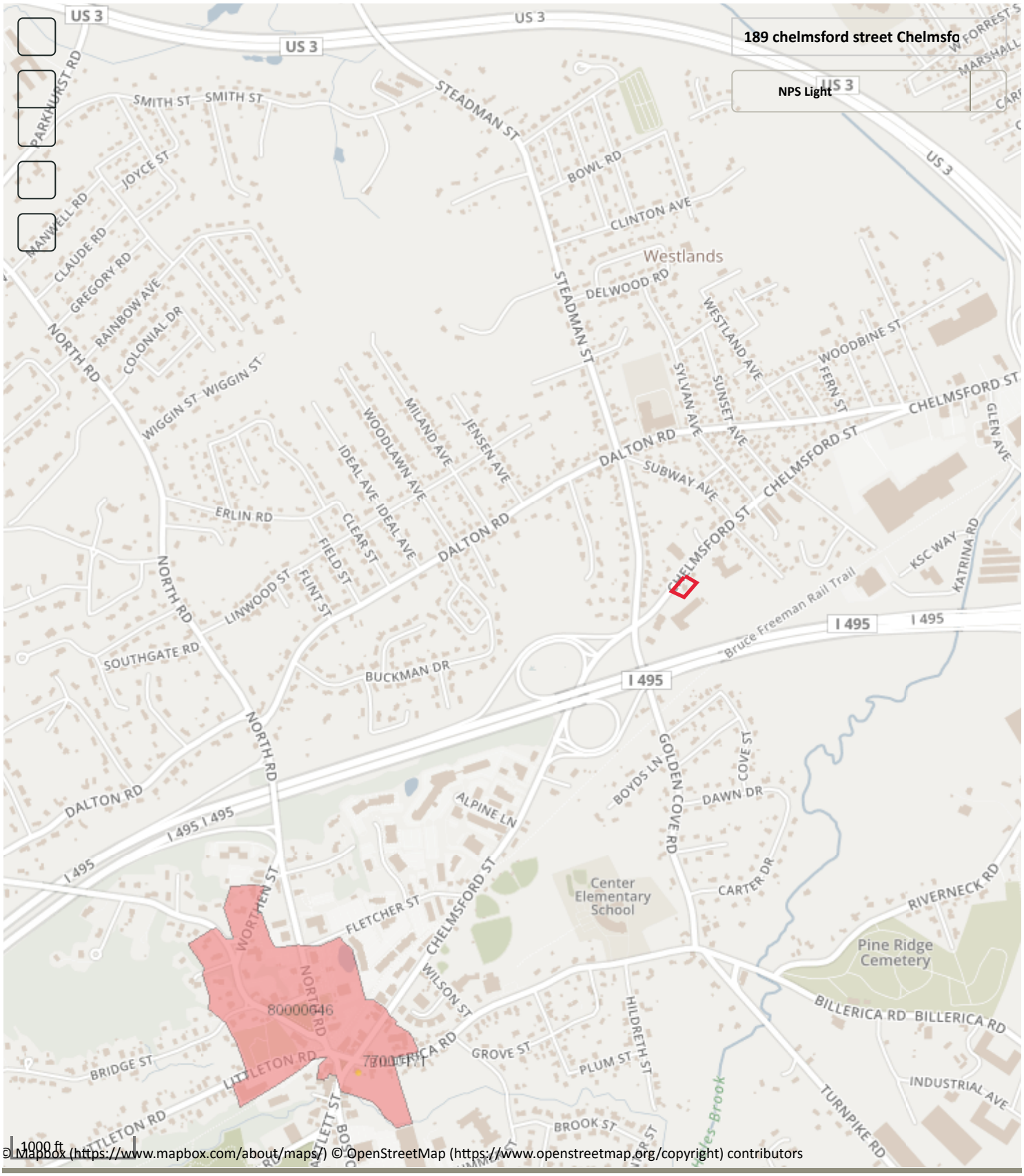
Documentation of the National Historic Preservation Act Eligibility Determination:

As part of this permit, a determination was made as to whether there were any historic properties or places listed on the national register in the path of the discharge or in the vicinity of the construction of treatment systems or BMPs related to the discharge. A search on the Massachusetts Cultural Resource Information System Database and the National Register of Historic Places did not list any potential historic properties on or near the project site in the databases. Therefore, the proposed discharge will not have the potential to cause effects on historical properties.

National Register of Histori...

National Park Service
U.S. Department of the Interior

Public, non-restricted data depicting National Register spatial data proce...



Massachusetts Cultural Resource Information System

MACRIS

MACRIS Search Results

Search Criteria: Town(s): Chelmsford; Street No: 189; Street Name: Chelmsford St; Resource Type(s): Area, Building, Burial Ground, Object, Structure;

Inv. No.	Property Name	Street	Town	Year

Documentation of the Results of the ESA Eligibility Determination:

Using information in Appendix II of the NPDES RGP, the project located at 189 Chelmsford Street, Chelmsford, MA is eligible for coverage under this general permit under FWS Criterion C. This project is located in Middlesex County. No designated critical habitats were listed in the project area. An Endangered Species Consultation was conducted on the U.S. Fish & Wildlife Service New England Field Office ECOS IPaC webpage for the Site:

• The Northern long-eared bat was listed as "Threatened" wherever it is found;

Temporary dewatering activities at the site are not expected to impact the Northern Long-eared Bat.

Northern long-eared bats spend winter hibernating in caves and mines. They use areas in various sized caves or mines with constant temperatures, high humidity, and no air currents. During the summer, northern long-eared bats roost singly or in colonies underneath bark, in cavities or in crevices of both live trees and snags (dead trees). There are no caves and mines located at the site. There are trees in the immediate vicinity of the site; however, tree removal is not part of the scope of work related to this Notice of Intent. Therefore, temporary dewatering activities will have "no impact" to the Northern Long-eared Bat.

United States Department of the Interior

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

In Reply Refer To:
Consultation Code: 05E1NE00-2019-SLI-2158
Event Code: 05E1NE00-2019-E-05435
Project Name: 189 Chelmsford Street

July 01, 2019

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

To Whom It May Concern:

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

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

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

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

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

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

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

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

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

Attachment(s):

- Official Species List

Official Species List

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

This species list is provided by:

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

Project Summary

Consultation Code: 05E1NE00-2019-SLI-2158

Event Code: 05E1NE00-2019-E-05435

Project Name: 189 Chelmsford Street

Project Type: Water Withdrawal / Depletion

Project Description: Construction dewatering

Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/place/42.607736071307215N71.34119069755386W

Counties: Middlesex, MA

Endangered Species Act Species

There is a total of 1 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

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1. 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.

Mammals

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

Critical habitats

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