SANBORN HEAD
Building Trust. Engineering Success.

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

July 7, 2017
File No. 3894.00

Re: Notice of Intent for the Remediation General Permit – Existing Discharge
Collection Structure Remediation/Dewatering
Prior NPDES RGP Authorization No. MAG910616
Needham Oil Company
355 Chestnut Street, Needham, Massachusetts

Dear Sir/Madam:

On behalf of Woodcock Realty Inc. (WRI), Sanborn Head has submitted this Notice of Intent (NOI) to the United States Environmental Protection Agency (USEPA) for coverage under the National Pollutant Discharge Elimination System (NPDES) Remediation General Permit (RGP) MAG910000 for the existing discharge located at 355 Chestnut Street in Needham, Massachusetts (the Site). This letter and supporting documentation were prepared in accordance with the U.S. EPA guidance for collection structure/sump dewatering (Category VII – G) under the RGP program. This discharge has previously been authorized by the U.S. EPA under the 2010 NPDES RGP authorization No. MAG910616. Discharge under the 2010 RGP has been in operation since May 2014. The location of the Site and the discharge location via a storm drain outfall are shown on Figure 1 and the storm drain conveyance system is shown on Figure 2.

The RGP is being used to support the seasonal discharge of groundwater from a basement sump system at the Site, which is currently occupied by a bank. The sump is located within the Massachusetts Contingency Plan (MCP) Disposal Site identified by Release Tracking Number (RTN) 3-31855 associated with chlorinated volatile organic compounds (CVOCs) observed in groundwater and soil vapor. CVOC impacts have been attributed to historical releases of chlorinated solvents from dry cleaning operations located in the abutting building at 357 Chestnut Street. A dry cleaner has operated at the current location since the mid 1960s.

The basement of the building at 355 Chestnut Street has two sumps, each with pumps that run seasonally to prevent groundwater infiltration to the basement. Groundwater sampling of the sump water completed in 2014 by the prior Licensed Site Professional (LSP) for the Site indicated detections of CVOCs. Based on the detection of CVOCs, the sump system was modified to treat the groundwater prior to discharge. The sump system functions by collecting groundwater in two sumps and pumping the water through two (2) 200-pound canisters of liquid phase granular activated carbon in series. The system has a design capacity of approximately 10 gallons per minute (gpm). The treated water is pumped via a private subsurface drain line to an on-Site oil/water separator (OWS) where it is mixed with storm water before being discharged to the Town of Needham drainage system along Marsh Road. The approximate location of discharge via a storm drain outfall is shown on Figures 1 and 2, the stormwater conveyance system is shown on Figure 2, and the existing treatment schematic is included as Figure 3. The completed NOI for the RGP form is included as Appendix A.

The discharge point for the Town of Needham storm drain is identified as Outfall No. 377, which discharges to an unnamed, seasonal brook, approximately 300 feet to the southwest of the Site. The unnamed brook, which is the receiving water body for this discharge, is not listed in the Massachusetts Year 2014 Integrated List of Waters, and the mapped results are included as Appendix B. Because the unnamed brook is a perennial stream, there is no low flow (7Q10) flow rate, and a dilution factor of 1:1 will be used, which has been approved by the Massachusetts Department of Environmental Protection (MassDEP). Stream Stats output and correspondence with MassDEP are included in Appendix C.

Analytical laboratory data for on-Site and surface water sampling is summarized in Tables 1 and 2, respectively, and analytical data reports are included in Appendix D. In accordance with Section 4.1(5)(c) of the RGP, only analytical data collected within the past year has been included with this NOI submittal. Because the existing system operates seasonally in the spring, this data only includes April, May, and June 2017. In addition, please note that only parameters believed to be present and required by the original 2010 RGP (the four primary CVOCs) have been monitored at the Site with the exception of additional parameters required by the 2017 RGP (i.e., receiving water sample for temperature, pH, ammonia, and hardness and hardness in the system influent).

Municipal correspondence notifying the Town of Needham of the NPDES NOI filing is included in Appendix E. According to the Information for Planning and Conservation (IPaC), the dewatering activities will not impact Areas of Critical Environmental Concern (ACEC) or Habitats of Rare Wetland Wildlife. According to the IPaC report, the northern long-eared bat, a threatened species, is located within the dewatering and discharge area. According to correspondence with the U.S. Fish and Wildlife Service, the project is unlikely to have any effect on the threatened species. This correspondence and a letter from that agency are included in Appendix F. An email requesting information regarding Oceanic Fisheries was send to the National Oceanic and Atmospheric Administration (NOAA), and their response, included in Appendix F, states that no listed species are known to occur in the unnamed brook in the area of discharge.

Additional supplemental information required by the RGP is included in Appendix G and Appendix H, and are referenced within the completed NOI (Appendix A).

Discharge of treated water began in May 2014 under the previous NPDES RGP permit No. MAG910616. Discharge of the treated water, pending approval of this NOI, is expected to continue through at least April 2022, when the existing permit expires.

Thank you for your consideration of this NOI/Permit. Please feel free to contact us if you wish to discuss the information contained in this application, or if any additional information is needed.

Very truly yours,
SANBORN, HEAD & ASSOCIATES, INC.

Patrick

Matthew P. Heil, P.E., LSP
Project Director/Associate

Patrick R. Malone, P.E.
Senior Project Manager

DMD/PRM/MPH: dmd

Encl. Table 1 – Summary of NPDES RGP Treatment System Data
Table 2 – Summary of Surface Water Quality
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Figure 2 – Site Plan
Figure 3 –Conceptual Groundwater Treatment Schematic
Appendix A – Notice of Intent Form
Appendix B – Massachusetts 2014 Integrated List of Waters Map
Appendix C – WQBEL Calculations and Supporting Information
Appendix D – Analytical Data Reports
Appendix E – Municipal Correspondence
Appendix F – Federal Correspondence
Appendix G – National Register of Historic Places, Needham, Massachusetts
Appendix H – Supplemental Information

cc: Mr. William Woodcock ~ Woodcock Realty Inc.
Mr. Daniel Bailey ~ Pierce Atwood LLP
Mr. Anthony L. Del Gaizo ~ Town Engineer - Needham

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TABLES

TABLE 1

Summary of NPDES RGP Treatment System Data
355-357 Chestnut Street
Needham, Massachusetts

LOCATION	**Units**	**INFLUENT**	**EFFLUENT**	**INFLUENT**	**EFFLUENT**	**INFLUENT**	**EFFLUENT**	**INFLUENT**	**Influent Maximum**	**Influent Average**
SAMPLING DATE		**4/10/2017**	**4/10/2017**	**5/11/2017**	**5/11/2017**	**6/13/2017**	**6/13/2017**	**6/22/2017**		
General Chemistry										
pH (H)	SU	-	-	-	-	-	-	7.1	7.1	7.1
Total Hardness by SM 2340B										
Hardness	mg/l	-	-	-	-	-	-	30.7	30.7	30.7
Anions by Ion Chromatography										
Chloride	ug/l	83,400	87,500	30,200	34,700	26,800	28,300	-	83400	46,800
Semivolatile Organics by GC/MS										
Bis(2-ethylhexyl)phthalate	ug/l	<3	<3	<3	<3	<3	<3	-	BDL	BDL
Butyl benzyl phthalate[4]	ug/l	<5	<5	<5	<5	<5	<5	-	BDL	BDL
Di-n-butylphthalate[4]	ug/l	<5	<5	<5	<5	<5	<5	-	BDL	BDL
Di-n-octylphthalate[4]	ug/l	<5	<5	<5	<5	<5	<5	-	BDL	BDL
Diethyl phthalate[4]	ug/l	<5	<5	<5	<5	<5	<5	-	BDL	BDL
Dimethyl phthalate[4]	ug/l	<5	<5	<5	<5	<5	<5	-	BDL	BDL
Total Phthalates[5]	ug/l	BDL	BDL	BDL	BDL	BDL	BDL	-	BDL	BDL
Pentachlorophenol	ug/l	<10	<10	<10	<10	<10	<10	-	BDL	BDL
Volatile Organics by GC/MS										
Tetrachloroethene	ug/l	38	<0.5	8	<0.50	13	<0.5	-	38	19.67
Vinyl chloride	ug/l	<1	<1	<1.0	<1.0	<1	<1	-	BDL	BDL
Trichloroethene	ug/l	3.7	<0.5	<0.50	<0.50	<0.5	<0.5	-	3.7	1.4
cis-1,2-Dichloroethene	ug/l	0.81	<0.5	<0.50	<0.50	<0.5	<0.5	-	0.81	0.44

Notes:

1. The samples were collected from the on-site groundwater sump treatment system by Sanborn, Head & Associates, Inc. personnel on the dates indicated and were submitted to Alpha Analytical, Inc. of Westborough, MA (Alpha) for analysis.
2. The Laboratory Reporting Limit (RL) meets the requirements of Appendix VI of the National Pollutant Discharge Elimination System (NPDES) Remediation General Permit (RGP) even though RLs of certain analytes exceed RGP Effluent Limits.
3. Only "Effluent" samples were compared to the NPDES RGP effluent limits criteria.
4. Individual phthalate compound.
5. "Total phthalates" is the sum of individual phthalate compounds; the RL for total phthalates is the highest reported phthalate RL.
6. The maximum and average concentrations for influent were calculated and are shown in the table. Where an analyte was not detected, half of the reporting limit was used in the calculation of the average.
7. Abbreviations:
    - 'SU' = standard units
    - 'NS' = no standard
    - '<' = analytes not detected above laboratory reporting limits
    - 'BDL' = indicates analyte is below detection limits
8. Monitor Only means that the subject compound is not subject to a (criteria) limit, however, the Permitee is still required to monitor and report the effluent concentration.

TABLE 2

Summary of Surface Water Quality
355-357 Chestnut Street,
Needhan, Massachusetts

LOCATION	**Units**	**OUTFALL**
SAMPLING DATE		**6/22/2017**
General Chemistry		
pH (H)	SU	6.7
Nitrogen, Ammonia	mg/l	0.64
Total Hardness by SM 2340B		
Hardness	mg/l	79.5

Notes:
1. The sample was collected by Sanborn, Head & Associates, Inc. on the date indicated and analyzed by Alpha Analytical Laboratories, Inc. of Westborough, Massachusetts.
2. Abbreviations:
mg/l = milligrams per liter

FIGURES

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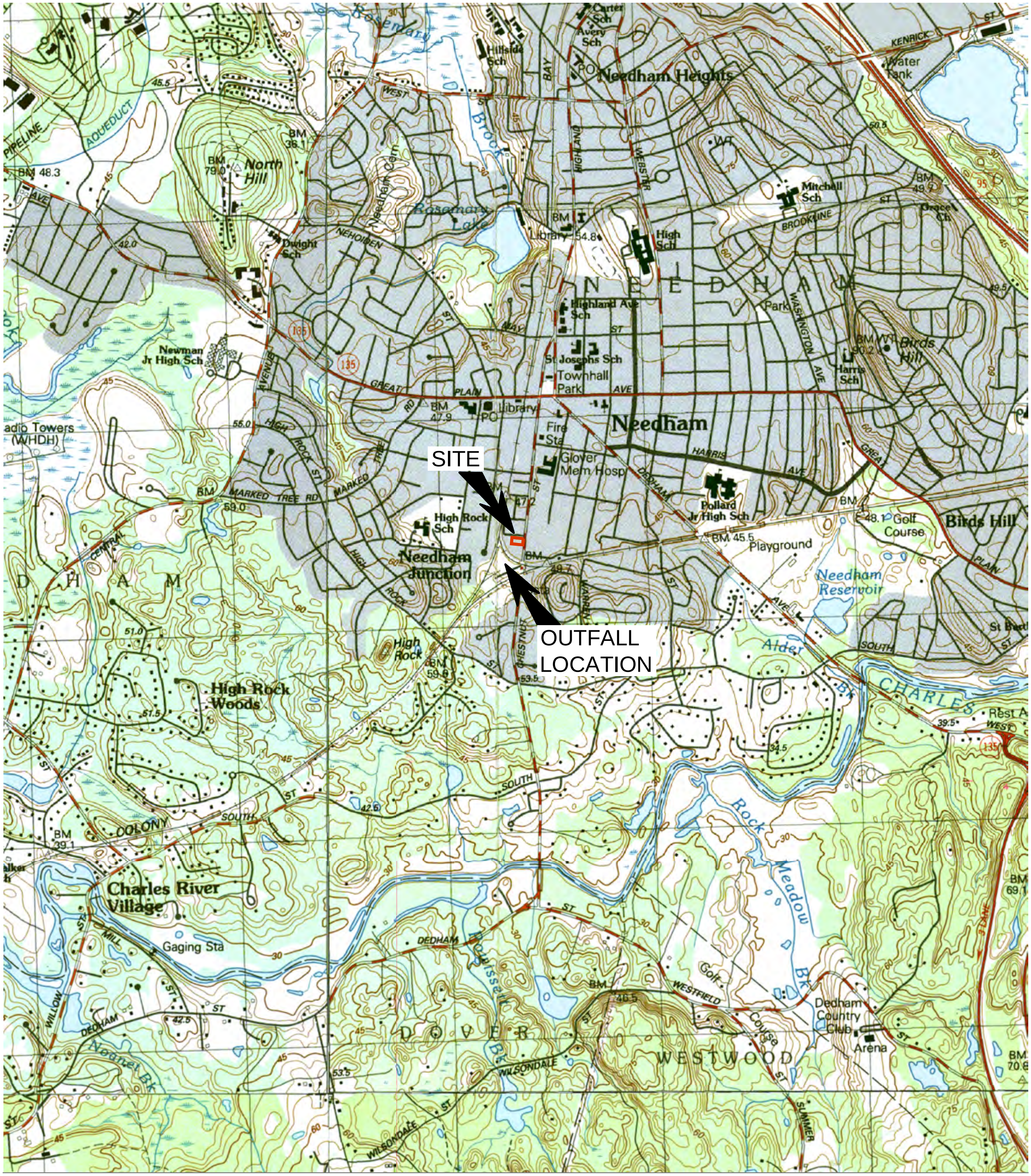

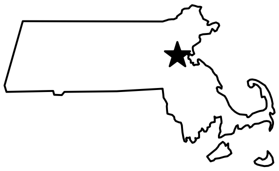

NOTES:
Base map was taken from the "Office of Geographic and Environmental Information (MassGIS), Commonwealth of Massachusetts Information Technology Division"
7.5 minute USGS Quadrangle Maps: Needham, Massachusetts, REV: 1987

Drawn By: C.Green
Designed By: D.DeWolfe
Reviewed By: M.Heil
Project No: 3894.00
Date: July 2017

SCALE: 1:25,000

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Figure 1

Locus Plan

Notice of Intent for
Remdiation General Permit

355-357 Chestnut Street
Needham, Massachusetts

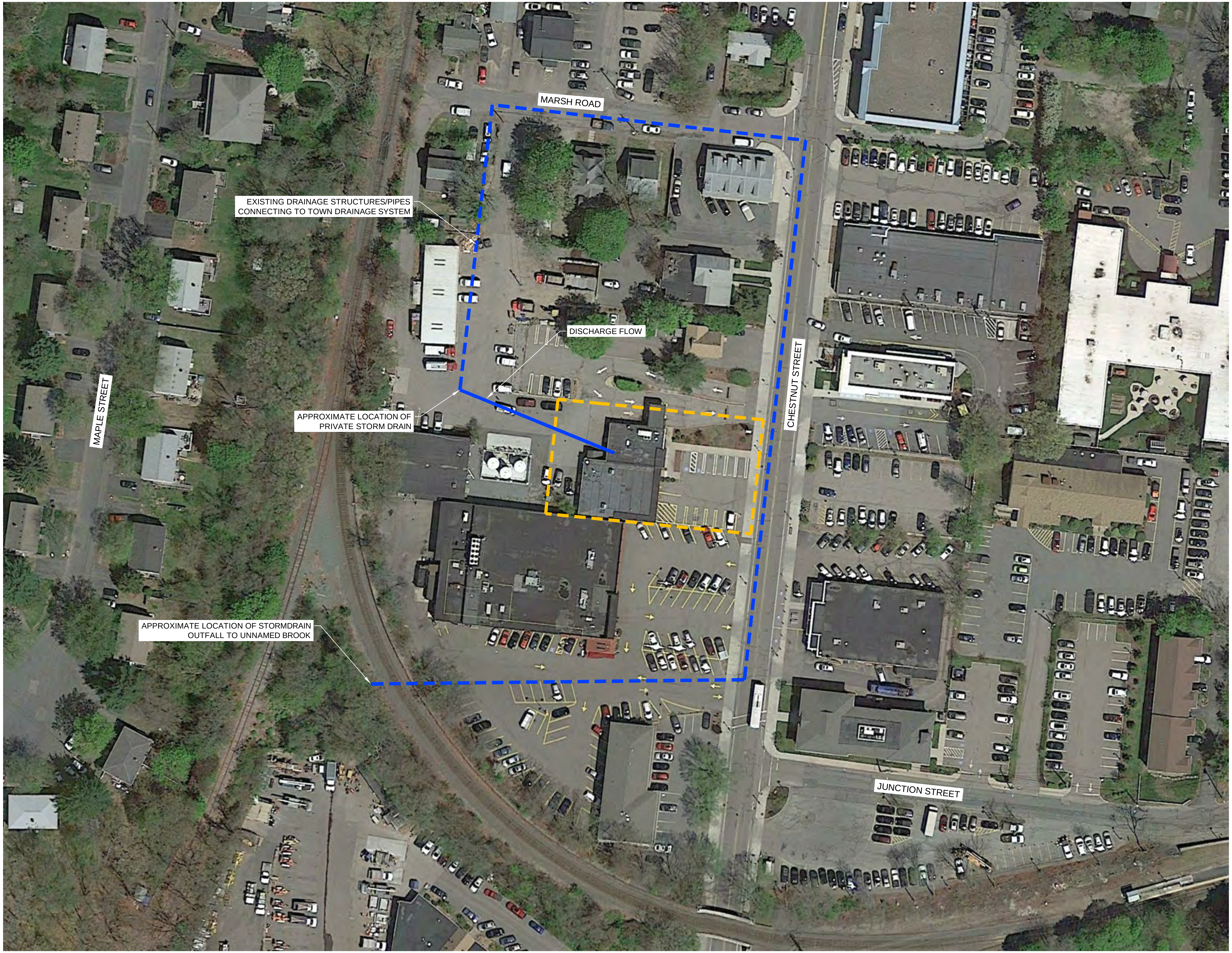

Figure No. 2

Site Plan

Notice of Intent for
Remediation General Permit

355-357 Chestnut Street
Needham, Massachusetts

Drawn By: C.Green
Designed By: D.DeWolfe
Reviewed By: M.Heil
Project No: 3894.00
Date: July 2017

Figure Narrative

The base map was taken from Google Earth.
Imagery date: (2016)

Legend

▬ ▬ Approximate Site boundary

N
W E
S

40 20 0 40 80 Feet

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Figure No. 3

Conceptual Groundwater Treatment Schematic

Notice of Intent for
Remediation General Permit

355-357 Chestnut Street
Needham, Massachusetts

Drawn By: C.Green
Designed By: D.DeWolfe
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Project No: 3894.00
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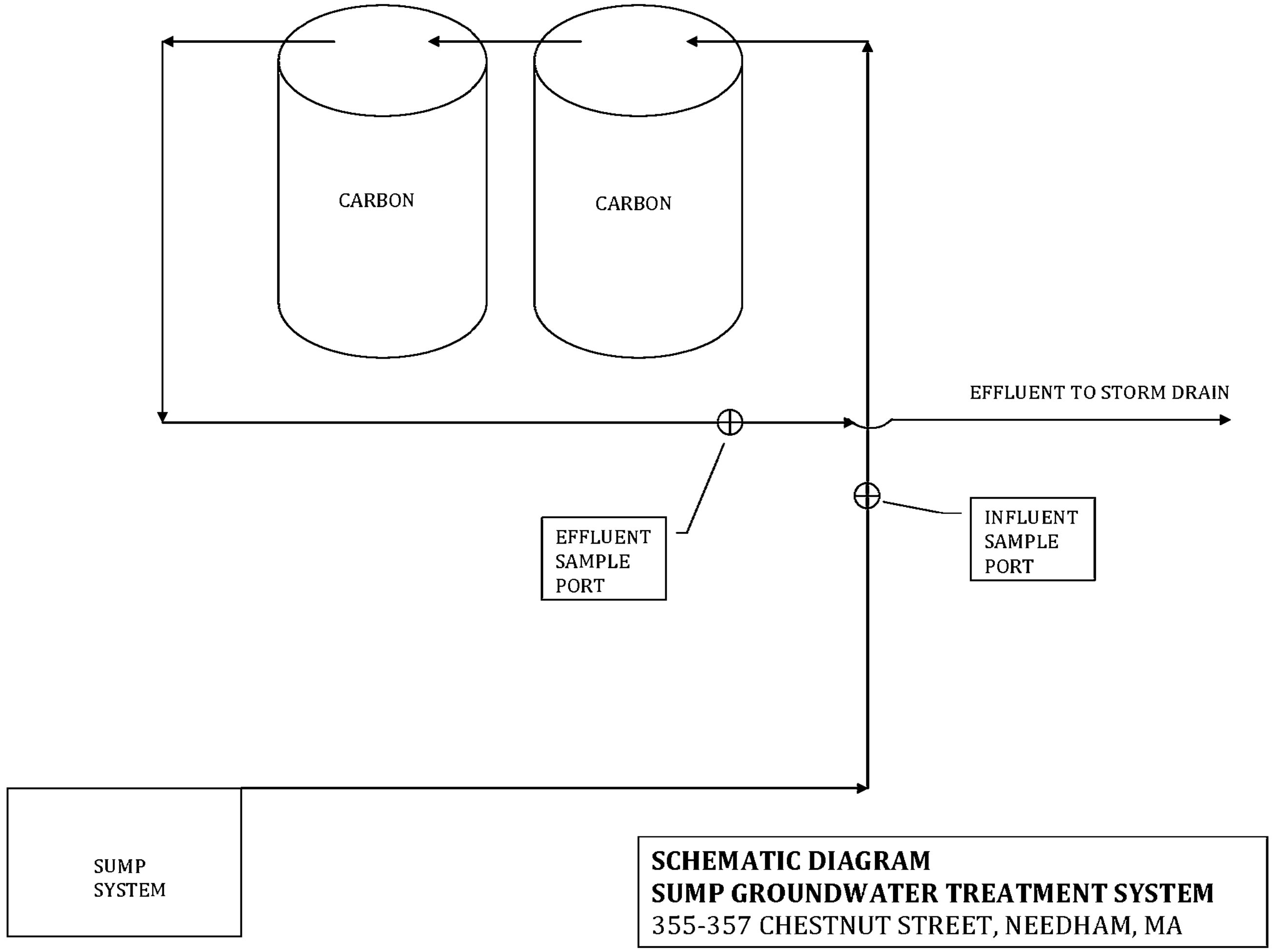

SCHEMATIC DIAGRAM
SUMP GROUNDWATER TREATMENT SYSTEM
355-357 CHESTNUT STREET, NEEDHAM, MA

NOT TO SCALE

SANBORN HEAD

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APPENDIX A

NOTICE OF INTENT FORM

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

A. General site information:

1. Name of site: 355 Chestnut Street	Site address: 355 Chestnut Street Street:		
	City: Needham	State: MA	Zip: 02492
2. Site owner Needham Oil Company dba Woodcock Realty Inc.	Contact Person: William Woodcock		
	Telephone: 617-692-0102	Email: W.Woodcock@comcast.net	
	Mailing address: P.O. Box 9207333 Street:		
Owner is (check one): ☐ Federal ☐ State/Tribal ■ Private ☐ Other; if so, specify:	City: Needham	State: MA	Zip: 02492
3. Site operator, if different than owner	Contact Person:		
	Telephone:	Email:	
	Mailing address: Street:		
	City:	State:	Zip:
4. NPDES permit number assigned by EPA: MAG910616 NPDES permit is (check all that apply: ■ RGP ☐ DGP ☐ CGP ☐ MSGP ☐ Individual NPDES permit ☐ Other; if so, specify:	5. Other regulatory program(s) that apply to the site (check all that apply): ■ MA Chapter 21e; list RTN(s): RTN 3-31855 ☐ NH Groundwater Management Permit or Groundwater Release Detection Permit:	☐ CERCLA ☐ UIC Program ☐ POTW Pretreatment ☐ CWA Section 404	

B. Receiving water information:

1. Name of receiving water(s):	Waterbody identification of receiving water(s):	Classification of receiving water(s):
unnamed tributary to Town Pond/Rosemary Lake	MA72-25	B

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

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

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

3. Indicate if the receiving water(s) is listed in the State's Integrated List of Waters (i.e., CWA Section 303(d)). Include which designated uses are impaired, and any pollutants indicated. Also, indicate if a final TMDL is available for any of the indicated pollutants. For more information, contact the appropriate State as noted in Part 4.6 of the RGP. Category 5 - nutrients, organic enrichment/low DO, turbidity, pathogens, suspended solids, taste, odor and color

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.	none - See App C
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 - See App C

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: 6/21/2017

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

C. Source water information:

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

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

2. Source water contaminants: vinyl chloride, tetrachloroethene, trichloroethene, cis-1,2-dichloroethene

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): Town of Needham Storm Drain Outfall #377	Outfall location(s): (Latitude, Longitude) 42.273661, -71.238616

Discharges enter the receiving water(s) via (check any that apply): ☐ Direct discharge to the receiving water ■ Indirect discharge, if so, specify:

The treated water will be discharged to a private storm drain system before entering the town drain and eventually discharging to the unnamed brook.

■ 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): existing discharge since May 2014, anticipated through April 2022

Indicate if the discharge is expected to occur over a duration of: ☐ less than 12 months ■ 12 months or more ☐ is an emergency discharge

Has the operator attached a site plan in accordance with the instructions in D, above? (check one): ■ Yes ☐ No

<table>
<tr><td>2. Activity Category: (check all that apply)</td><td colspan="2">3. Contamination Type Category: (check all that apply)</td></tr>
<tr><td rowspan="4">☐ I – Petroleum-Related Site Remediation
☐ II – Non-Petroleum-Related Site Remediation
☐ III – Contaminated Site Dewatering
☐ IV – Dewatering of Pipelines and Tanks
☐ V – Aquifer Pump Testing
☐ VI – Well Development/Rehabilitation
■ VII – Collection Structure Dewatering/Remediation
☐ VIII – Dredge-Related Dewatering</td><td colspan="2">a. If Activity Category I or II: (check all that apply)
☐ A. Inorganics
☐ B. Non-Halogenated Volatile Organic Compounds
☐ C. Halogenated Volatile Organic Compounds
☐ D. Non-Halogenated Semi-Volatile Organic Compounds
☐ E. Halogenated Semi-Volatile Organic Compounds
☐ F. Fuels Parameters</td></tr>
<tr><td colspan="2">b. If Activity Category III, IV, V, VI, VII or VIII: (check either G or H)</td></tr>
<tr><td>■ G. Sites with Known Contamination</td><td>☐ H. Sites with Unknown Contamination</td></tr>
<tr><td>c. If Category III-G, IV-G, V-G, VI-G, VII-G or VIII-G: (check all that apply)
☐ A. Inorganics
☐ B. Non-Halogenated Volatile Organic Compounds
■ C. Halogenated Volatile Organic Compounds
☐ D. Non-Halogenated Semi-Volatile Organic Compounds
☐ E. Halogenated Semi-Volatile Organic Compounds
☐ F. Fuels Parameters</td><td>d. If Category III-H, IV-H, V-H, VI-H, VII-H or VIII-H Contamination Type Categories A through F apply</td></tr>
</table>

4. Influent and Effluent Characteristics

Parameter	Known or believed absent	Known or believed present	# of samples	Test method (#)	Detection limit (µg/l)	Influent		Effluent Limitations	
						Daily maximum (µg/l)	Daily average (µg/l)	TBEL	WQBEL
A. Inorganics									
Ammonia	✔							Report mg/L	---
Chloride		✔	3	44, 300.0	5.00	83400	46800	Report µg/l	---
Total Residual Chlorine	✔							0.2 mg/L	11
Total Suspended Solids	✔							30 mg/L	---
Antimony	✔							206 µg/L	
Arsenic	✔							104 µg/L	
Cadmium	✔							10.2 µg/L	
Chromium III	✔							323 µg/L	
Chromium VI	✔							323 µg/L	
Copper	✔							242 µg/L	
Iron	✔							5,000 µg/L	
Lead	✔							160 µg/L	
Mercury	✔							0.739 µg/L	
Nickel	✔							1,450 µg/L	
Selenium	✔							235.8 µg/L	
Silver	✔							35.1 µg/L	
Zinc	✔							420 µg/L	
Cyanide	✔							178 mg/L	
B. Non-Halogenated VOCs									
Total BTEX	✔							100 µg/L	---
Benzene	✔							5.0 µg/L	---
1,4 Dioxane	✔							200 µg/L	---
Acetone	✔							7.97 mg/L	---
Phenol	✔							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	✔							4.4 µg/L	
1,2 Dichlorobenzene	✔							600 µg/L	---
1,3 Dichlorobenzene	✔							320 µg/L	---
1,4 Dichlorobenzene	✔							5.0 µg/L	---
Total dichlorobenzene	✔							763 µg/L in NH	---
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		✔	3	8260C	0.50	3.7	1.4	5.0 µg/L	---
Tetrachloroethylene		✔	3	8260C	0.50	38	19.7	5.0 µg/L	3.3
cis-1,2 Dichloroethylene		✔	3	8260C	0.50	0.81	0.44	70 µg/L	---
Vinyl Chloride		✔	3	8260C	1.0	ND	ND	2.0 µg/L	---
D. Non-Halogenated SVOCs									
Total Phthalates	✔		3	8270D	5.0	ND	ND	190 µg/L	
Diethylhexyl phthalate	✔		3	8270D	3.0	ND	ND	101 µg/L	
Total Group I PAHs	✔							1.0 µg/L	---
Benzo(a)anthracene	✔							As Total PAHs	
Benzo(a)pyrene	✔								
Benzo(b)fluoranthene	✔								
Benzo(k)fluoranthene	✔								
Chrysene	✔								
Dibenzo(a,h)anthracene	✔								
Indeno(1,2,3-cd)pyrene	✔								

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	✔							100 µg/L	---
Naphthalene	✔							20 µg/L	---
E. Halogenated SVOCs									
Total PCBs	✔							0.000064 µg/L	---
Pentachlorophenol	✔		3	8270D	10	ND	ND	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	
tert-Butyl Alcohol	✔							120 µg/L in MA 40 µg/L in NH	---
tert-Amyl Methyl Ether	✔							90 µg/L in MA 140 µg/L in NH	---
Other (i.e., pH, temperature, hardness, salinity, LC$_{50}$, additional pollutants present); if so, specify:									
pH			1	4500H		7.1	7.1		
Temperature			1	Field	-	21.4	21.4		
Hardness			1	3005A	660	30,700	30,700		

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.

Groundwater will be pumped from the sump to two 200-pound liquid phase carbon vessels in series prior to discharge.

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: Liquid Phase Carbon Adsorption

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: Carbon Vessels Is use of a flow meter feasible? (check one): ☒ Yes ☐ No, if so, provide justification:	10
Provide the proposed maximum effluent flow in gpm.	10
Provide the average effluent flow in gpm.	<0.5 gpm
If Activity Category IV applies, indicate the estimated total volume of water that will be discharged:	

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

F. Chemical and additive information

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

☐ 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:
None anticipated

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.

Supplemental information used to complete this NOI is provided as Appendix A through Appendix G. A copy of the original RGP application and authorization are included in Appendix H.

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

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

J. Certification requirement

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

BMPP certification statement: A BMPP meeting the requirements of this general permit will be developed and implemented.

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: *As Agent for Needham Oil Company dba Woodcock Realty, Inc., and not individually

Date: July 7, 2017

Print Name and Title: William Woodcock, Owner/Operator

APPENDIX B

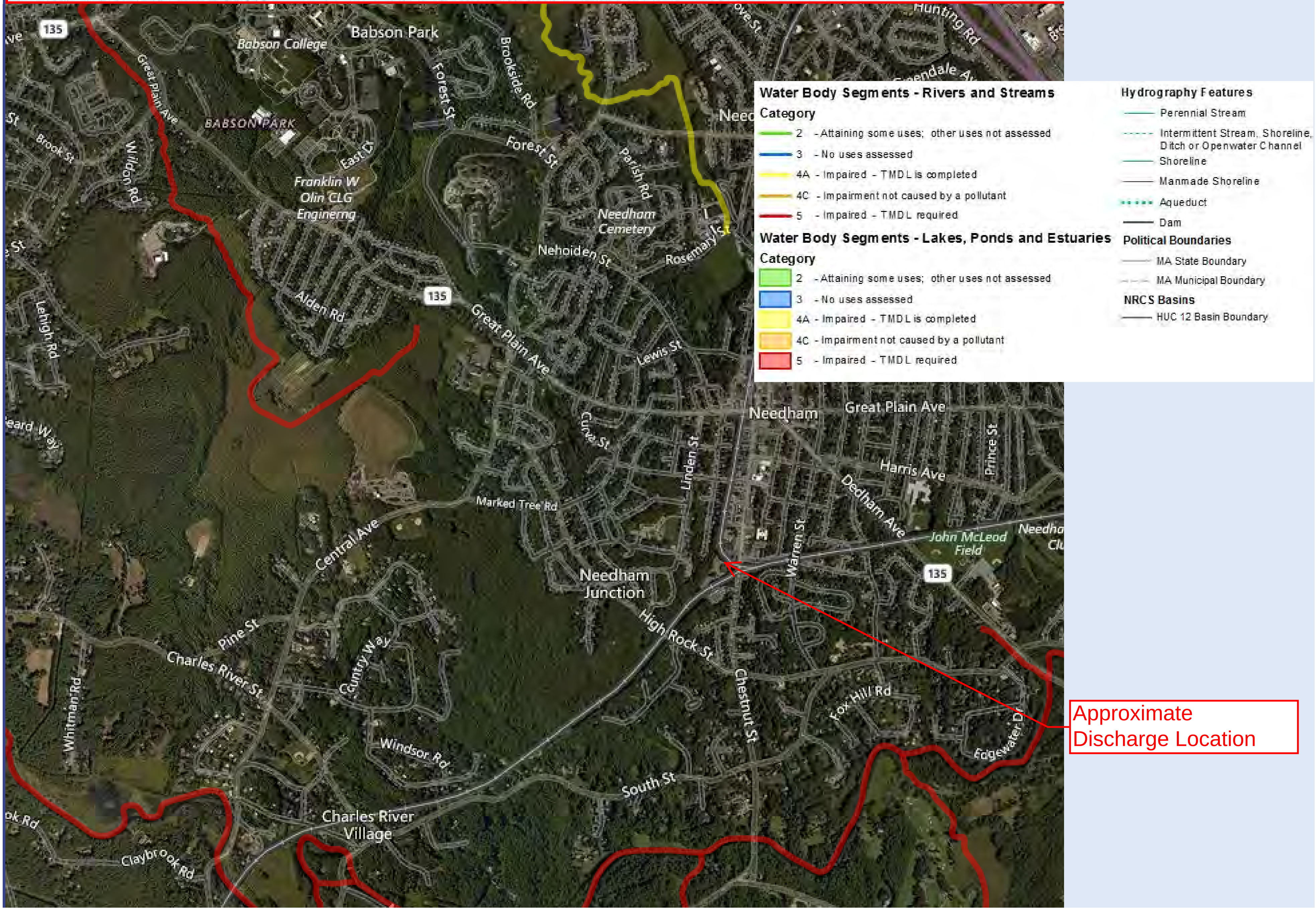
MASSACHSUETTS 2014 INTEGRATED LIST OF WATERS MAP

MassDEP Online Map Viewer

2014 Integrated List of Waters Map

Helpful Links:

- The Clean Water Act
- MassDEP Total Maximum Daily Loads



APPENDIX C

WQBEL CALCUATIONS AND SUPPORTING INFORMATION

Enter number values in green boxes below

Enter values in the units specified

↓

0	Q_R = Enter upstream flow in **MGD**
0.0006	Q_P = Enter discharge flow in **MGD**
0	Downstream 7Q10

Notes:

Freshwater: critical low flow equal to the 7Q10; enter alternate low flow if approved by the State
Saltwater (estuarine and marine): enter critical low flow if approved by the State; enter 0 if no entry
Discharge flow is equal to the design flow or 1 MGD, whichever is less
Optional entry for Q_r; leave 0 if no entry

Enter a dilution factor, if other than zero

↓

1

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

Enter values in the units specified

↓

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

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

↓

6.7	pH in **Standard Units**
22.9	Temperature in **°C**
0.64	Ammonia in **mg/L**
79.5	Hardness in **mg/L** $CaCO_3$
0	Salinity in **ppt**
0	Antimony in **µg/L**
0	Arsenic in **µg/L**
0	Cadmium in **µg/L**
0	Chromium III in **µg/L**
0	Chromium VI in **µg/L**
0	Copper in **µg/L**
0	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**
0	Zinc in **µg/L**

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

Enter **influent** concentrations in the units specified

↓

0	TRC in **µg/L**
0	Ammonia in **mg/L**
0	Antimony in **µg/L**
0	Arsenic in **µg/L**
0	Cadmium in **µg/L**
0	Chromium III in **µg/L**
0	Chromium VI in **µg/L**
0	Copper in **µg/L**
0	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**
0	Zinc in **µg/L**
0	Cyanide in **µg/L**
0	Phenol in **µg/L**
0	Carbon Tetrachloride in **µg/L**
38	Tetrachloroethylene in **µg/L**
0	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**

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

0 Methyl-tert butyl ether in **µg/L**

I. Dilution Factor Calculation Method

A. 7Q10

Refer to Appendix V for determining critical low flow; must be approved by State before use in calculations.

B. Dilution Factor

Calculated as follows:

$$Df = \frac{Q_R + Q_P}{Q_P}$$

Q_R = 7Q10 in MGD

Q_P = Discharge flow, in MGD

II. Effluent Limitation Calculation Method

A. Calculate Water Quality Criterion:

Step 1. Downstream hardness, calculated as follows:

$$C_r = \frac{Q_d C_d + Q_s C_s}{Q_r}$$

C_r = Downstream hardness in mg/L

Q_d = Discharge flow in MGD

C_d = Discharge hardness in mg/L

Q_s = Upstream flow (7Q10) in MGD

C_s = Upstream (receiving water) hardness in mg/L

Q_r = Downstream receiving water flow in MGD

Step 2. Total recoverable water quality criteria for hardness-dependent metals, calculated as follows:

$$\text{Total Recoverable Criteria} = \exp\{m_c\,[\ln(h)] + b_c\}$$

m_c = Pollutant-specific coefficient (m_a for silver)

b_c = Pollutant-specific coefficient (b_a for silver)

ln = Natural logarithm

h = Hardness calculated in Step 1

Step 3. Total recoverable water quality criteria for non-hardness-dependent metals, calculated as follows:

$$\text{WQC in } \mu\text{g/L} = \frac{\text{dissolved WQC in } \mu\text{g/L}}{\text{dissolved to total recoverable factor}}$$

B. Calculate WQBEL:

Step 1. WQBEL calculated as follows for parameter sampled in and detected in the receiving water:

$$C_d = \frac{Q_r\,C_r - Q_s C_s}{Q_d}$$

C_r = Water quality criterion in µg/L

Q_d = Discharge flow in MGD

C_d = WQBEL in µg/L

Q_s = Upstream flow (7Q10) in MGD

C_s = Ustream (receiving water) concentration in µg/L

Q_r = Downstream receiving water flow in MGD

Step 2. WQBEL calculated as follows for parameter not sampled in or not detected in receiving water:

$$C_d = (Q_r/Q_d) \times C_r$$

C_r = Water quality criterion in µg/L

Q_d = Discharge flow in MGD

Q_r = Downstream receiving water flow in MGD

C. Determine if a WQBEL applies:

Step 1. For parameter sampled in and detected in receiving water, downstream concentrations calculated as follows:

$$C_r = \frac{Q_dC_d + Q_sC_s}{Q_r}$$

C_r = Downstream concentration in µg/L

Q_d = Discharge flow in MGD

C_d = Influent concentration in µg/L

Q_s = Upstream flow (7Q10) in MGD

C_s = Upstream (receiving water) concentration in µg/L

Q_r = Downstream receiving water flow in MGD

The WQBEL applies if:

1) the projected downstream concentration calculated in accordance with Step 1, above, and the discharge concentration of a parameter are greater than the WQC calculated for that parameter in accordance with II.A, above

AND

2) the WQBEL determined for that parameter in accordance with II.B, above, is less than the TBEL in Part 2.1.1 of the RGP for that parameter. Otherwise, the TBEL in Part 2.1.1

of the RGP for that parameter applies.

Step 2. For a parameter not sampled in or not detected in receiving water, the WQBEL applies if:

1) the discharge concentration of a parameter is greater than the WQBEL determined for that parameter in accordance with II.A or II.B, above;

AND

2) the WQBEL determined for that parameter in accordance with II.A or II.B, above is less than the TBEL in Part 2.1.1 of the RGP for that parameter. Otherwise, the TBEL in

Part 2.1.1 of the RGP for that parameter applies.

Dilution Factor 1.0

A. Inorganics	TBEL applies if bolded		WQBEL applies if bolded		Compliance Level applies if shown	
Ammonia	**Report**	mg/L	---			
Chloride	**Report**	µg/L	---			
Total Residual Chlorine	0.2	mg/L	**11**	µg/L	50	µg/L
Total Suspended Solids	**30**	mg/L	---			
Antimony	**206**	µg/L	640	µg/L		
Arsenic	**104**	µg/L	10	µg/L		
Cadmium	**10.2**	µg/L	0.1128	µg/L		
Chromium III	**323**	µg/L	32.8	µg/L		
Chromium VI	**323**	µg/L	11.4	µg/L		
Copper	**242**	µg/L	3.4	µg/L		
Iron	**5000**	µg/L	1000	µg/L		
Lead	**160**	µg/L	0.71	µg/L		
Mercury	**0.739**	µg/L	0.91	µg/L		
Nickel	**1450**	µg/L	19.2	µg/L		
Selenium	**235.8**	µg/L	5.0	µg/L		
Silver	**35.1**	µg/L	0.5	µg/L		
Zinc	**420**	µg/L	44.1	µg/L		
Cyanide	**178**	mg/L	5.2	µg/L	---	µg/L
B. Non-Halogenated VOCs						
Total BTEX	**100**	µg/L	---			
Benzene	**5.0**	µg/L	---			
1,4 Dioxane	**200**	µg/L	---			
Acetone	**7970**	µg/L	---			
Phenol	**1,080**	µg/L	300	µg/L		
C. Halogenated VOCs						
Carbon Tetrachloride	**4.4**	µg/L	1.6	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	**3.3**	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	2.2	µg/L		

Total Group I Polycyclic Aromatic Hydrocarbons	**1.0**	µg/L	---			
Benzo(a)anthracene	**1.0**	µg/L	0.0038	µg/L	---	µg/L
Benzo(a)pyrene	**1.0**	µg/L	0.0038	µg/L	---	µg/L
Benzo(b)fluoranthene	**1.0**	µg/L	0.0038	µg/L	---	µg/L
Benzo(k)fluoranthene	**1.0**	µg/L	0.0038	µg/L	---	µg/L
Chrysene	**1.0**	µg/L	0.0038	µg/L	---	µg/L
Dibenzo(a,h)anthracene	**1.0**	µg/L	0.0038	µg/L	---	µg/L
Indeno(1,2,3-cd)pyrene	**1.0**	µg/L	0.0038	µg/L	---	µg/L
Total Group II Polycyclic Aromatic Hydrocarbons	**100**	µg/L	---			
Naphthalene	**20**	µg/L	---			
E. Halogenated SVOCs						
Total Polychlorinated Biphenyls	**0.000064**	µg/L	---		0.5	µg/L
Pentachlorophenol	**1.0**	µg/L	---			
F. Fuels Parameters						
Total Petroleum Hydrocarbons	**5.0**	mg/L	---			
Ethanol	**Report**	mg/L	---			
Methyl-tert-Butyl Ether	**70**	µg/L	20	µg/L		
tert-Butyl Alcohol	**120**	µg/L	---			
tert-Amyl Methyl Ether	**90**	µg/L	---			

StreamStats Report

Region ID:

MA

Workspace ID:

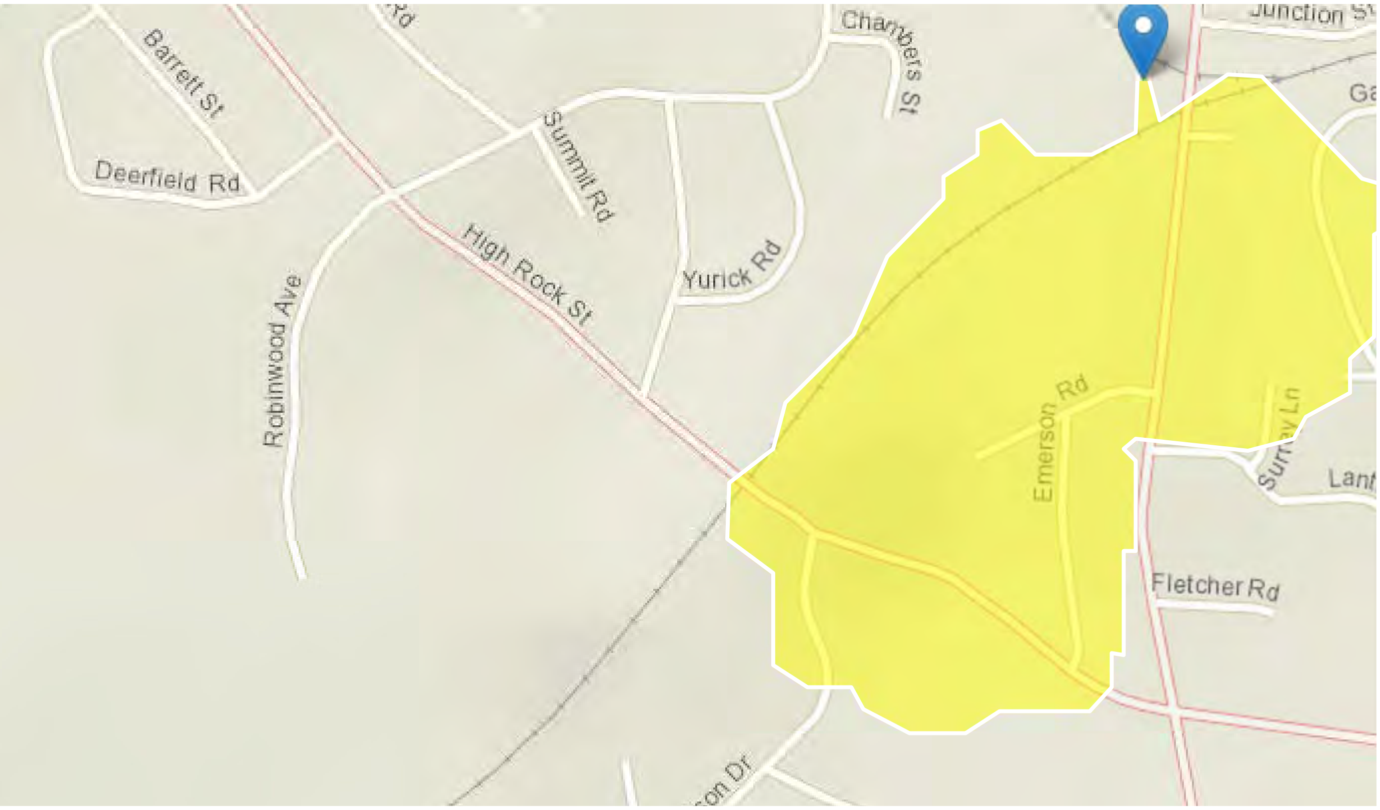
MA20170621090506485000

Clicked Point (Latitude, Longitude):

42.27280, -71.23859

Time:

2017-06-21 09:05:47 -0400



Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	0.0762	square miles
PCTSNDGRV	Percentage of land surface underlain by sand and gravel deposits	11.1	percent
FOREST	Percentage of area covered by forest	13.28	percent
MAREGION	Region of Massachusetts 0 for Eastern 1 for Western	0	dimensionless

Probability Statistics Parameters [100 Percent (0.0762 square miles) Perennial Flow Probability]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	0.0762	square miles	0.01	1.99
PCTSNDGRV	Percent Underlain By Sand And Gravel	11.1	percent	0	100
FOREST	Percent Forest	13.28	percent	0	100
MAREGION	Massachusetts Region	0	dimensionless	0	1

Probability Statistics Flow Report [100 Percent (0.0762 square miles) Perennial Flow Probability]

PIl: Prediction Interval-Lower, PIu: Prediction Interval-Upper, SEp: Standard Error of Prediction, SE: Standard Error (other -- see report)

Statistic	Value	Unit	PIl	PIu	PC
Probability Stream Flowing Perennially	0.519	dim			71

Probability Statistics Citations

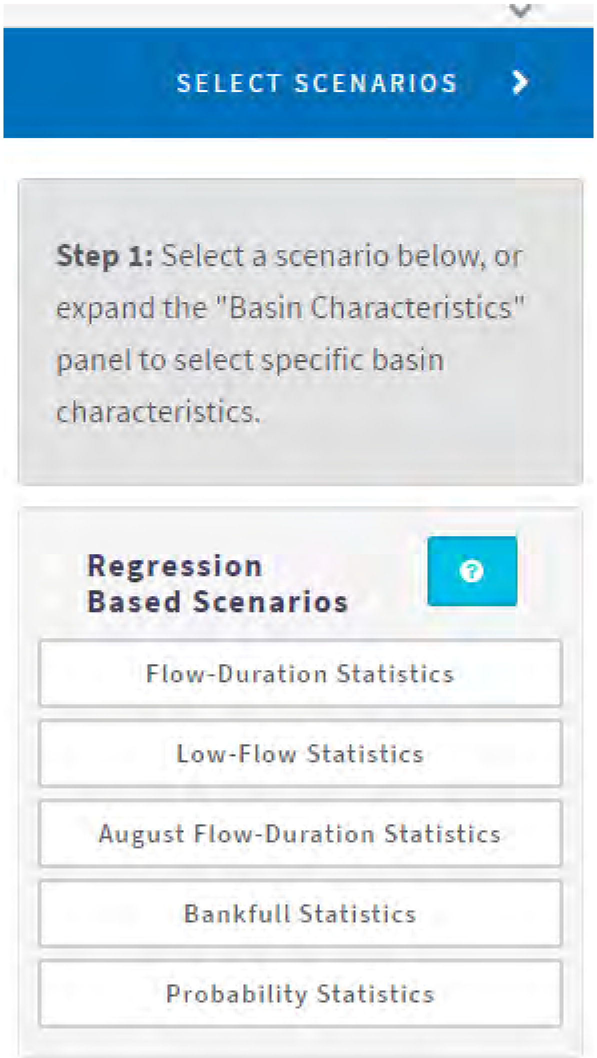
Bent, G.C., and Steeves, P.A.,2006, A revised logistic regression equation and an automated procedure for mapping the probability of a stream flowing perennially in Massachusetts: U.S. Geological Survey Scientific Investigations Report 2006–5031, 107 p. (http://pubs.usgs.gov/sir/2006/5031/pdfs/SIR_2006-5031rev.pdf)

From: Vakalopoulos, Catherine (DEP)
To: Danielle M. DeWolfe
Subject: RE: Needham, MA RGP
Date: Tuesday, June 20, 2017 4:21:18 PM
Attachments: image001.png

Hi Danielle,
Yes, you should be looking for the 7Q10 where the effluent daylights. I didn't see a StreamStats report attached to your message but though sometimes StreamStats can be buggy and require multiple attempts, it sounds like you are getting errors because it's a perennial stream. If you can get StreamStats to work, there is a way to see if you're dealing with a perennial stream - when selecting scenarios (see screen snapshot), select "Probability Statistics" and you will get a probablility that the stream flows perennially.

You can send me the lat/long where it daylights and I can give it a try if you'd like or you can just go ahead and use a DF of 1 in your NOI.

Cathy



Step 1: Select a scenario below, or expand the "Basin Characteristics" panel to select specific basin characteristics.

Cathy Vakalopoulos, Massachusetts Department of Environmental Protection

1 Winter St., Boston, MA 02108, 617-348-4026

From: Danielle M. DeWolfe [mailto:DDewolfe@sanbornhead.com]
Sent: Tuesday, June 20, 2017 3:32 PM
To: Vakalopoulos, Catherine (DEP)
Subject: Needham, MA RGP

Good afternoon Cathy,

We are working on preparing an NOI for an existing discharge associated with a property on Chestnut Street in Needham, MA. According to the new RGP guidelines, we are looking to get DEP approval for the 7Q10 flow of the receiving water for our discharge. We do not anticipate applying for the use of a dilution factor at this time. The treatment system effluent is discharging into the Town of Needham storm drain system which discharges to an “unnamed brook” via an outfall located approximately 300 feet to the southeast of the site between elevated train tracks.

Based on our site observations, the unnamed brook appears to be a seasonal brook, and upon only standing water was observed during our most recent site visit. Further, I have attached the StreamStats output for the unnamed brook which does not contain the calculated 7Q10 value. Instead I am getting an error message that no results were returned.

This location is the immediate discharge point, or first point where the effluent daylights. Is this where we should be looking at 7Q10 values and collecting our receiving water sample?

Thank you in advance for your assistance on this. Please let me know if you have any questions for require further information.

-Danielle

--

Danielle DeWolfe
Project Engineer

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www.sanbornhead.com

Click here to follow us on *LinkedIn* /*Twitter* / *Facebook*

APPENDIX D

ANALYTICAL DATA REPORTS

ANALYTICAL REPORT

Lab Number:	L1711216
Client:	Sanborn, Head & Associates, Inc. 1 Technology Park Drive Westford, MA 01886
ATTN:	Patrick Malone
Phone:	(978) 392-0900
Project Name:	NEEDHAM
Project Number:	3894.00
Report Date:	04/17/17

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

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

Project Name: NEEDHAM
Project Number: 3894.00

Lab Number: L1711216
Report Date: 04/17/17

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L1711216-01	EFFLUENT	WATER	NEEDHAM, MA	04/10/17 15:25	04/11/17
L1711216-02	INFLUENT	WATER	NEEDHAM, MA	04/10/17 15:18	04/11/17
L1711216-03	TRIP BLANK	WATER	NEEDHAM, MA	12/19/16 00:00	04/11/17

Case Narrative

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

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

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

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

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

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

Case Narrative (continued)

Sample Receipt

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

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

Authorized Signature: A Naik Amita Naik

Title: Technical Director/Representative

Date: 04/17/17

ORGANICS

VOLATILES

SAMPLE RESULTS

Lab ID:	L1711216-01	Date Collected:	04/10/17 15:25
Client ID:	EFFLUENT	Date Received:	04/11/17
Sample Location:	NEEDHAM, MA	Field Prep:	Not Specified
Matrix:	Water		
Analytical Method:	1,8260C		
Analytical Date:	04/15/17 03:05		
Analyst:	PD		

Parameter	**Result**	**Qualifier**	**Units**	**RL**	**MDL**	**Dilution Factor**
Volatile Organics by GC/MS - Westborough Lab						
Tetrachloroethene	ND		ug/l	0.50	--	1
Vinyl chloride	ND		ug/l	1.0	--	1
Trichloroethene	ND		ug/l	0.50	--	1
cis-1,2-Dichloroethene	ND		ug/l	0.50	--	1

Surrogate	**% Recovery**	**Qualifier**	**Acceptance Criteria**
1,2-Dichloroethane-d4	95		70-130
Toluene-d8	100		70-130
4-Bromofluorobenzene	87		70-130
Dibromofluoromethane	96		70-130

SAMPLE RESULTS

Lab ID:	L1711216-02	Date Collected:	04/10/17 15:18
Client ID:	INFLUENT	Date Received:	04/11/17
Sample Location:	NEEDHAM, MA	Field Prep:	Not Specified
Matrix:	Water		
Analytical Method:	1,8260C		
Analytical Date:	04/15/17 03:38		
Analyst:	PD		

Parameter	**Result**	**Qualifier**	**Units**	**RL**	**MDL**	**Dilution Factor**
Volatile Organics by GC/MS - Westborough Lab						
Tetrachloroethene	38		ug/l	0.50	--	1
Vinyl chloride	ND		ug/l	1.0	--	1
Trichloroethene	3.7		ug/l	0.50	--	1
cis-1,2-Dichloroethene	0.81		ug/l	0.50	--	1

Surrogate	**% Recovery**	**Qualifier**	**Acceptance Criteria**
1,2-Dichloroethane-d4	97		70-130
Toluene-d8	107		70-130
4-Bromofluorobenzene	92		70-130
Dibromofluoromethane	97		70-130

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 04/14/17 22:05
Analyst: PD

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01-02 Batch: WG994849-5					
Tetrachloroethene	ND		ug/l	0.50	--
Vinyl chloride	ND		ug/l	1.0	--
Trichloroethene	ND		ug/l	0.50	--
cis-1,2-Dichloroethene	ND		ug/l	0.50	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	96		70-130
Toluene-d8	99		70-130
4-Bromofluorobenzene	86		70-130
Dibromofluoromethane	96		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: NEEDHAM

Project Number: 3894.00

Lab Number: L1711216

Report Date: 04/17/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-02 Batch: WG994849-3 WG994849-4								
Tetrachloroethene	110		100		70-130	10		20
Vinyl chloride	99		91		55-140	8		20
Trichloroethene	110		97		70-130	13		25
cis-1,2-Dichloroethene	100		95		70-130	5		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	100		99		70-130
Toluene-d8	104		105		70-130
4-Bromofluorobenzene	90		91		70-130
Dibromofluoromethane	99		97		70-130

SEMIVOLATILES

SAMPLE RESULTS

Lab ID: L1711216-01
Client ID: EFFLUENT
Sample Location: NEEDHAM, MA
Matrix: Water
Analytical Method: 1,8270D
Analytical Date: 04/17/17 10:59
Analyst: KV

Date Collected: 04/10/17 15:25
Date Received: 04/11/17
Field Prep: Not Specified
Extraction Method:EPA 3510C
Extraction Date: 04/13/17 15:04

Parameter	**Result**	**Qualifier**	**Units**	**RL**	**MDL**	**Dilution Factor**
Semivolatile Organics by GC/MS - Westborough Lab						
Bis(2-ethylhexyl)phthalate	ND		ug/l	3.0	--	1
Butyl benzyl phthalate	ND		ug/l	5.0	--	1
Di-n-butylphthalate	ND		ug/l	5.0	--	1
Di-n-octylphthalate	ND		ug/l	5.0	--	1
Diethyl phthalate	ND		ug/l	5.0	--	1
Dimethyl phthalate	ND		ug/l	5.0	--	1
Pentachlorophenol	ND		ug/l	10	--	1

Surrogate	**% Recovery**	**Qualifier**	**Acceptance Criteria**
2-Fluorophenol	44		21-120
Phenol-d6	31		10-120
Nitrobenzene-d5	79		23-120
2-Fluorobiphenyl	81		15-120
2,4,6-Tribromophenol	78		10-120
4-Terphenyl-d14	89		41-149

SAMPLE RESULTS

Lab ID:	L1711216-02	Date Collected:	04/10/17 15:18
Client ID:	INFLUENT	Date Received:	04/11/17
Sample Location:	NEEDHAM, MA	Field Prep:	Not Specified
Matrix:	Water	Extraction Method:	EPA 3510C
Analytical Method:	1,8270D	Extraction Date:	04/13/17 15:04
Analytical Date:	04/17/17 11:25		
Analyst:	KV		

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Bis(2-ethylhexyl)phthalate	ND		ug/l	3.0	--	1
Butyl benzyl phthalate	ND		ug/l	5.0	--	1
Di-n-butylphthalate	ND		ug/l	5.0	--	1
Di-n-octylphthalate	ND		ug/l	5.0	--	1
Diethyl phthalate	ND		ug/l	5.0	--	1
Dimethyl phthalate	ND		ug/l	5.0	--	1
Pentachlorophenol	ND		ug/l	10	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	37		21-120
Phenol-d6	27		10-120
Nitrobenzene-d5	72		23-120
2-Fluorobiphenyl	74		15-120
2,4,6-Tribromophenol	62		10-120
4-Terphenyl-d14	81		41-149

Project Name:	NEEDHAM	**Lab Number:**	L1711216
Project Number:	3894.00	**Report Date:**	04/17/17

Method Blank Analysis
Batch Quality Control

Analytical Method:	1,8270D	Extraction Method:	EPA 3510C
Analytical Date:	04/17/17 10:34	Extraction Date:	04/13/17 15:04
Analyst:	KV		

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 01-02 Batch: WG993988-1					
Bis(2-ethylhexyl)phthalate	ND		ug/l	3.0	--
Butyl benzyl phthalate	ND		ug/l	5.0	--
Di-n-butylphthalate	ND		ug/l	5.0	--
Di-n-octylphthalate	ND		ug/l	5.0	--
Diethyl phthalate	ND		ug/l	5.0	--
Dimethyl phthalate	ND		ug/l	5.0	--
Pentachlorophenol	ND		ug/l	10	--

Tentatively Identified Compounds		
No Tentatively Identified Compounds	ND	ug/l

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	46		21-120
Phenol-d6	31		10-120
Nitrobenzene-d5	76		23-120
2-Fluorobiphenyl	78		15-120
2,4,6-Tribromophenol	86		10-120
4-Terphenyl-d14	89		41-149

Lab Control Sample Analysis

Batch Quality Control

Project Name: NEEDHAM
Lab Number: L1711216
Project Number: 3894.00
Report Date: 04/17/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-02 Batch: WG993988-2 WG993988-3								
Bis(2-ethylhexyl)phthalate	94		101		40-140	7		30
Butyl benzyl phthalate	101		106		40-140	5		30
Di-n-butylphthalate	93		97		40-140	4		30
Di-n-octylphthalate	89		95		40-140	7		30
Diethyl phthalate	88		94		40-140	7		30
Dimethyl phthalate	86		91		40-140	6		30
Pentachlorophenol	84		93		9-103	10		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2-Fluorophenol	54		60		21-120
Phenol-d6	39		44		10-120
Nitrobenzene-d5	95		105		23-120
2-Fluorobiphenyl	78		82		15-120
2,4,6-Tribromophenol	98		103		10-120
4-Terphenyl-d14	91		96		41-149

INORGANICS
&
MISCELLANEOUS

SAMPLE RESULTS

Lab ID: L1711216-01
Client ID: EFFLUENT
Sample Location: NEEDHAM, MA
Matrix: Water
Date Collected: 04/10/17 15:25
Date Received: 04/11/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Anions by Ion Chromatography - Westborough Lab										
Chloride	87.5		mg/l	5.00	--	10	-	04/13/17 23:49	44,300.0	AU

SAMPLE RESULTS

Lab ID:	L1711216-02	Date Collected:	04/10/17 15:18
Client ID:	INFLUENT	Date Received:	04/11/17
Sample Location:	NEEDHAM, MA	Field Prep:	Not Specified
Matrix:	Water		

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Anions by Ion Chromatography - Westborough Lab										
Chloride	83.4		mg/l	5.00	--	10	-	04/14/17 00:01	44,300.0	AU

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Anions by Ion Chromatography - Westborough Lab for sample(s): 01-02 Batch: WG994464-1										
Chloride	ND		mg/l	0.500	--	1	-	04/13/17 17:37	44,300.0	AU

Lab Control Sample Analysis

Batch Quality Control

Project Name: NEEDHAM

Project Number: 3894.00

Lab Number: L1711216

Report Date: 04/17/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Anions by Ion Chromatography - Westborough Lab Associated sample(s): 01-02 Batch: WG994464-2								
Chloride	104		-		90-110	-		

Matrix Spike Analysis
Batch Quality Control

Project Name: NEEDHAM
Project Number: 3894.00

Lab Number: L1711216
Report Date: 04/17/17

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Anions by Ion Chromatography - Westborough Lab Associated sample(s): 01-02 QC Batch ID: WG994464-3 QC Sample: L1711505-01 Client ID: MS Sample												
Chloride	86.8	20	108	106		-	-		90-110	-		18

Lab Duplicate Analysis

Batch Quality Control

Project Name: NEEDHAM

Project Number: 3894.00

Lab Number: L1711216

Report Date: 04/17/17

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Anions by Ion Chromatography - Westborough Lab Associated sample(s): 01-02 QC Batch ID: WG994464-4 QC Sample: L1711505-01 Client ID: DUP Sample						
Chloride	86.8	87.6	mg/l	1		18

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent

Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L1711216-01A	Vial HCl preserved	A	N/A	5.4	Y	Absent	8260(14)
L1711216-01B	Vial HCl preserved	A	N/A	5.4	Y	Absent	8260(14)
L1711216-01C	Vial HCl preserved	A	N/A	5.4	Y	Absent	8260(14)
L1711216-01D	Plastic 60ml unpreserved	A	7	5.4	Y	Absent	CL-300(28)
L1711216-01E	Amber 1000ml unpreserved	A	7	5.4	Y	Absent	8270TCL(7)
L1711216-01F	Amber 1000ml unpreserved	A	7	5.4	Y	Absent	8270TCL(7)
L1711216-02A	Vial HCl preserved	A	N/A	5.4	Y	Absent	8260(14)
L1711216-02B	Vial HCl preserved	A	N/A	5.4	Y	Absent	8260(14)
L1711216-02C	Vial HCl preserved	A	N/A	5.4	Y	Absent	8260(14)
L1711216-02D	Plastic 60ml unpreserved	A	7	5.4	Y	Absent	CL-300(28)
L1711216-02E	Amber 1000ml unpreserved	A	7	5.4	Y	Absent	8270TCL(7)
L1711216-02F	Amber 1000ml unpreserved	A	7	5.4	Y	Absent	8270TCL(7)
L1711216-03A	Vial HCl preserved	A	N/A	5.4	Y	Absent	HOLD-8260(14)
L1711216-03B	Vial HCl preserved	A	N/A	5.4	Y	Absent	HOLD-8260(14)

*Values in parentheses indicate holding time in days

GLOSSARY

Acronyms

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

Footnotes

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

Terms

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

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

Data Qualifiers

A	- Spectra identified as "Aldol Condensation Product".
B	- The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the

Data Qualifiers

reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

C	- Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.
D	- Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.
E	- Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.
G	- The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.
H	- The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.
I	- The lower value for the two columns has been reported due to obvious interference.
M	- Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.
NJ	- Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.
P	- The RPD between the results for the two columns exceeds the method-specified criteria.
Q	- The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)
R	- Analytical results are from sample re-analysis.
RE	- Analytical results are from sample re-extraction.
S	- Analytical results are from modified screening analysis.
J	- Estimated value. This represents an estimated concentration for Tentatively Identified Compounds (TICs).
ND	- Not detected at the reporting limit (RL) for the sample.

REFERENCES

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

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

LIMITATION OF LIABILITIES

Certification Information

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

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

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

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

Westborough Facility:

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

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

Mansfield Facility:

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

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

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

ALPHA ANALYTICAL
World Class Chemistry

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

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

CHAIN OF CUSTODY

PAGE 1 OF 1

Date Rec'd in Lab: 4/11/17

ALPHA Job #: L1711216

Client Information

Client: Sanborn Head
Address: 1 Tech Park Dr
Westford, MA
Phone: 978 392 0900
Email: pmalone@sanbornhead.com

Additional Project Information:

Project Information

Project Name: Needham
Project Location: Needham, MA
Project #: 3894.00
Project Manager: Pat Malone
ALPHA Quote #:

Turn-Around Time

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

Date Due:

Report Information - Data Deliverables

☒ ADEx ☒ EMAIL

Billing Information

☒ Same as Client info PO #:

Regulatory Requirements & Project Information Requirements

☐ Yes ☐ No MA MCP Analytical Methods ☐ Yes ☐ No CT RCP Analytical Methods
☐ Yes ☐ No Matrix Spike Required on this SDG? (Required for MCP Inorganics)
☐ Yes ☐ No GW1 Standards (Info Required for Metals & EPH with Targets)
☒ Yes ☐ No NPDES RGP
☐ Other State /Fed Program Criteria

ANALYSIS

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler Initials	VOC: ☐ 8260 ☐ 624 ☐ 524.2	SVOC: ☐ ABN ☐ PAH	METALS: ☐ MCP 13 ☐ MCP 14 ☐ RCP 15	METALS: ☐ RCRA5 ☐ RCRA8 ☐ PP13	EPH: ☐ Ranges & Targets ☐ Ranges Only	VPH: ☐ Ranges & Targets ☐ Ranges Only	☐ PCB ☐ PEST	TPH: ☐ Quant Only ☐ Fingerprint	cVOC - Report only PCE, TCE, C-DCE, VC	Chloride	Pentachlorophenol	Total Phthalates	Bis-2-ethylhexyl phthalate		Sample Comments	TOTAL # BOTTLES
11216-01	Effluent	4/10/17	15:25	GW	EDB									X	X	X	X	X			6
02	Influent	↓	15:18	↓	↓									X	X	X	X	X			6

SAMPLE INFO
Filtration
☐ Field
☐ Lab to do
Preservation
☐ Lab to do

Container Type									V	P	A	A	A	
Preservative									B	A	A	A	A	

Container Type	Preservative
P= Plastic	A= None
A= Amber glass	B= HCl
V= Vial	C= HNO_3
G= Glass	D= H_2SO_4
B= Bacteria cup	E= NaOH
C= Cube	F= MeOH
O= Other	G= $NaHSO_4$
E= Encore	H = $Na_2S_2O_3$
D= BOD Bottle	I= Ascorbic Acid
	J = NH_4Cl
	K= Zn Acetate
	O= Other

Relinquished By:	Date/Time	Received By:	Date/Time
EPW	4/11/17 13:15	AAL	4/11/17 13:15
AAL	4/11/17 16:45		4/11/17 16:45

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

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

ANALYTICAL REPORT

Lab Number:	L1715326
Client:	Sanborn, Head & Associates, Inc. 1 Technology Park Drive Westford, MA 01886
ATTN:	Patrick Malone
Phone:	(978) 392-0900
Project Name:	NEEDHAM
Project Number:	3894.00
Report Date:	05/17/17

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

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

Project Name:	NEEDHAM	**Lab Number:**	L1715326
Project Number:	3894.00	**Report Date:**	05/17/17

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L1715326-01	INF	WATER	NEEDHAM, MA	05/11/17 07:19	05/11/17
L1715326-02	EFF	WATER	NEEDHAM, MA	05/11/17 07:11	05/11/17
L1715326-03	TRIP BLANK	WATER	NEEDHAM, MA	05/08/17 00:00	05/11/17

Case Narrative

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

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

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

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

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

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

Case Narrative (continued)

Sample Receipt

L1715326-03: A Trip Blank was received in the laboratory, but not listed on the Chain of Custody, and was not analyzed.

Chloride

The Effluent (L1715326-02) result is greater than the Influent (L1715326-01) result. The difference is within % RPD limits; therefore, no further action was taken.

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

Authorized Signature: A Naik Amita Naik

Title: Technical Director/Representative Date: 05/17/17

ORGANICS

VOLATILES

SAMPLE RESULTS

Lab ID:	L1715326-01	Date Collected:	05/11/17 07:19
Client ID:	INF	Date Received:	05/11/17
Sample Location:	NEEDHAM, MA	Field Prep:	Not Specified

Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 05/16/17 18:04
Analyst: PD

Parameter	**Result**	**Qualifier**	**Units**	**RL**	**MDL**	**Dilution Factor**
Volatile Organics by GC/MS - Westborough Lab						
Tetrachloroethene	8.0		ug/l	0.50	--	1
Vinyl chloride	ND		ug/l	1.0	--	1
Trichloroethene	ND		ug/l	0.50	--	1
cis-1,2-Dichloroethene	ND		ug/l	0.50	--	1

Surrogate	**% Recovery**	**Qualifier**	**Acceptance Criteria**
1,2-Dichloroethane-d4	107		70-130
Toluene-d8	96		70-130
4-Bromofluorobenzene	99		70-130
Dibromofluoromethane	98		70-130

SAMPLE RESULTS

Lab ID:	L1715326-02	Date Collected:	05/11/17 07:11
Client ID:	EFF	Date Received:	05/11/17
Sample Location:	NEEDHAM, MA	Field Prep:	Not Specified

Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 05/16/17 18:40
Analyst: PD

Parameter	**Result**	**Qualifier**	**Units**	**RL**	**MDL**	**Dilution Factor**
Volatile Organics by GC/MS - Westborough Lab						
Tetrachloroethene	ND		ug/l	0.50	--	1
Vinyl chloride	ND		ug/l	1.0	--	1
Trichloroethene	ND		ug/l	0.50	--	1
cis-1,2-Dichloroethene	ND		ug/l	0.50	--	1

Surrogate	**% Recovery**	**Qualifier**	**Acceptance Criteria**
1,2-Dichloroethane-d4	109		70-130
Toluene-d8	97		70-130
4-Bromofluorobenzene	102		70-130
Dibromofluoromethane	100		70-130

Project Name:	NEEDHAM	**Lab Number:**	L1715326
Project Number:	3894.00	**Report Date:**	05/17/17

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 05/16/17 10:25
Analyst: NL

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01-02 Batch: WG1004009-5					
Tetrachloroethene	ND		ug/l	0.50	--
Vinyl chloride	ND		ug/l	1.0	--
Trichloroethene	ND		ug/l	0.50	--
cis-1,2-Dichloroethene	ND		ug/l	0.50	--
Tentatively Identified Compounds					
No Tentatively Identified Compounds	ND		ug/l		

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	106		70-130
Toluene-d8	96		70-130
4-Bromofluorobenzene	99		70-130
Dibromofluoromethane	100		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: NEEDHAM
Project Number: 3894.00

Lab Number: L1715326
Report Date: 05/17/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-02 Batch: WG1004009-3 WG1004009-4								
Tetrachloroethene	100		96		70-130	4		20
Vinyl chloride	100		98		55-140	2		20
Trichloroethene	110		100		70-130	10		25
cis-1,2-Dichloroethene	110		100		70-130	10		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	105		102		70-130
Toluene-d8	99		98		70-130
4-Bromofluorobenzene	99		100		70-130
Dibromofluoromethane	99		99		70-130

SEMIVOLATILES

SAMPLE RESULTS

Lab ID:	L1715326-01	Date Collected:	05/11/17 07:19
Client ID:	INF	Date Received:	05/11/17
Sample Location:	NEEDHAM, MA	Field Prep:	Not Specified
		Extraction Method:	EPA 3510C
Matrix:	Water	Extraction Date:	05/13/17 23:51
Analytical Method:	1,8270D		
Analytical Date:	05/16/17 17:33		
Analyst:	CB		

Parameter	**Result**	**Qualifier**	**Units**	**RL**	**MDL**	**Dilution Factor**
Semivolatile Organics by GC/MS - Westborough Lab						
Bis(2-ethylhexyl)phthalate	ND		ug/l	3.0	--	1
Butyl benzyl phthalate	ND		ug/l	5.0	--	1
Di-n-butylphthalate	ND		ug/l	5.0	--	1
Di-n-octylphthalate	ND		ug/l	5.0	--	1
Diethyl phthalate	ND		ug/l	5.0	--	1
Dimethyl phthalate	ND		ug/l	5.0	--	1
Pentachlorophenol	ND		ug/l	10	--	1

Surrogate	**% Recovery**	**Qualifier**	**Acceptance Criteria**
2-Fluorophenol	26		21-120
Phenol-d6	22		10-120
Nitrobenzene-d5	68		23-120
2-Fluorobiphenyl	70		15-120
2,4,6-Tribromophenol	58		10-120
4-Terphenyl-d14	78		41-149

SAMPLE RESULTS

Lab ID:	L1715326-02	Date Collected:	05/11/17 07:11
Client ID:	EFF	Date Received:	05/11/17
Sample Location:	NEEDHAM, MA	Field Prep:	Not Specified
		Extraction Method:	EPA 3510C
Matrix:	Water	Extraction Date:	05/13/17 23:51
Analytical Method:	1,8270D		
Analytical Date:	05/16/17 17:58		
Analyst:	CB		

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Bis(2-ethylhexyl)phthalate	ND		ug/l	3.0	--	1
Butyl benzyl phthalate	ND		ug/l	5.0	--	1
Di-n-butylphthalate	ND		ug/l	5.0	--	1
Di-n-octylphthalate	ND		ug/l	5.0	--	1
Diethyl phthalate	ND		ug/l	5.0	--	1
Dimethyl phthalate	ND		ug/l	5.0	--	1
Pentachlorophenol	ND		ug/l	10	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	40		21-120
Phenol-d6	28		10-120
Nitrobenzene-d5	68		23-120
2-Fluorobiphenyl	70		15-120
2,4,6-Tribromophenol	84		10-120
4-Terphenyl-d14	78		41-149

Method Blank Analysis
Batch Quality Control

Analytical Method:	1,8270D	Extraction Method:	EPA 3510C
Analytical Date:	05/16/17 15:49	Extraction Date:	05/13/17 23:51
Analyst:	CB		

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 01-02 Batch: WG1003331-1					
Bis(2-ethylhexyl)phthalate	ND		ug/l	3.0	--
Butyl benzyl phthalate	ND		ug/l	5.0	--
Di-n-butylphthalate	ND		ug/l	5.0	--
Di-n-octylphthalate	ND		ug/l	5.0	--
Diethyl phthalate	ND		ug/l	5.0	--
Dimethyl phthalate	ND		ug/l	5.0	--
Pentachlorophenol	ND		ug/l	10	--

Tentatively Identified Compounds		
No Tentatively Identified Compounds	ND	ug/l

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	46		21-120
Phenol-d6	32		10-120
Nitrobenzene-d5	80		23-120
2-Fluorobiphenyl	84		15-120
2,4,6-Tribromophenol	94		10-120
4-Terphenyl-d14	87		41-149

Lab Control Sample Analysis

Batch Quality Control

Project Name: NEEDHAM

Project Number: 3894.00

Lab Number: L1715326

Report Date: 05/17/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-02 Batch: WG1003331-2 WG1003331-3								
Bis(2-ethylhexyl)phthalate	84		92		40-140	9		30
Butyl benzyl phthalate	81		91		40-140	12		30
Di-n-butylphthalate	81		90		40-140	11		30
Di-n-octylphthalate	84		94		40-140	11		30
Diethyl phthalate	83		92		40-140	10		30
Dimethyl phthalate	90		99		40-140	10		30
Pentachlorophenol	75		82		9-103	9		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2-Fluorophenol	50		50		21-120
Phenol-d6	35		37		10-120
Nitrobenzene-d5	76		80		23-120
2-Fluorobiphenyl	78		86		15-120
2,4,6-Tribromophenol	94		99		10-120
4-Terphenyl-d14	78		88		41-149

INORGANICS
&
MISCELLANEOUS

Project Name:	NEEDHAM	**Lab Number:**	L1715326
Project Number:	3894.00	**Report Date:**	05/17/17

SAMPLE RESULTS

Lab ID:	L1715326-01	Date Collected:	05/11/17 07:19
Client ID:	INF	Date Received:	05/11/17
Sample Location:	NEEDHAM, MA	Field Prep:	Not Specified
Matrix:	Water		

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Anions by Ion Chromatography - Westborough Lab										
Chloride	30.2		mg/l	5.00	--	10	-	05/14/17 18:26	44,300.0	JC

Project Name:	NEEDHAM	**Lab Number:**	L1715326
Project Number:	3894.00	**Report Date:**	05/17/17

SAMPLE RESULTS

Lab ID:	L1715326-02	Date Collected:	05/11/17 07:11
Client ID:	EFF	Date Received:	05/11/17
Sample Location:	NEEDHAM, MA	Field Prep:	Not Specified
Matrix:	Water		

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Anions by Ion Chromatography - Westborough Lab										
Chloride	34.7		mg/l	5.00	--	10	-	05/14/17 18:38	44,300.0	JC

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Anions by Ion Chromatography - Westborough Lab for sample(s): 01-02 Batch: WG1003616-1										
Chloride	ND		mg/l	0.500	--	1	-	05/14/17 17:02	44,300.0	JC

Lab Control Sample Analysis

Batch Quality Control

Project Name: NEEDHAM

Project Number: 3894.00

Lab Number: L1715326

Report Date: 05/17/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Anions by Ion Chromatography - Westborough Lab Associated sample(s): 01-02 Batch: WG1003616-2								
Chloride	103		-		90-110	-		

Matrix Spike Analysis
Batch Quality Control

Project Name: NEEDHAM
Project Number: 3894.00
Lab Number: L1715326
Report Date: 05/17/17

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Anions by Ion Chromatography - Westborough Lab Associated sample(s): 01-02 QC Batch ID: WG1003616-3 QC Sample: L1715432-08 Client ID: MS Sample												
Chloride	12.4	4	16.2	96		-	-		90-110	-		18

Lab Duplicate Analysis

Batch Quality Control

Project Name:	NEEDHAM	**Lab Number:**	L1715326
Project Number:	3894.00	**Report Date:**	05/17/17

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Anions by Ion Chromatography - Westborough Lab Associated sample(s): 01-02 QC Batch ID: WG1003616-4 QC Sample: L1715432-08 Client ID: DUP Sample						
Chloride	12.4	12.4	mg/l	0		18

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	**Custody Seal**
A	Absent

Container Information

Container ID	**Container Type**	**Cooler**	**pH**	**Temp deg C**	**Pres**	**Seal**	**Analysis(*)**
L1715326-01A	Vial HCl preserved	A	N/A	2.0	Y	Absent	8260(14)
L1715326-01B	Vial HCl preserved	A	N/A	2.0	Y	Absent	8260(14)
L1715326-01C	Vial HCl preserved	A	N/A	2.0	Y	Absent	8260(14)
L1715326-01D	Plastic 60ml unpreserved	A	7	2.0	Y	Absent	CL-300(28)
L1715326-01E	Amber 1000ml unpreserved	A	7	2.0	Y	Absent	8270TCL(7)
L1715326-01F	Amber 1000ml unpreserved	A	7	2.0	Y	Absent	8270TCL(7)
L1715326-02A	Vial HCl preserved	A	N/A	2.0	Y	Absent	8260(14)
L1715326-02B	Vial HCl preserved	A	N/A	2.0	Y	Absent	8260(14)
L1715326-02C	Vial HCl preserved	A	N/A	2.0	Y	Absent	8260(14)
L1715326-02D	Plastic 60ml unpreserved	A	7	2.0	Y	Absent	CL-300(28)
L1715326-02E	Amber 1000ml unpreserved	A	7	2.0	Y	Absent	8270TCL(7)
L1715326-02F	Amber 1000ml unpreserved	A	7	2.0	Y	Absent	8270TCL(7)
L1715326-03A	Vial HCl preserved	A	N/A	2.0	Y	Absent	HOLD-8260(14)
L1715326-03B	Vial HCl preserved	A	N/A	2.0	Y	Absent	HOLD-8260(14)

*Values in parentheses indicate holding time in days

GLOSSARY

Acronyms

EDL - Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).

EPA - Environmental Protection Agency.

LCS - Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LCSD - Laboratory Control Sample Duplicate: Refer to LCS.

LFB - Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

MDL - Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

MS - Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available.

MSD - Matrix Spike Sample Duplicate: Refer to MS.

NA - Not Applicable.

NC - Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.

NDPA/DPA - N-Nitrosodiphenylamine/Diphenylamine.

NI - Not Ignitable.

NP - Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.

RL - Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

RPD - Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.

SRM - Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.

STLP - Semi-dynamic Tank Leaching Procedure per EPA Method 1315.

TIC - Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Footnotes

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

Terms

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

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

Data Qualifiers

A - Spectra identified as "Aldol Condensation Product".

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

Data Qualifiers

reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

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

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

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

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

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

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

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

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

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

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

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

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

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

REFERENCES

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

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

LIMITATION OF LIABILITIES

Certification Information

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

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

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

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

Westborough Facility:

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

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

Mansfield Facility:

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

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

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

ALPHA ANALYTICAL

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

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

CHAIN OF CUSTODY

PAGE 1 OF 1

Date Rec'd in Lab: 5/11/17

ALPHA Job #: L1715326

Project Information

Project Name: Needham

Project Location: Needham, MA

Project #: 3894.00

Project Manager: Pat Malone

ALPHA Quote #:

Report Information - Data Deliverables

☒ ADEx ☒ EMAIL

Billing Information

☒ Same as Client info PO #:

Client Information

Client: Sanborn Head

Address: 1 Tech Park Dr
Westford, MA

Phone: 978 392 0900

Email: ~~[illegible]~~@sanbornhead
PMALONE .com

Additional Project Information:

Please meet NPDES RGP detection limits

Regulatory Requirements & Project Information Requirements

☐ Yes ☐ No MA MCP Analytical Methods ☐ Yes ☐ No CT RCP Analytical Methods
☐ Yes ☐ No Matrix Spike Required on this SDG? (Required for MCP Inorganics)
☐ Yes ☐ No GW1 Standards (Info Required for Metals & EPH with Targets)
☒ Yes ☐ No NPDES RGP
☐ Other State /Fed Program Criteria

Turn-Around Time

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

Date Due:

ANALYSIS

SAMPLE INFO
Filtration
☐ Field
☐ Lab to do
Preservation
☐ Lab to do

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler Initials	VOC: ☐ 8260 ☐ 624 ☐ 524.2	SVOC: ☐ ABN ☐ PAH	METALS: ☐ MCP 13 ☐ MCP 14 ☐ RCP 15	METALS: ☐ RCRA5 ☐ RCRA8 ☐ PP13	EPH: ☐ Ranges & Targets ☐ Ranges Only	VPH: ☐ Ranges & Targets ☐ Ranges Only	☐ PCB ☐ PEST	TPH: ☐ Quant Only ☐ Fingerprint	CVOCs: RGT only PCE, TCE, cDCE, VC	Pentachlorophenol	Tot. Phthlates	Bis-2-ethylhexyl (Phthlate	Chloride		Sample Comments	TOTAL # BOTTLES
15326-01	Inf	5/11/17	7:19	GW	EBB									X	X	X	X	X			6
-02	Eff	↓	7:11	↓	↓									X	X	X	X	X			6
Container Type														V	A	A	A	P			
Preservative														B	A	A	A	A			

Container Type	Preservative
P= Plastic	A= None
A= Amber glass	B= HCl
V= Vial	C= HNO_3
G= Glass	D= H_2SO_4
B= Bacteria cup	E= NaOH
C= Cube	F= MeOH
O= Other	G= $NaHSO_4$
E= Encore	H = $Na_2S_2O_3$
D= BOD Bottle	I= Ascorbic Acid
	J = NH_4Cl
	K= Zn Acetate
	O= Other

Relinquished By:	Date/Time	Received By:	Date/Time
EBB 12:04	5/11/17	AAC	5-11-17 12:05
AAC	5-11-17 17:00		5/11/17 17:00

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

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

ANALYTICAL REPORT

Lab Number:	L1719631
Client:	Sanborn, Head & Associates, Inc. 1 Technology Park Drive Westford, MA 01886
ATTN:	Patrick Malone
Phone:	(978) 392-0900
Project Name:	NEEDHAM
Project Number:	3894.00
Report Date:	06/19/17

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

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

Project Name: NEEDHAM
Project Number: 3894.00

Lab Number: L1719631
Report Date: 06/19/17

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L1719631-01	INF	WATER	NEEDHAM, MA	06/13/17 07:35	06/13/17
L1719631-02	EFF	WATER	NEEDHAM, MA	06/13/17 07:25	06/13/17
L1719631-03	TRIP BLANK	WATER	NEEDHAM, MA	06/13/17 00:00	06/13/17

Case Narrative

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

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

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

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

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

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

Case Narrative (continued)

Sample Receipt

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

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

Authorized Signature: Kelly Stenstrom Kelly Stenstrom

Title: Technical Director/Representative Date: 06/19/17

ORGANICS

VOLATILES

Project Name:	NEEDHAM	**Lab Number:**	L1719631
Project Number:	3894.00	**Report Date:**	06/19/17

SAMPLE RESULTS

Lab ID:	L1719631-01	Date Collected:	06/13/17 07:35
Client ID:	INF	Date Received:	06/13/17
Sample Location:	NEEDHAM, MA	Field Prep:	Not Specified

Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 06/15/17 12:38
Analyst: PD

Parameter	**Result**	**Qualifier**	**Units**	**RL**	**MDL**	**Dilution Factor**
Volatile Organics by GC/MS - Westborough Lab						
Tetrachloroethene	13		ug/l	0.50	--	1
Vinyl chloride	ND		ug/l	1.0	--	1
Trichloroethene	ND		ug/l	0.50	--	1
cis-1,2-Dichloroethene	ND		ug/l	0.50	--	1

Surrogate	**% Recovery**	**Qualifier**	**Acceptance Criteria**
1,2-Dichloroethane-d4	120		70-130
Toluene-d8	97		70-130
4-Bromofluorobenzene	102		70-130
Dibromofluoromethane	112		70-130

SAMPLE RESULTS

Lab ID:	L1719631-02	Date Collected:	06/13/17 07:25
Client ID:	EFF	Date Received:	06/13/17
Sample Location:	NEEDHAM, MA	Field Prep:	Not Specified

Matrix:	Water
Analytical Method:	1,8260C
Analytical Date:	06/15/17 13:07
Analyst:	PD

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Tetrachloroethene	ND		ug/l	0.50	--	1
Vinyl chloride	ND		ug/l	1.0	--	1
Trichloroethene	ND		ug/l	0.50	--	1
cis-1,2-Dichloroethene	ND		ug/l	0.50	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	120		70-130
Toluene-d8	98		70-130
4-Bromofluorobenzene	101		70-130
Dibromofluoromethane	112		70-130

Method Blank Analysis
Batch Quality Control

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

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01-02 Batch: WG1013539-5					
Tetrachloroethene	ND		ug/l	0.50	--
Vinyl chloride	ND		ug/l	1.0	--
Trichloroethene	ND		ug/l	0.50	--
cis-1,2-Dichloroethene	ND		ug/l	0.50	--

Tentatively Identified Compounds		
No Tentatively Identified Compounds	ND	ug/l

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

Lab Control Sample Analysis
Batch Quality Control

Project Name: NEEDHAM
Project Number: 3894.00
Lab Number: L1719631
Report Date: 06/19/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-02 Batch: WG1013539-3 WG1013539-4								
Tetrachloroethene	100		110		70-130	10		20
Vinyl chloride	100		110		55-140	10		20
Trichloroethene	98		97		70-130	1		25
cis-1,2-Dichloroethene	94		96		70-130	2		20

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

SEMIVOLATILES

SAMPLE RESULTS

Lab ID:	L1719631-01	Date Collected:	06/13/17 07:35
Client ID:	INF	Date Received:	06/13/17
Sample Location:	NEEDHAM, MA	Field Prep:	Not Specified
		Extraction Method:	EPA 3510C
Matrix:	Water	Extraction Date:	06/15/17 19:56
Analytical Method:	1,8270D		
Analytical Date:	06/17/17 02:20		
Analyst:	RC		

Parameter	**Result**	**Qualifier**	**Units**	**RL**	**MDL**	**Dilution Factor**
Semivolatile Organics by GC/MS - Westborough Lab						
Bis(2-ethylhexyl)phthalate	ND		ug/l	3.0	--	1
Butyl benzyl phthalate	ND		ug/l	5.0	--	1
Di-n-butylphthalate	ND		ug/l	5.0	--	1
Di-n-octylphthalate	ND		ug/l	5.0	--	1
Diethyl phthalate	ND		ug/l	5.0	--	1
Dimethyl phthalate	ND		ug/l	5.0	--	1
Pentachlorophenol	ND		ug/l	10	--	1

Surrogate	**% Recovery**	**Qualifier**	**Acceptance Criteria**
2-Fluorophenol	36		21-120
Phenol-d6	28		10-120
Nitrobenzene-d5	77		23-120
2-Fluorobiphenyl	71		15-120
2,4,6-Tribromophenol	94		10-120
4-Terphenyl-d14	77		41-149

SAMPLE RESULTS

Lab ID:	L1719631-02	Date Collected:	06/13/17 07:25
Client ID:	EFF	Date Received:	06/13/17
Sample Location:	NEEDHAM, MA	Field Prep:	Not Specified
		Extraction Method:	EPA 3510C
Matrix:	Water	Extraction Date:	06/15/17 19:56
Analytical Method:	1,8270D		
Analytical Date:	06/17/17 02:46		
Analyst:	RC		

Parameter	**Result**	**Qualifier**	**Units**	**RL**	**MDL**	**Dilution Factor**
Semivolatile Organics by GC/MS - Westborough Lab						
Bis(2-ethylhexyl)phthalate	ND		ug/l	3.0	--	1
Butyl benzyl phthalate	ND		ug/l	5.0	--	1
Di-n-butylphthalate	ND		ug/l	5.0	--	1
Di-n-octylphthalate	ND		ug/l	5.0	--	1
Diethyl phthalate	ND		ug/l	5.0	--	1
Dimethyl phthalate	ND		ug/l	5.0	--	1
Pentachlorophenol	ND		ug/l	10	--	1

Surrogate	**% Recovery**	**Qualifier**	**Acceptance Criteria**
2-Fluorophenol	42		21-120
Phenol-d6	32		10-120
Nitrobenzene-d5	83		23-120
2-Fluorobiphenyl	80		15-120
2,4,6-Tribromophenol	87		10-120
4-Terphenyl-d14	73		41-149

Project Name:	NEEDHAM	**Lab Number:**	L1719631
Project Number:	3894.00	**Report Date:**	06/19/17

Method Blank Analysis
Batch Quality Control

Analytical Method:	1,8270D	Extraction Method:	EPA 3510C
Analytical Date:	06/16/17 22:32	Extraction Date:	06/15/17 19:56
Analyst:	RC		

Parameter	**Result**	**Qualifier**	**Units**	**RL**	**MDL**
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 01-02 Batch: WG1013669-1					
Bis(2-ethylhexyl)phthalate	ND		ug/l	3.0	--
Butyl benzyl phthalate	ND		ug/l	5.0	--
Di-n-butylphthalate	ND		ug/l	5.0	--
Di-n-octylphthalate	ND		ug/l	5.0	--
Diethyl phthalate	ND		ug/l	5.0	--
Dimethyl phthalate	ND		ug/l	5.0	--
Pentachlorophenol	ND		ug/l	10	--

Tentatively Identified Compounds		
No Tentatively Identified Compounds	ND	ug/l

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

Lab Control Sample Analysis

Batch Quality Control

Project Name: NEEDHAM

Project Number: 3894.00

Lab Number: L1719631

Report Date: 06/19/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-02 Batch: WG1013669-2 WG1013669-3								
Bis(2-ethylhexyl)phthalate	70		67		40-140	4		30
Butyl benzyl phthalate	70		68		40-140	3		30
Di-n-butylphthalate	64		65		40-140	2		30
Di-n-octylphthalate	77		78		40-140	1		30
Diethyl phthalate	75		65		40-140	14		30
Dimethyl phthalate	83		90		40-140	8		30
Pentachlorophenol	79		60		9-103	27		30

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

INORGANICS
&
MISCELLANEOUS

SAMPLE RESULTS

Lab ID: L1719631-01
Client ID: INF
Sample Location: NEEDHAM, MA
Matrix: Water

Date Collected: 06/13/17 07:35
Date Received: 06/13/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Anions by Ion Chromatography - Westborough Lab										
Chloride	26.8		mg/l	5.00	--	10	-	06/14/17 23:25	44,300.0	AU

Project Name:	NEEDHAM	**Lab Number:**	L1719631
Project Number:	3894.00	**Report Date:**	06/19/17

SAMPLE RESULTS

Lab ID:	L1719631-02	Date Collected:	06/13/17 07:25
Client ID:	EFF	Date Received:	06/13/17
Sample Location:	NEEDHAM, MA	Field Prep:	Not Specified
Matrix:	Water		

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Anions by Ion Chromatography - Westborough Lab										
Chloride	28.3		mg/l	5.00	--	10	-	06/14/17 23:37	44,300.0	AU

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Anions by Ion Chromatography - Westborough Lab for sample(s): 01-02 Batch: WG1013642-1										
Chloride	ND		mg/l	0.500	--	1	-	06/14/17 17:13	44,300.0	AU

Lab Control Sample Analysis
Batch Quality Control

Project Name: NEEDHAM

Project Number: 3894.00

Lab Number: L1719631

Report Date: 06/19/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Anions by Ion Chromatography - Westborough Lab Associated sample(s): 01-02 Batch: WG1013642-2								
Chloride	96		-		90-110	-		

Matrix Spike Analysis
Batch Quality Control

Project Name: NEEDHAM
Project Number: 3894.00
Lab Number: L1719631
Report Date: 06/19/17

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Anions by Ion Chromatography - Westborough Lab Associated sample(s): 01-02 QC Batch ID: WG1013642-3 QC Sample: L1719462-01 Client ID: MS Sample												
Chloride	6.74	4	10.5	93		-	-		90-110	-		18

Lab Duplicate Analysis

Batch Quality Control

Project Name: NEEDHAM
Project Number: 3894.00

Lab Number: L1719631
Report Date: 06/19/17

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Anions by Ion Chromatography - Westborough Lab Associated sample(s): 01-02 QC Batch ID: WG1013642-4 QC Sample: L1719462-01 Client ID: DUP Sample						
Chloride	6.74	6.70	mg/l	1		18

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	*Custody Seal*
A	Absent

Container Information

Container ID	*Container Type*	*Cooler*	*Initial pH*	*Final pH*	*Temp deg C*	*Pres*	*Seal*	*Frozen Date/Time*	*Analysis(*)*
L1719631-01A	Vial HCl preserved	A	NA		4.8	Y	Absent		8260(14)
L1719631-01B	Vial HCl preserved	A	NA		4.8	Y	Absent		8260(14)
L1719631-01C	Vial HCl preserved	A	NA		4.8	Y	Absent		8260(14)
L1719631-01D	Plastic 60ml unpreserved	A	7	7	4.8	Y	Absent		CL-300(28)
L1719631-01E	Amber 1000ml unpreserved	A	7	7	4.8	Y	Absent		8270TCL(7)
L1719631-01F	Amber 1000ml unpreserved	A	7	7	4.8	Y	Absent		8270TCL(7)
L1719631-02A	Vial HCl preserved	A	NA		4.8	Y	Absent		8260(14)
L1719631-02B	Vial HCl preserved	A	NA		4.8	Y	Absent		8260(14)
L1719631-02C	Vial HCl preserved	A	NA		4.8	Y	Absent		8260(14)
L1719631-02D	Plastic 60ml unpreserved	A	7	7	4.8	Y	Absent		CL-300(28)
L1719631-02E	Amber 1000ml unpreserved	A	7	7	4.8	Y	Absent		8270TCL(7)
L1719631-02F	Amber 1000ml unpreserved	A	7	7	4.8	Y	Absent		8270TCL(7)
L1719631-03A	Vial HCl preserved	A	NA		4.8	Y	Absent		HOLD-8260(14)
L1719631-03B	Vial HCl preserved	A	NA		4.8	Y	Absent		HOLD-8260(14)

*Values in parentheses indicate holding time in days

GLOSSARY

Acronyms

EDL - Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).

EPA - Environmental Protection Agency.

LCS - Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LCSD - Laboratory Control Sample Duplicate: Refer to LCS.

LFB - Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

MDL - Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

MS - Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available.

MSD - Matrix Spike Sample Duplicate: Refer to MS.

NA - Not Applicable.

NC - Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.

NDPA/DPA - N-Nitrosodiphenylamine/Diphenylamine.

NI - Not Ignitable.

NP - Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.

RL - Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

RPD - Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.

SRM - Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.

STLP - Semi-dynamic Tank Leaching Procedure per EPA Method 1315.

TIC - Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Footnotes

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

Terms

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

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

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

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

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

Data Qualifiers

A - Spectra identified as "Aldol Condensation Product".

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

Data Qualifiers

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

C	- Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.
D	- Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.
E	- Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.
G	- The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.
H	- The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.
I	- The lower value for the two columns has been reported due to obvious interference.
M	- Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.
NJ	- Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.
P	- The RPD between the results for the two columns exceeds the method-specified criteria.
Q	- The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)
R	- Analytical results are from sample re-analysis.
RE	- Analytical results are from sample re-extraction.
S	- Analytical results are from modified screening analysis.
J	- Estimated value. This represents an estimated concentration for Tentatively Identified Compounds (TICs).
ND	- Not detected at the reporting limit (RL) for the sample.

REFERENCES

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

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

LIMITATION OF LIABILITIES

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

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

Alpha Analytical, Inc.
Facility: **Company-wide**
Department: **Quality Assurance**
Title: **Certificate/Approval Program Summary**

ID No.:**17873**
Revision 10
Published Date: 1/16/2017 11:00:05 AM
Page 1 of 1

Certification Information

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

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

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

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

Westborough Facility:

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

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

Mansfield Facility:

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

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

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

CHAIN OF CUSTODY

PAGE 1 OF 1

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

ALPHA Job #: L1719631

ALPHA ANALYTICAL

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

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

Project Information

Project Name: Needham
Project Location: Needham, MA
Project #: 3894.00
Project Manager: Pat Malone
ALPHA Quote #:

Report Information - Data Deliverables

☒ ADEx ☒ EMAIL

Billing Information

☒ Same as Client info
PO #:

Client Information

Client: Sanborn Head
Address: 1 Tech Park Dr
Westford, MA 01886
Phone: 978 392 0900
Email: PMALONE@sanbornhead.com

Regulatory Requirements & Project Information Requirements

☐ Yes ☐ No MA MCP Analytical Methods
☐ Yes ☐ No CT RCP Analytical Methods
☐ Yes ☐ No Matrix Spike Required on this SDG? (Required for MCP Inorganics)
☐ Yes ☐ No GW1 Standards (Info Required for Metals & EPH with Targets)
☒ Yes ☐ No NPDES RGP
☐ Other State /Fed Program ______ Criteria ______

Turn-Around Time

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

Date Due:

Additional Project Information:

Please meet NPDES RGP detection limits

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler Initials	VOC: ☐ 8260 ☐ 624 ☐ 524.2	SVOC: ☐ ABN ☐ PAH	METALS: ☐ MCP 13 ☐ MCP 14 ☐ RCP 15	METALS: ☐ RCRA5 ☐ RCRA8 ☐ PP13	EPH: ☐ Ranges & Targets ☐ Ranges Only	VPH: ☐ Ranges & Targets ☐ Ranges Only	☐ PCB ☐ PEST	TPH: ☐ Quant Only ☐ Fingerprint	CVOCs: Rpt Only PCE, TCE, cDCE, VC	Pentachlorophenol	Tot. Phthalates	Bis-2-ethylhexyl phthalate	Chloride		SAMPLE INFO Filtration ☐ Field ☐ Lab to do Preservation ☐ Lab to do Sample Comments	TOTAL # BOTTLES
19631-01	Inf	6/13/17	7:35	GW	EDB									X	X	X	X	X			6
02	Eff	↓	7:25	↓	↓									X	X	X	X	X			6
Container Type														V	A	A	A	P			
Preservative														3	A	A	A	A			

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

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

Relinquished By:	Date/Time	Received By:	Date/Time
12:28	6/13/17	AAL	6-13-17 1228
AAL	6-13-17 1740		6/13/17 1740

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

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

ANALYTICAL REPORT

Lab Number:	L1721226
Client:	Sanborn, Head & Associates, Inc. 1 Technology Park Drive Westford, MA 01886
ATTN:	Patrick Malone
Phone:	(978) 392-0900
Project Name:	Not Specified
Project Number:	3894.00
Report Date:	06/28/17

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

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

Project Name:	Not Specified	**Lab Number:**	L1721226
Project Number:	3894.00	**Report Date:**	06/28/17

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L1721226-01	INFLUENT	WATER	NEEDHAM, MA	06/22/17 12:20	06/22/17
L1721226-02	OUTFALL	WATER	NEEDHAM, MA	06/22/17 12:50	06/22/17

Project Name:	Not Specified	**Lab Number:**	L1721226
Project Number:	3894.00	**Report Date:**	06/28/17

Case Narrative

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

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

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

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

HOLD POLICY

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

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

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

Authorized Signature: A Naik Amita Naik

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

METALS

Project Name:	Not Specified	**Lab Number:**	L1721226
Project Number:	3894.00	**Report Date:**	06/28/17

SAMPLE RESULTS

Lab ID:	L1721226-01	Date Collected:	06/22/17 12:20
Client ID:	INFLUENT	Date Received:	06/22/17
Sample Location:	NEEDHAM, MA	Field Prep:	Not Specified
Matrix:	Water		

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Hardness by SM 2340B - Mansfield Lab											
Hardness	30.7		mg/l	0.660	NA	1	06/26/17 16:35	06/27/17 16:43	EPA 3005A	19,200.7	AB

Project Name:	Not Specified	**Lab Number:**	L1721226
Project Number:	3894.00	**Report Date:**	06/28/17

SAMPLE RESULTS

Lab ID:	L1721226-02	Date Collected:	06/22/17 12:50
Client ID:	OUTFALL	Date Received:	06/22/17
Sample Location:	NEEDHAM, MA	Field Prep:	Not Specified
Matrix:	Water		

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Hardness by SM 2340B - Mansfield Lab											
Hardness	79.5		mg/l	0.660	NA	1	06/26/17 16:35	06/27/17 16:47	EPA 3005A	19,200.7	AB

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Hardness by SM 2340B - Mansfield Lab for sample(s): 01-02 Batch: WG1017096-1										
Hardness	ND		mg/l	0.660	NA	1	06/26/17 16:35	06/27/17 14:30	19,200.7	PS

Prep Information

Digestion Method: EPA 3005A

Lab Control Sample Analysis

Batch Quality Control

Project Name: Not Specified

Project Number: 3894.00

Lab Number: L1721226

Report Date: 06/28/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Total Hardness by SM 2340B - Mansfield Lab Associated sample(s): 01-02 Batch: WG1017096-2								
Hardness	98		-		85-115	-		

Matrix Spike Analysis
Batch Quality Control

Project Name: Not Specified
Project Number: 3894.00

Lab Number: L1721226
Report Date: 06/28/17

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Total Hardness by SM 2340B - Mansfield Lab Associated sample(s): 01-02 QC Batch ID: WG1017096-3 QC Sample: L1719800-01 Client ID: MS Sample												
Hardness	23.3	66.2	87.0	96		-	-		75-125	-		20
Total Hardness by SM 2340B - Mansfield Lab Associated sample(s): 01-02 QC Batch ID: WG1017096-7 QC Sample: L1720959-01 Client ID: MS Sample												
Hardness	60.0	66.2	120	91		-	-		75-125	-		20

INORGANICS
&
MISCELLANEOUS

Project Name:	Not Specified	**Lab Number:**	L1721226
Project Number:	3894.00	**Report Date:**	06/28/17

SAMPLE RESULTS

Lab ID:	L1721226-01	Date Collected:	06/22/17 12:20
Client ID:	INFLUENT	Date Received:	06/22/17
Sample Location:	NEEDHAM, MA	Field Prep:	Not Specified
Matrix:	Water		

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
pH (H)	7.1		SU	-	NA	1	-	06/23/17 01:00	121,4500H+-B	AS

Project Name: Not Specified
Project Number: 3894.00

Lab Number: L1721226
Report Date: 06/28/17

SAMPLE RESULTS

Lab ID: L1721226-02
Client ID: OUTFALL
Sample Location: NEEDHAM, MA
Matrix: Water

Date Collected: 06/22/17 12:50
Date Received: 06/22/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
pH (H)	6.7		SU	-	NA	1	-	06/23/17 01:00	121,4500H+-B	AS
Nitrogen, Ammonia	0.640		mg/l	0.075	--	1	06/24/17 14:20	06/26/17 22:02	121,4500NH3-BH	AT

Method Blank Analysis

Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab for sample(s): 02 Batch: WG1016682-1										
Nitrogen, Ammonia	ND		mg/l	0.075	--	1	06/24/17 14:20	06/26/17 21:50	121,4500NH3-BH	AT

Lab Control Sample Analysis

Batch Quality Control

Project Name: Not Specified

Project Number: 3894.00

Lab Number: L1721226

Report Date: 06/28/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01-02 Batch: WG1016120-1								
pH	100		-		99-101	-		5
General Chemistry - Westborough Lab Associated sample(s): 02 Batch: WG1016682-2								
Nitrogen, Ammonia	99		-		80-120	-		20

Matrix Spike Analysis
Batch Quality Control

Project Name: Not Specified
Project Number: 3894.00

Lab Number: L1721226
Report Date: 06/28/17

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 02 QC Batch ID: WG1016682-4 QC Sample: L1721071-01 Client ID: MS Sample												
Nitrogen, Ammonia	0.669	4	4.57	98		-	-		80-120	-		20

Lab Duplicate Analysis
Batch Quality Control

Project Name: Not Specified
Project Number: 3894.00

Lab Number: L1721226
Report Date: 06/28/17

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01-02 QC Batch ID: WG1016120-2 QC Sample: L1721038-01 Client ID: DUP Sample						
pH	7.0	6.9	SU	1		5
General Chemistry - Westborough Lab Associated sample(s): 02 QC Batch ID: WG1016682-3 QC Sample: L1721071-01 Client ID: DUP Sample						
Nitrogen, Ammonia	0.669	0.713	mg/l	6		20

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	***Custody Seal***
A	Absent

Container Information

Container ID	***Container Type***	***Cooler***	***Initial pH***	***Final pH***	***Temp deg C***	***Pres***	***Seal***	***Frozen Date/Time***	***Analysis(*)***
L1721226-01A	Plastic 120ml unpreserved	A	7	7	4.8	Y	Absent		PH-4500(.01)
L1721226-01B	Plastic 250ml HNO3 preserved	A	<2	<2	4.8	Y	Absent		HARDU(180)
L1721226-02A	Plastic 120ml unpreserved	A	7	7	4.8	Y	Absent		PH-4500(.01)
L1721226-02B	Plastic 250ml HNO3 preserved	A	<2	<2	4.8	Y	Absent		HARDU(180)
L1721226-02C	Plastic 500ml H2SO4 preserved	A	<2	<2	4.8	Y	Absent		NH3-4500(28)

*Values in parentheses indicate holding time in days

GLOSSARY

Acronyms

EDL - Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).

EPA - Environmental Protection Agency.

LCS - Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LCSD - Laboratory Control Sample Duplicate: Refer to LCS.

LFB - Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

MDL - Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

MS - Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available.

MSD - Matrix Spike Sample Duplicate: Refer to MS.

NA - Not Applicable.

NC - Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.

NDPA/DPA - N-Nitrosodiphenylamine/Diphenylamine.

NI - Not Ignitable.

NP - Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.

RL - Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

RPD - Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.

SRM - Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.

STLP - Semi-dynamic Tank Leaching Procedure per EPA Method 1315.

TIC - Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Footnotes

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

Terms

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

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

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

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

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

Data Qualifiers

A - Spectra identified as "Aldol Condensation Product".

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

Data Qualifiers

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

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

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

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

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

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

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

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

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

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

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

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

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

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

REFERENCES

19	Inductively Coupled Plasma Atomic Emission Spectrometric Method for Trace Element Analysis of Water and Wastes. Appendix C, Part 136, 40 CFR (Code of Federal Regulations). July 1, 1999 edition.
121	Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. Standard Methods Online.

LIMITATION OF LIABILITIES

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

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

Certification Information

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

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

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

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

Westborough Facility:

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

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

Mansfield Facility:

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

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

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

ALPHA ANALYTICAL
World Class Chemistry

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

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

CHAIN OF CUSTODY

PAGE 1 OF 1

Date Rec'd in Lab: 6/22/17

ALPHA Job #: L1721226

Client Information

Client: SANBORN, HEAD & ASSOCIATES
Address: 1 TECHNOLOGY PARK DR.
WESTFORD, MA 01886
Phone: 978-577-1041
Email: pmalone@sanbornhead.com

Additional Project Information:
NPDES RGP REPORTING LIMITS REQUIRED

Project Information

Project Name:
Project Location: NEEDHAM, MA
Project #: 3894.00
Project Manager: P. MALONE
ALPHA Quote #:

Turn-Around Time

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

Date Due:

Report Information - Data Deliverables

☒ ADEx ☒ EMAIL

Billing Information

☒ Same as Client info PO #:

Regulatory Requirements & Project Information Requirements

☐ Yes ☒ No MA MCP Analytical Methods ☐ Yes ☒ No CT RCP Analytical Methods
☐ Yes ☒ No Matrix Spike Required on this SDG? (Required for MCP Inorganics)
☐ Yes ☒ No GW1 Standards (Info Required for Metals & EPH with Targets)
☒ Yes ☐ No NPDES RGP
☐ Other State /Fed Program ____________ Criteria ____________

ANALYSIS
VOC: ☐ 8260 ☐ 624 ☐ 524.2
SVOC: ☐ ABN ☐ PAH
METALS: ☐ MCP 13 ☐ MCP 14 ☐ RCP 15
METALS: ☐ RCRA5 ☐ RCRA8 ☐ PP13
EPH: ☐ Ranges & Targets ☐ Ranges Only
VPH: ☐ Ranges & Targets ☐ Ranges Only
☐ PCB ☐ PEST
TPH: ☐ Quant Only ☐ Fingerprint

SAMPLE INFO
Filtration
☐ Field
☐ Lab to do
Preservation
☐ Lab to do

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler Initials	AMMONIA (SM4500B)	PH	HARDNESS	Sample Comments	TOTAL # BOTTLES
21226-01	INFLUENT	6/22/17	12:20	I	PRM		X	X		2
-02	OUTFALL	6/22/17	12:50	SW	PRM	X	X	X		3

	AMMONIA (SM4500B)	PH	HARDNESS
Container Type	P	P	P
Preservative	D	A	C

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

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

Relinquished By:	Date/Time	Received By:	Date/Time
	6/22/17 12:40	T. Hinkel	6/22/17 1440
T. Hinkel	6/22/17 1745		6/22/17 1745

All samples submitted are subject to Alpha's Terms and Conditions.
See reverse side.
FORM NO: 01-01 (rev. 12-Mar-2012)

APPENDIX E

MUNICIPAL CORRESPONDENCE

Patrick Malone

From: Patrick Malone
Sent: Thursday, July 06, 2017 4:34 PM
To: 'RMerson@needhamma.gov'
Subject: 355 Chestnut Street - NPDES RGP

Good afternoon Mr. Merson.

We are in the process of submitting a National Pollution Discharge Elimination System (NPDES) Notice of Intent (NOI) for an existing Remediation General Permit (RGP) at 355-357 Chestnut Street in Needham. The discharge will consist of treated sump water that will discharge to Outfall #377, as indicated in the emails provided by Mr. Tom Sarno of the Needham DPW. This email is to provide notification to the Town of Needham, as required by Part 3.4.7 of the RGP, since Needham is the municipality that owns the drainage system being used to convey the discharge to the outfall at the surface water. Again this is an existing system, but could you please acknowledge/approve the NPDES RGP renewal.

Thank you,
Pat

--

Patrick Malone, P.E.
Senior Project Manager

SANBORN | HEAD & ASSOCIATES, INC.

1 Technology Park Drive, Westford, MA 01886
T 978.392.0900 D 978.577.1041 C 978.621.9625
www.sanbornhead.com

Patrick Malone

From:	Patrick Malone
Sent:	Wednesday, July 05, 2017 11:55 AM
To:	'cseariac@needhamma.gov'
Cc:	Matt Heil
Subject:	355 Chestnut Street - NPDES RGP

Good morning Mr. Seariac.

We are in the process of submitting a National Pollution Discharge Elimination System (NPDES) Notice of Intent (NOI) for an existing Remediation General Permit (RGP) at 355-357 Chestnut Street in Needham. The discharge will consist of treated sump water that will discharge to Outfall #377, as indicated in the emails provided by Mr. Tom Sarno of the Needham DPW. This email is to provide notification to the Town of Needham, as required by Part 3.4.7 of the RGP, since Needham is the municipality that owns the drainage system being used to convey the discharge to the outfall at the surface water. Again this is an existing system, but could you please acknowledge/approve the NPDES RGP renewal.

Thank you,
Pat

--
Patrick Malone, P.E.
Senior Project Manager

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1 Technology Park Drive, Westford, MA 01886
T 978.392.0900 D 978.577.1041 C 978.621.9625
www.sanbornhead.com

Patrick Malone

From: Patrick Malone
Sent: Wednesday, July 05, 2017 10:27 AM
To: 'mVarrell@needhamma.gov'
Cc: Matt Heil
Subject: 355 Chestnut Street - NPDES RGP

Good morning Mr. Varrell.

We are in the process of submitting a National Pollution Discharge Elimination System (NPDES) Notice of Intent (NOI) for an existing Remediation General Permit (RGP) at 355-357 Chestnut Street in Needham. The discharge will consist of treated sump water that will discharge to Outfall #377, as indicated in the emails provided by Mr. Tom Sarno of the Needham DPW. This email is to provide notification to the Town of Needham, as required by Part 3.4.7 of the RGP, since Needham is the municipality that owns the drainage system being used to convey the discharge to the outfall at the surface water. Please let us know if you have any questions or need any additional information.

Thank you,
Pat

--
Patrick Malone, P.E.
Senior Project Manager

SANBORN | HEAD & ASSOCIATES, INC.

1 Technology Park Drive, Westford, MA 01886
T 978.392.0900 D 978.577.1041 C 978.621.9625
www.sanbornhead.com

The data shown on this site are provided for informational and planning purposes only. The Town and its consultants are not responsible for the misuse or misrepresentation of the data. Data should not be considered accurate, current or complete. Planimetric data is created from April 2009 aerial photographs.

Printed on 06/21/2017 at 02:54 PM

APPENDIX F

FEDERAL CORRESPONDENCE

United States Department of the Interior

FISH AND WILDLIFE SERVICE

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

January 20, 2017

To Whom It May Concern:

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

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

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

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

Sincerely yours,

Thomas R. Chapman
Supervisor
New England Field Office

From: David Simmons
To: Danielle M. DeWolfe
Subject: RE: Needham, MA RGP
Date: Thursday, June 15, 2017 5:12:57 PM

Hi Danielle,
If the extent of the project is as described—pumping from an existing building and discharging to an existing stream—and no tree cutting will occur, the project is unlikely to have any effect the northern long-eared bat. If this is the case, please print the "No Species Present" letter available at this link https://www.fws.gov/newengland/pdfs/2017_no_species_present_ltr.PDF, and include it with your application to EPA. To date, this letter has been sufficient to satisfy EPA's requirements for coordination with our office, provided there are no effects to the species listed in the IPaC report. Please let me know if you have any questions. Regards,

David

David Simmons
Endangered Species Program Supervisor
New England Fish and Wildlife Office
U.S. Fish and Wildlife Service
70 Commercial Street, Suite 300
Concord, New Hampshire 03301
603.227.6425

From: Danielle M. DeWolfe [mailto:DDewolfe@sanbornhead.com]
Sent: Thursday, June 15, 2017 2:00 PM
To: david_simmons@fws.gov
Subject: Needham, MA RGP

Good afternoon,

I am requesting information to be included as part of a Notice of Intent (NOI) for a Remediation General Report (RGP). The NOI is for sump dewatering that will occur from within the footprint of a previously constructed building. Effluent will be discharged to an unnamed brook located approximately 300 feet southwest of the site, via a drain and outfall.

As part of the application to the USEPA for the RGP, we need to investigate whether this proposed temporary discharge has the potential to adversely affect any federally listed species in the reach of the unnamed brook located downstream of the discharge point.

Our Preliminary results using the Information for Planning and Conservation (IPac) tool indicate that the Northern long-eared Bat may be affected by our proposed project. Could you provide a formal or informal consultation to attest that our discharge and related activities would be “not likely to adversely affect” this species?

Thank you in advance for your assistance, and please let me know if you require additional information.

-Danielle

--

Danielle DeWolfe
Project Engineer

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T 978.392.0900 D 978.577.1016 C 508.333.8695
www.sanbornhead.com

Click here to follow us on LinkedIn /Twitter / Facebook

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: June 13, 2017
Consultation Code: 05E1NE00-2017-SLI-1833
Event Code: 05E1NE00-2017-E-04021
Project Name: Needham Oil Sump Dewatering

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:

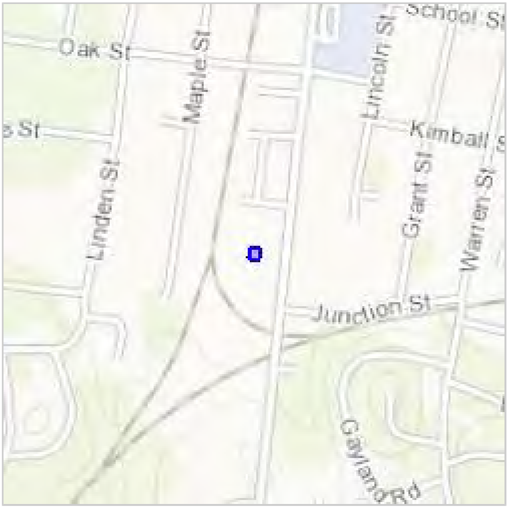
New England Ecological Services Field Office
70 Commercial Street, Suite 300
Concord, NH 03301-5094
(603) 223-2541

Project Summary

Consultation Code:	05E1NE00-2017-SLI-1833
Event Code:	05E1NE00-2017-E-04021
Project Name:	Needham Oil Sump Dewatering
Project Type:	** OTHER **
Project Description:	dewatering associated with sump treatment system

Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/place/42.27413439058469N71.23852235407573W



Counties:	Norfolk, MA

Endangered Species Act Species

There is a total of 1 threatened, endangered, or candidate species on your species list. Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species. See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area. Please contact the designated FWS office if you have questions.

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.

From: Christine Vaccaro - NOAA Federal
To: Danielle M. DeWolfe
Subject: Re: Needham, MA RGP
Date: Wednesday, June 14, 2017 1:26:15 PM

Hi,
There are no listed species by NMFS in Needham, MA.

Cheers,
Chris

Chris Vaccaro
Fisheries Biologist
Protected Resources Division
NOAA Fisheries, Greater Atlantic Region
Gloucester, MA
Phone: 978-281-9167
Email: christine.vaccaro@noaa.gov

On Wed, Jun 14, 2017 at 1:23 PM, Danielle M. DeWolfe <DDewolfe@sanbornhead.com> wrote:

> Good Afternoon Chris,
>
> I am requesting information to included as part of a Notice of Intent (NOI) for a Remediation General Permit (RGP). The NOI is for a basement sump dewatering system at 355 Chestnut Street in Needham, Massachusetts. Effluent will be discharged to an unnamed brook located approximately 300 feet to the southeast of the site (across the train tracks) via a storm drain outfall.
>
> As part of the application to EPA for the RGP, we need to investigate whether the dewatering or discharge has the potential to adversely affect any federally listed species in the site and discharge vicinity.
>
> Thank you in advance for your assistance, and please let me know if you require any additional information.
>
> -Danielle

--

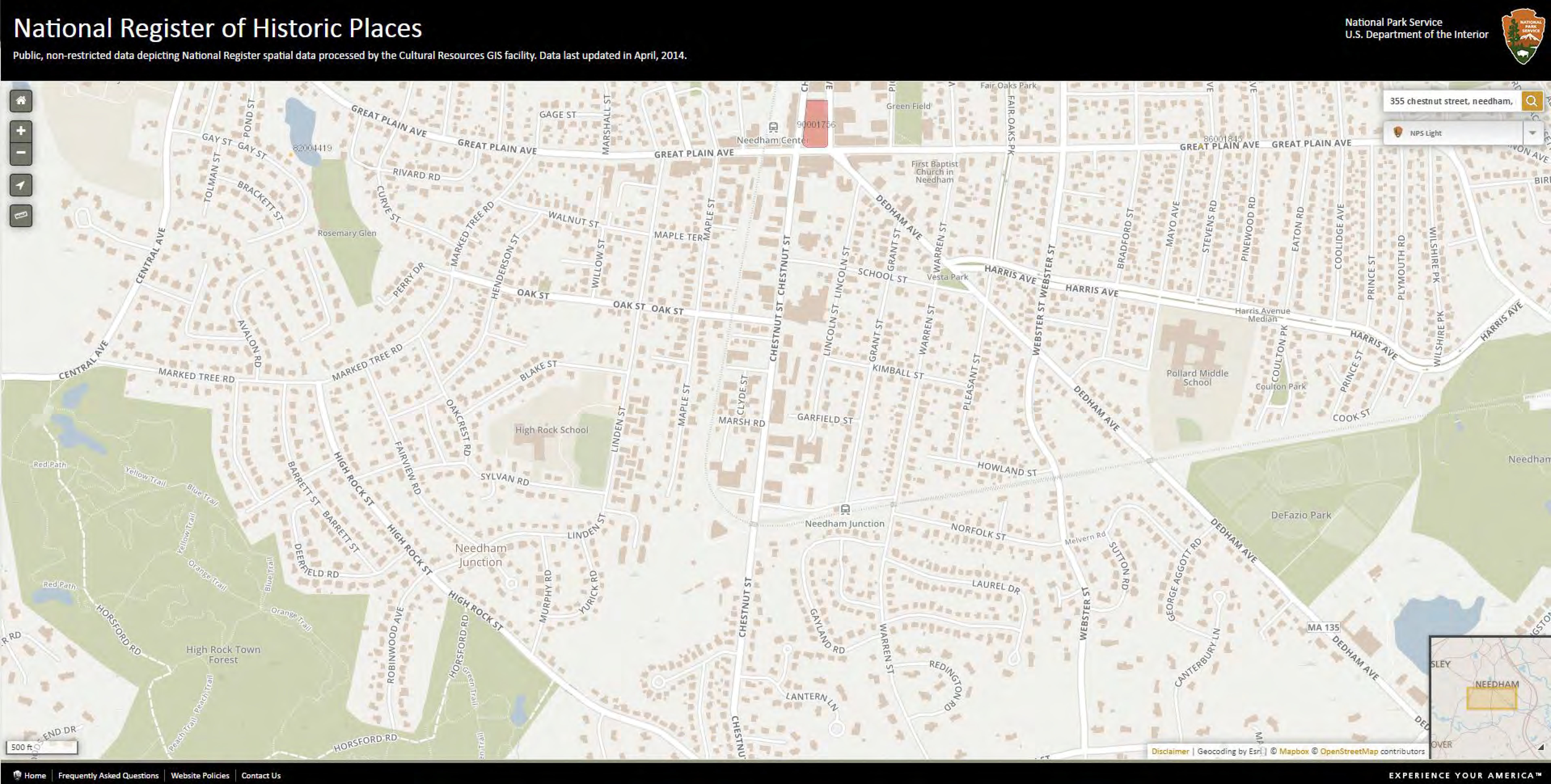
Danielle DeWolfe
Project Engineer

SANBORN | HEAD & ASSOCIATES, INC.
1 Technology Park Drive, Westford, MA 01886
T 978.392.0900 D 978.577.1016 C 508.333.8695
www.sanbornhead.com

Click here to follow us on LinkedIn /Twitter / Facebook

APPENDIX G

NATIONAL REGISTER OF HISTORICAL PLACES, NEEDHAM, MASSACHUSETTS



National Register of Historic Places

Public, non-restricted data depicting National Register spatial data processed by the Cultural Resources GIS facility. Data last updated in April, 2014.

National Park Service
U.S. Department of the Interior

355 chestnut street, needham,

NPS Light

APPENDIX H

SUPPLEMENTAL INFORMATION

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region 1
5 Post Office Square, Suite 100
BOSTON, MA 02109-3912

CERTIFIED MAIL RETURN RECEIPT REQUESTED

MAY 1 2 2014

William Woodcock
Owner
Needham Oil Co., dba Woodcock Realty Inc.
P.O. Box 920733
Needham, MA 02492

Re: Authorization to discharge under the Remediation General Permit (RGP) – MAG910000. Needham Oil Company site at 355-355R Chestnut Street, Needham, MA 02492 Norfolk County; Authorization # MAG910616

Dear Mr. Woodcock:

Based on the review of a Notice of Intent (NOI) submitted by the LSP for the site Mr. Mark Germano on behalf of Needham Oil Company, dba Woodcock Realty Inc., for the site referenced above, the U.S. Environmental Protection Agency (EPA) hereby authorizes you, as the legal named Owner and Operator, to discharge in accordance with the provisions of the RGP at that site. Your authorization number is listed above.

The checklist enclosed with this RGP authorization indicates the pollutants which you are required to monitor. Also indicated on the checklist are the effluent limits, test methods and minimum levels (MLs) for each pollutant. Please note that the checklist does not represent the complete requirements of the RGP. Operators must comply with all of the applicable requirements of this permit, including influent and effluent monitoring, narrative water quality standards, record keeping, and reporting requirements, found in Parts I and II, and Appendices I – VIII of the RGP. See EPA's website for the complete RGP and other information at: http://www.epa.gov/region1/npdes/mass.html#dgp.

Please note the enclosed checklist includes vinyl chloride, parameter that you have marked "Believed Present". The checklist also includes, bis (2-ethylhexyl) phthalate, butyl benzyl phthalate and pentachlorophenol parameters, for which your laboratory reports indicated there was insufficient sensitivity to detect these parameters at the minimum levels established in Appendix VI of the RGP.

Also, the laboratory records included with the Notice of Intent (NOI) indicate pollutant content in the intake water, therefore, the volatile organics, tetrachloroethene, trichloroethene, cis-1, 2 – dichloroethene are required to be monitored.

Please note the checklist of pollutants attached to this authorization is subject to a recertification if the operations at the site result in a discharge lasting longer than six months. A recertification can be submitted to EPA within six (6) to twelve (12) months of operations in accordance with the 2010 RGP regulations.

This general permit and authorization to discharge will expire on September 9, 2015. You have reported that this project will terminate on May 1, 2020. If for any reason the discharge terminates sooner you are required to submit a Notice of Termination (NOT) to the attention of the contact person indicated below within 30 days of project completion.

Thank you in advance for your cooperation in this matter. Please contact Victor Alvarez at 617-918-1572 or Alvarez.Victor@epa.gov, if you have any questions.

Sincerely,

Thelma Murphy

Thelma Murphy, Chief
Storm Water and Construction
Permits Section

Enclosure

cc: Robert Kubit, MassDEP
Richard P. Merson, Needham DPW
Mark M. Germano, LSP

2010 Remediation General Permit
Summary of Monitoring Parameters[1]

NPDES Authorization Number:	**MAG910616**
Authorization Issued:	May 2, 2014
Facility/Site Name:	Needham Oil Company
Facility/Site Address:	355-355R Chestnut Street, Needham, MA 02492 Email address of owner: w.woodcock@comcast.net
Legal Name of Operator:	William Woodcock
Operator contact name, title, and Address:	LSP at the site is :Mark Germano, Licensed Site Professional Email: Not provided: Phone No. 339 7933528
Estimated date of The Project Completion:	May 1, 2014
Category and Sub-Category:	Category IV- Miscellaneous Related Discharges. Sub-category D. Long Term Remediation of Contaminated Sumps and Dikes
RGP Termination Date:	September 9, 2015
Receiving Water:	Unnamed Brook to Town Pond to Rosemary Lake

Monitoring & Limits are applicable if checked. All samples are to be collected as grab samples

	Parameter	**Effluent Limit/Method#/ML** (All Effluent Limits are shown as Daily Maximum Limit, unless denoted by a **, in that case it will be a Monthly Average Limit)
	1. Total Suspended Solids (TSS)	30 milligrams/liter (mg/L) **, 50 mg/L for hydrostatic testing ** Me#160.2/ML5ug/L
	2. Total Residual Chlorine (TRC) 1	Freshwater = 11 ug/L ** Saltwater = 7.5 ug/L **/ Me#330.5/ML 20ug/L
	3. Total Petroleum Hydrocarbons (TPH)	5.0 mg/L/ Me# 1664A/ML 5.0mg/L
	4. Cyanide (CN) 2, 3	Freshwater = 5.2 ug/l ** Saltwater = 1.0 ug/L **/ Me#335.4/ML 10ug/L
	5. Benzene (B)	5ug/L /50.0 ug/L for hydrostatic testing only/ Me#8260C/ML 2 ug/L
	6. Toluene (T)	(limited as ug/L total BTEX)/ Me#8260C/ ML 2ug/L
	7. Ethylbenzene (E)	(limited as ug/L total BTEX) Me#8260C/ ML 2ug/L
	8. (m,p,o) Xylenes (X)	(limited as ug/L total BTEX) Me#8260C/ ML 2ug/L
	9. Total Benzene, Toluene, Ethyl Benzene, and Xylenes (BTEX) 4	100 ug/L/ Me#8260C/ ML 2ug/L

	Parameter	**Effluent Limit/Method#/ML** (All Effluent Limits are shown as Daily Maximum Limit, unless denoted by a **, in that case it will be a Monthly Average Limit)
	10. Ethylene Dibromide (EDB) (1,2- Dibromoethane)	0.05 ug/l/ Me#8260C/ ML 10ug/L
	11. Methyl-tert-Butyl Ether (MtBE)	70.0 ug/l/Me#8260C/ML 10ug/L
	12.tert-Butyl Alcohol (TBA) (TertiaryButanol)	Monitor Only(ug/L)/Me#8260C/ML 10ug/L
	13. tert-Amyl Methyl Ether (TAME)	Monitor Only(ug/L)/Me#8260C/ML 10ug/L
	14. Naphthalene [5]	20 ug/L /Me#8260C/ML 2ug/L
	15. Carbon Tetrachloride	4.4 ug/L /Me#8260C/ ML 5ug/L
	16. 1,2 Dichlorobenzene (o-DCB)	600 ug/L /Me#8260C/ ML 5ug/L
	17. 1,3 Dichlorobenzene (m-DCB)	320 ug/L /Me#8260C/ ML 5ug/L
	18. 1,4 Dichlorobenzene (p-DCB)	5.0 ug/L /Me#8260C/ ML 5ug/L
	18a. Total dichlorobenzene	763 ug/L - NH only /Me#8260C/ ML 5ug/L
	19. 1,1 Dichloroethane (DCA)	70 ug/L /Me#8260C/ ML 5ug/L
	20. 1,2 Dichloroethane (DCA)	5.0 ug/L /Me#8260C/ ML 5ug/L
	21. 1,1 Dichloroethene (DCE)	3.2 ug/L/Me#8260C/ ML 5ug/L
√	22. cis-1,2 Dichloroethene (DCE)	70 ug/L/Me#8260C/ ML 5ug/L
	23. Methylene Chloride	4.6 ug/L/Me#8260C/ ML 5ug/L
√	24. Tetrachloroethene (PCE)	5.0 ug/L/Me#8260C/ ML 5ug/L
	25. 1,1,1 Trichloro-ethane (TCA)	200 ug/L/Me#8260C/ ML 5ug/L
	26. 1,1,2 Trichloro-ethane (TCA)	5.0 ug/L /Me#8260C/ ML 5ug/L
√	27. Trichloroethene (TCE)	5.0 ug/L /Me#8260C/ ML 5ug/L
√	28. Vinyl Chloride (Chloroethene)	2.0 ug/L /Me#8260C/ ML 5ug/L
	29. Acetone	Monitor Only(ug/L)/Me#8260C/ML 50ug/L
	30. 1,4 Dioxane	Monitor Only /Me#1624C/ML 50ug/L
	31. Total Phenols	300 ug/L Me#420.1&420.2/ML 2 ug/L/ Me# 420.4 /ML 50ug/L
√	32. Pentachlorophenol (PCP)	1.0 ug/L /Me#8270D/ML 5ug/L,Me#604 &625/ML 10ug/L
√	33. Total Phthalates (Phthalate esters) [6]	3.0 ug/L ** /Me#8270D/ML 5ug/L, Me#606/ML 10ug/L& Me#625/ML 5ug/L
√	34. Bis (2-Ethylhexyl) Phthalate [Di- (ethylhexyl) Phthalate]	6.0 ug/L /Me#8270D/ML 5ug/L,Me#606/ML 10ug/L & Me#625/ML 5ug/L
	35. Total Group I Polycyclic Aromatic Hydrocarbons (PAH)	10.0 ug/L
	a. Benzo(a) Anthracene [7]	0.0038 ug/L /Me#8270D/ ML 5ug/L, Me#610/ML 5ug/L& Me#625/ML 5ug/L

	Parameter	**Effluent Limit/Method#/ML** (All Effluent Limits are shown as Daily Maximum Limit, unless denoted by a **, in that case it will be a Monthly Average Limit)
	b. Benzo(a) Pyrene [7]	0.0038 ug/L /Me#8270D/ ML 5ug/L, Me#610/ML 5ug/L& Me#625/ML 5ug/L
	c. Benzo(b)Fluoranthene [7]	0.0038 ug/L /Me#8270D/ ML 5ug/L, Me#610/ML 5ug/L& Me#625/ML 5ug/L
	d. Benzo(k)Fluoranthene [7]	0.0038 ug/L /Me#8270D/ ML 5ug/L, Me#610/ML 5ug/L& Me#625/ML 5ug/L
	e. Chrysene [7]	0.0038 ug/L /Me#8270D/ML 5ug/L, Me#610/ML 5ug/L& Me#625/ML 5ug/L
	f. Dibenzo(a,h)anthracene [7]	0.0038 ug/L /Me#8270D/ML 5ug/L, Me#610/ML 5ug/L& Me#625/ML 5ug/L
	g. Indeno(1,2,3-cd) Pyrene [7]	0.0038 ug/L /Me#8270D/ML 5ug/L, Me#610/ML 5ug/L& Me#625/ML5ug/L
	36. Total Group II Polycyclic Aromatic Hydrocarbons (PAH)	100 ug/L
	h. Acenaphthene	X/Me#8270D/ML 5ug/L,Me#610/ML 5ug/L & Me#625/ML 5ug/L
	i. Acenaphthylene	X/Me#8270D/ML 5ug/L,Me#610/ML 5ug/L & Me#625/ML 5ug/L
	j. Anthracene	X/Me#8270D/ML 5ug/L,Me#610/ML 5ug/L & Me#625/ML 5ug/L
	k. Benzo(ghi) Perylene	X/Me#8270D/ML 5ug/L,Me#610/ML 5ug/L & Me#625/ML 5ug/L
	l. Fluoranthene	X/Me#8270D/ML 5ug/L,Me#610/ML 5ug/L & Me#625/ML 5ug/L
	m. Fluorene	X/Me#8270D/ML 5ug/L,Me#610/ML 5ug/L & Me#625/ML 5ug/L
	n. Naphthalene [5]	20 ug/l / Me#8270/ML 5ug/L, Me#610/ML 5ug/L & Me#625/ML 5ug/L
	o. Phenanthrene	X/Me#8270D/ML 5ug/L,Me#610/ML 5ug/L & Me#625/ML 5ug/L
	p. Pyrene	X/Me#8270D/ML5ug/L,Me#610/ML 5ug/L & Me#625/ML 5ug/L
	37. Total Polychlorinated Biphenyls (PCBs) [8, 9]	0.000064 ug/L/Me# 608/ ML 0.5 ug/L
√	38. Chloride	Monitor only/Me# 300.0/ ML 100 ug/L

		Total Recoverable Metal Limit @ H [10]= 50 mg/l CaCO3 for discharges in Massachusetts (ug/l) [11/12]		**Minimum level=ML**	
	Metal parameter	**Freshwater**	**Saltwater**		
	39. Antimony	5.6/ML 10			
	40. Arsenic **	10/ML20	36/ML 20		

		Total Recoverable Metal Limit @ H [10]= 50 mg/l CaCO3 for discharges in Massachusetts (ug/l) [11/12]		Minimum level=ML	
	Metal parameter	**Freshwater**	**Saltwater**		
	41. Cadmium **	0.2/ML10	8.9/ML 10		
	42. Chromium III (trivalent) **	48.8/ML15	100/ML 15		
	43. Chromium VI (hexavalent) **	11.4/ML10	50.3/ML 10		
	44. Copper **	5.2/ML15	3.7/ML 15		
	45. Lead **	1.3/ML20	8.5/ML 20		
	46. Mercury **	0.9/ML0.2	1.1/ML 0.2		
	47. Nickel **	29/ML20	8.2/ML 20		
	48. Selenium **	5/ML20	71/ML 20		
	49. Silver	1.2/ML10	2.2/ML 10		
	50. Zinc **	66.6/ML15	85.6/ML 15		
	51. Iron	1,000/ML 20			

	Other Parameters	**Limit**
√	52. Instantaneous Flow	Site specific in CFS
√	53. Total Flow	Site specific in CFS
√	54. pH Range for Class A & Class B Waters in MA	6.5-8.3; 1/Month/Grab[13]
	55. pH Range for Class SA & Class SB Waters in MA	6.5-8.3; 1/Month/Grab[13]
	56. pH Range for Class B Waters in NH	6.5-8; 1/Month/Grab[13]
	57. Daily maximum temperature - Warm water fisheries	83°F; 1/Month/Grab[14]
	58. Daily maximum temperature - Cold water fisheries	68°F; 1/Month/Grab[14]
	59. Maximum Change in Temperature in MA - Any Class A water body	1.5°F; 1/Month/Grab[14]
	60. Maximum Change in Temperature in MA - Any Class B water body- Warm Water	5°F; 1/Month/Grab[14]
	61. Maximum Change in Temperature in MA – Any Class B water body - Cold water and Lakes/Ponds	3°F; 1/Month/Grab[14]
	62. Maximum Change in Temperature in MA – Any Class SA water body - Coastal	1.5°F; 1/Month/Grab[14]
	63. Maximum Change in Temperature in MA – Any Class SB water body - July to September	1.5°F; 1/Month/Grab[14]
	64. Maximum Change in Temperature in MA –Any Class SB water body - October to June	4°F; 1/Month/Grab[14]

Footnotes:

[1] Although the maximum values for TRC are 11ug/l and 7.5 ug/l for freshwater, and saltwater respectively, the compliance limits are equal to the minimum level (ML) of the test method used as listed in Appendix VI (i.e., Method 330.5, 20 ug/l).

[2] Limits for cyanide are based on EPA's water quality criteria expressed as micrograms per liter. There is currently no EPA approved test method for free cyanide. Therefore, total cyanide must be reported.

[3] Although the maximum values for cyanide are 5.2 ug/l and 1.0 ug/l for freshwater and saltwater, respectively, the compliance limits are equal to the minimum level (ML) of the Method 335.4 as listed in Appendix VI (i.e., 10 ug/l).

[4] BTEX = sum of Benzene, Toluene, Ethylbenzene, and total Xylenes.

[5] Naphthalene can be reported as both a purgeable (VOC) and extractable (SVOC) organic compound. If both VOC and SVOC are analyzed, the highest value must be used unless the QC criteria for one of the analyses is not met. In such cases, the value from the analysis meeting the QC criteria must be used.

[6] The sum of individual phthalate compounds(not including the #34, Bis (2-Ethylhexyl) Phthalate . The compliance limits are equal to the minimum level (ML) of the test method used as listed in Appendix VI.

Total values calculated for reporting on NOIs and discharge monitoring reports shall be calculated by adding the measured concentration of each constituent. If the measurement of a constituent is less than the ML, the permittee shall use a value of zero for that constituent. For each test, the permittee shall also attach the raw data for each constituent to the discharge monitoring report, including the minimum level and minimum detection level for the analysis.

[7] Although the maximum value for the individual PAH compounds is 0.0038 ug/l, the compliance limits are equal to the minimum level (ML) of the test method used as listed in Appendix VI.

[8] In the November 2002 WQC, EPA has revised the definition of Total PCBs for aquatic life as total PCBs is the sum of all homologue, all isomer, all congener, or all "Oroclor analyses."Total values calculated for reporting on NOIs and discharge monitoring reports shall be calculated by adding the measured concentration of each constituent. If the measure of a constituent is less than the ML, the permittee shall use a value of zero for that constituent. For each test, the permittee shall also attach the raw data for each constituent to the discharge monitoring report, including the minimum level and minimum detection level for the analysis.

[9] Although the maximum value for total PCBs is 0.000064 ug/l, the compliance limit is equal to the minimum level (ML) of the test method used as listed in Appendix VI (i.e., 0.5 ug/l for Method 608 or 0.00005 ug/l when Method 1668a is approved).

[10] Hardness. Cadmium, Chromium III, Copper, Lead, Nickel, Silver, and Zinc are Hardness Dependent.

[11] For a Dilution Factor (DF) from 1 to 5, metals limits are calculated using DF times the base limit for the metal. See Appendix IV. For example, iron limits are calculated using DF x 1,000ug/L (the iron base limit). Therefore DF is 1.5, the iron limit will be 1,500 ug/L; DF 2, then iron limit =1,000 x 2 =2,000 ug/L., etc. not to exceed the DF=5.

[12] Minimum Level (ML) is the lowest level at which the analytical system gives a recognizable signal and acceptable calibration point for the analyte. The ML represents the lowest concentration at which an analyte can be measured with a known level of confidence. The ML is calculated by multiplying the laboratory-determined method detection limit by 3.18 (see 40 CFR Part 136, Appendix B).

[13] pH sampling for compliance with permit limits may be performed using field methods as provided for in EPA test Method 150.1.

[14] Temperature sampling per Method 170.1

April 23, 2014

U.S. Environmental Protection Agency-Region 1
5 Post Office Square, Suite 100
Mail Code OEP06-4
Boston, Massachusetts 02109-3912
Attn.: Remediation General Permit NOI Processing

Reference: **Notice of Intent**
NPDES Remediation General Perrmit
Needham Oil Company
355 Chestnut Street
Needham, Massachusetts

To whom it may concern:

On behalf Needham Oil Company, Inc., d.b.a. Woodcock Realty, Inc. (WRI) Mark A. Germano, LSP has prepared this Notice of Intent (NOI) for coverage under the National Pollutant Discharge Elimination System (NPDES) Remediation General Permit (RGP), Massachusetts General Permit (MAG910000). This NOI was prepared in accordance with the general requirements of the NPDES and related guidance documentation provided by the US Environmental Protection Agency (EPA) foe long term management of contaminated sump water. The completed NOI form is provided in Appendix A.

Site Information

The RGP is for the discharge of water from a basement sump system, which has become contaminated with volatile organic compounds to a municipal storm water catch basin. The basement sump is located in a disposal site (RTN 3-31855) where Immediate Response Actions have been implemented to address an Imminent Hazard (IH) condition inside the bank building at 355 Chestnut St Needham, MA. The IH condition was most likely caused by a historical release of chlorinated solvents from the dry cleaning operation located in the abutting building at 357 Chestnut Street. A dry cleaner has operated at the current location since the mid 1960's. The property has been owned and operated by the Needham Oil Company since 1961. The occupants of these buildings lease the property from WRI. Currently Needham Oil's operating facility is located in the rear of the property behind the affected buildings. Please refer to Figure 1 Site Plan for a locus map and an overview of the immediate commercial area surrounding the Site. The work area is bounded to the north by Marsh Road, and to the east by Chestnut Street and to the south by a Roche Bros. Supermarket and west by MBTA Railroad tracks as depicted on Figure 2 Site Plan. The proposed discharge location is an unnamed brook across the railroad tracks behind Roche Bros. that ultimately discharges to Rosemary Lake as depicted in Figure 3.

Work Summary/Monitoring Program

The basement of the Bank of America building at 355 Chestnut Street has been utilizing a submersible (sump) pump/perimeter drain system to control surface water and prevent groundwater infiltration to the basement. Groundwater is controlled by two sumps connected to a perimeter drain with a pump in the sump in the rear of the building Recent sampling of the sump water determined that the groundwater infiltrating the basement had detectable concentrations of contamination. Therefore, Mark A. Germano, LSP (MAG) determined that by modifying the sump system to a Pump & Treat (P&T) system that the water in the basement can continued to be controlled via the existing sumps and the contaminates can be treated prior to discharge to the storm drain. The water discharged from the basement sump will be treated with 2-200 pound canisters of granular activated carbon. The treated water will be pumped via a subsurface private drain line to an on-site oil water separator where it mixes with surface water before being manually pumped to the Town drainage system in Marsh Road. The manual pumping of the OWS is part of the Spill Protection for the on-site fuel oil operation and petroleum storage (See Figure 2).

Monthly monitoring activities will be conducted by MAG to ensure that the P&T System is maintaining compliance with the RGP. Based on previous sampling data, the chemicals of concern are volatile organic compounds (VOCs). Upon approval of the RGP, MAG will collect influent and effluent samples from the system on the first, third, and sixth day of discharge (if feasible with the intermittent discharge of the system); weekly for the first month; and then monthly. Samples will be analyzed for all compounds detected in the pre-remediation RGP parameter analysis and samples collected within the first week will be submitted for 72 hour analysis. The P&T will be immediately shutdown upon any indication of malfunction or violation of effluent limitations. In accordance with the RGP, a summary of the results will be submitted to the United State Environmental Protection Agency (EPA) Northeast (NE) office and the DEP Northeast Regional Office (NERO) if a violation of the effluent limits occurs.

Monthly samples will be collected at both the influent and effluent stages of the system to ensure the target contaminants are not breaking through the treatment process. Samples will be analyzed for all compounds detected in the pre-remediation RGP parameter analysis, including VOCs via EPA 624 Method. The system will be immediately shut down upon any indication of malfunction or violation of effluent limitations. In accordance with the RGP, a summary of the results will be submitted to the EPA-NE office and the DEP NERO if a violation of the effluent limits occurs, in addition to the RMRs that are submitted. A water totalizing meter will be utilized to obtain the total monthly volume of groundwater discharged.

MAG reviewed online electronic data viewers and databases from the Massachusetts Geographical Historical Information System (MassGIS) and 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, neither the Site nor the point where the proposed discharge reaches the receiving surface water body are Areas of Critical Environmental Concern (ACEC), Habitats of Rare Wetland Wildlife, Habitats of Rare Species or Estimated Habitats of Rare Wildlife or listed as a National Historic Place.

Mark A. Germano, LSP is the environmental consultant for the Site and will be the contractor that will operate the P&T system on behalf of Woodcock Realty Inc. d.b.a. Needham Oil Company the facility/site owner. The following is the contact information for the owner and operator:

Mark A. Germano, LSP
15 Pinehurst Road
Marshfield, MA 02050
Phone No. 339-793-3528

Mr. William Woodcock
Needham Oil Company, Inc. d.b.a
Woodcock Realty Inc.
P.O. Box 920733
Needham, MA 02492
Phone No.: 617-692-0102

In accordance with the RGP-NOI, the State Application Form BRPWM 12 and associated payment are **not applicable** to this project because the Site is currently a MADEP MCP Site pursuant to 310 CMR 40.0000.

It is our opinion that the proposed discharge is eligible for coverage under the NPDES RGP. On behalf of MAG, we are requesting coverage under the NPDES RGP for the long term management of contaminated sump water at the Site.

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, MAG 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 me at 339-793-3528 or at mgermano916@gmail.com If have any questions or if you require additional information.

Sincerely,
Mark A. Germano, LSP

Mark Germano, LSP
Owner

Attachments:
1. Remedial General Permit - Notice of Intent
2. Site Locus
3. Process Flow Diagram
4. Discharge Maps
5. Laboratory Analytical Reports

B. Suggested Form for Notice of Intent (NOI) for the Remediation General Permit

1. General facility/site information. Please provide the following information about the site:

a) Name of **facility/site**: Needham Oil Company

Facility/site mailing address:

Location of **facility/site**:
longitude: -71.238337
latitude: 42.274058

Facility SIC code(s): 5983,6021,3582

Street: 355,355R Chestnut Street

b) Name of **facility/site owner:**

Town: Needham

Email address of facility/site owner: w.woodcock@comcast.net

State: MA
Zip: 02492
County: Norfolk

Telephone no. of facility/site **owner**: 617-692-0102

Fax no. of facility/site **owner**: None

Owner is (check one): 1. Federal ○ 2. State/Tribal ○ 3. Private ● 4. Other ○ if so, describe: Needham Oil Co. dba Woodcock Realty Inc.

Address of **owner** (if different from site):

Street: P.O. Box 920733

Town: Needham
State: MA
Zip: 02492
County: Norfolk

c) Legal name of **operator**: William Woodcock

Operator telephone no: 617-692-0102

Operator fax no.:

Operator email: w.woodcock@comcast.net

Operator contact name and title: Mark Germano, Licensed Site Professional

Address of **operator** (if different from owner):

Street: 15 Pinehurst Road

Town: Marshfield
State: MA
Zip: 02050
County: Plymouth

d) Check Y for “yes” or N for “no” for the following:

1. Has a prior NPDES permit exclusion been granted for the discharge? Y ○ N ● , if Y, number:
2. Has a prior NPDES application (Form 1 & 2C) ever been filed for the discharge? Y ○ N ●, if Y, date and tracking #:
3. Is the discharge a “new discharge” as defined by 40 CFR 122.2? Y ○ N ○
4. For sites in Massachusetts, is the discharge covered under the Massachusetts Contingency Plan (MCP) and exempt from state permitting? Y ● N ○

e) Is site/facility subject to any State permitting, license, or other action which is causing the generation of discharge? Y ● N ○

If Y, please list:

1. site identification # assigned by the state of NH or MA: RTH 3-31855
2. permit or license # assigned: NA
3. state agency contact information: name, location, and telephone number:

Tim Boyle,MADEP. NERO, Wilmington, 978-694-3398

f) Is the site/facility covered by any other EPA permit, including:

1. Multi-Sector General Permit? Y ○ N ●, if Y, number:
2. Final Dewatering General Permit? Y ○ N ●, if Y, number:
3. EPA Construction General Permit? Y ○ N ●, if Y, number:
4. Individual NPDES permit? Y ○ N ●, if Y, number:
5. any other water quality related individual or general permit? Y ○ N ●, if Y, number:

g) Is the site/facility located within or does it discharge to an Area of Critical Environmental Concern (ACEC)? Y ○ N ●

h) Based on the facility/site information and any historical sampling data, identify the sub-category into which the potential discharge falls.

Activity Category	**Activity Sub-Category**
I - Petroleum Related Site Remediation	A. Gasoline Only Sites ☐ B. Fuel Oils and Other Oil Sites (including Residential Non-Business Remediation Discharges) ☐ C. Petroleum Sites with Additional Contamination ☐
II - Non Petroleum Site Remediation	A. Volatile Organic Compound (VOC) Only Sites ☐ B. VOC Sites with Additional Contamination ☐ C. Primarily Heavy Metal Sites ☐
III - Contaminated Construction Dewatering	A. General Urban Fill Sites ☐ B. Known Contaminated Sites ☐

IV - Miscellaneous Related Discharges	A. Aquifer Pump Testing to Evaluate Formerly Contaminated Sites ☐ B. Well Development/Rehabilitation at Contaminated/Formerly Contaminated Sites ☐ C. Hydrostatic Testing of Pipelines and Tanks ☐ D. Long-Term Remediation of Contaminated Sumps and Dikes ☒ E. Short-term Contaminated Dredging Drain Back Waters (if not covered by 401/404 permit) ☐

2. Discharge information. Please provide information about the discharge, (attaching additional sheets as necessary) including:

a) Describe the discharge activities for which the owner/applicant is seeking coverage:

Contaminated basement sump water will be treated with GAC prior to discharge to OWS which is then manually pumped to the town drainage system prior to discharge to unnamed brook.

b) Provide the following information about each discharge:

1) Number of discharge points: 1

2) What is the **maximum** and **average flow rate** of discharge (in cubic feet per second, ft^3/s)?
Max. flow .00063 Is maximum flow a **design value**? Y ● N ○
Average flow (include units) 5 Is average flow a design value or estimate? design value

3) Latitude and longitude of each discharge within 100 feet:
pt.1: lat 42.273661 long -71.238616 pt.2: lat. ___ long. ___;
pt.3: lat ___ long ___ pt.4: lat. ___ long. ___;
pt.5: lat ___ long ___ pt.6: lat. ___ long. ___;
pt.7: lat ___ long ___ pt.8: lat. ___ long. ___; etc.

4) If hydrostatic testing, total volume of the discharge (gals): ___

5) Is the discharge intermittent ● or seasonal ○ ?
Is discharge ongoing? Y ○ N ○

c) Expected dates of discharge (mm/dd/yy): start May 1, 2014 end May 1, 2020

d) Please attach a line drawing or flow schematic showing water flow through the facility including:
1. sources of intake water, 2. contributing flow from the operation, 3. treatment units, and 4. discharge points and receiving waters(s). See attached Figure 2

3. Contaminant information.

a) Based on the sub-category selected (see Appendix III), indicate whether each listed chemical is **believed present** or **believed absent** in the potential discharge. Attach additional sheets as needed.

Parameter *	CAS Number	Believed Absent	Believed Present	# of Samples	Sample Type (e.g., grab)	Analytical Method Used (method #)	Minimum Level (ML) of Test Method	Maximum daily value		Average daily value	
								concentration (ug/l)	mass (kg)	concentration (ug/l)	mass (kg)
1. Total Suspended Solids (TSS)		☒	☐	1	grab	SM2540D	4.0 mg/L	ND			
2. Total Residual Chlorine (TRC)		☒	☐	1	grab	HACH8167	.20 mg/L	ND			
3. Total Petroleum Hydrocarbons (TPH)		☒	☐	1	grab	8100M	.156	ND			
4. Cyanide (CN)	57125	☒	☐	1	grab	SM4500	.01	ND			
5. Benzene (B)	71432	☒	☐	1	grab	SW8260B	2.0	ND			
6. Toluene (T)	108883	☒	☐	1	grab	SW8260B	2.0	ND			
7. Ethylbenzene (E)	100414	☒	☐	1	grab	SW8260B	2.0	ND			
8. (m,p,o) Xylenes (X)	108883; 106423; 95476; 1330207	☒	☐	1	grab	SW8260B	2.0	ND			
9. Total BTEX [2]	n/a	☒	☐	1	grab	SW8260B	2.0	ND			
10. Ethylene Dibromide (EDB) (1,2-Dibromoethane) [3]	106934	☒	☐	1	grab	SW8260B	2.0	ND			
11. Methyl-tert-Butyl Ether (MtBE)	1634044	☒	☐	1	grab	SW8260B	2.0	ND			
12. tert-Butyl Alcohol (TBA) (Tertiary-Butanol)	75650	☒	☐	1	grab	SW8260B	2.0	ND			

***** Numbering system is provided to allow cross-referencing to Effluent Limits and Monitoring Requirements by Sub-Category included in Appendix III, as well as the Test Methods and Minimum Levels associated with each parameter provided in Appendix VI.

[2] BTEX = Sum of Benzene, Toluene, Ethylbenzene, total Xylenes.

[3] EDB is a groundwater contaminant at fuel spill and pesticide application sites in New England.

Parameter *	**CAS Number**	**Believed Absent**	**Believed Present**	**# of Samples**	**Sample Type (e.g., grab)**	**Analytical Method Used (method #)**	**Minimum Level (ML) of Test Method**	**Maximum daily value**		**Average daily value**	
								concentration (ug/l)	**mass (kg)**	**concentration (ug/l)**	**mass (kg)**
13. tert-Amyl Methyl Ether (TAME)	9940508	☒	☐	1	grab	SW8260B	2.0	ND			
14. Naphthalene	91203	☒	☐	1	grab	SW8260B	2.0	ND			
15. Carbon Tetrachloride	56235	☒	☐	1	grab	SW8260B	2.0	ND			
16. 1,2 Dichlorobenzene (o-DCB)	95501	☒	☐	1	grab	SW8260B	2.0	ND			
17. 1,3 Dichlorobenzene (m-DCB)	541731	☒	☐	1	grab	SW8260B	2.0	ND			
18. 1,4 Dichlorobenzene (p-DCB)	106467	☒	☐	1	grab	SW8260B	2.0	ND			
18a. Total dichlorobenzene		☒	☐	1	grab	SW8260B	2.0	ND			
19. 1,1 Dichloroethane (DCA)	75343	☐	☒	1	grab	SW8260B	2.0	ND			
20. 1,2 Dichloroethane (DCA)	107062	☐	☒	1	grab	SW8260B	2.0	ND			
21. 1,1 Dichloroethene (DCE)	75354	☐	☒	1	grab	SW8260B	2.0	ND			
22. cis-1,2 Dichloroethene (DCE)	156592	☐	☒	1	grab	SW8260B	2.0	11.2			
23. Methylene Chloride	75092	☒	☐	1	grab	SW8260B	2.0	ND			
24. Tetrachloroethene (PCE)	127184	☐	☒	1	grab	SW8260B	20	185			
25. 1,1,1 Trichloro-ethane (TCA)	71556	☐	☒	1	grab	SW8260B	2.0	ND			
26. 1,1,2 Trichloro-ethane (TCA)	79005	☐	☒	1	grab	SW8260B	2.0	ND			
27. Trichloroethene (TCE)	79016	☐	☒	1	grab	SW8260B	2.0	6.38			

Parameter *	CAS Number	Believed Absent	Believed Present	# of Samples	Sample Type (e.g., grab)	Analytical Method Used (method #)	Minimum Level (ML) of Test Method	Maximum daily value		Average daily value	
								concentration (ug/l)	mass (kg)	concentration (ug/l)	mass (kg)
28. Vinyl Chloride (Chloroethene)	75014	☐	☒	1	grab	SW8260B	2.0	ND			
29. Acetone	67641	☒	☐	1	grab	SW8260B	2.0	ND			
30. 1,4 Dioxane	123911	☒	☐	1	grab	SW8260B	2.0	ND			
31. Total Phenols	108952	☒	☐	1	grab	E420.1	.0150	ND			
32. Pentachlorophenol (PCP)	87865	☒	☐	1	grab	E420.1	.0150	ND			
33. Total Phthalates (Phthalate esters) [4]		☒	☐	1	grab	SW8270C	1.09	ND			
34. Bis (2-Ethylhexyl) Phthalate [Di-(ethylhexyl) Phthalate]	117817	☒	☐	1	grab	SW8270C	1.09	ND			
35. Total Group I Polycyclic Aromatic Hydrocarbons (PAH)		☒	☐	1	grab	SW8270C	1.09	ND			
a. Benzo(a) Anthracene	56553	☒	☐	1	grab	SW8270C	.109	ND			
b. Benzo(a) Pyrene	50328	☒	☐	1	grab	SW8270C	.109	ND			
c. Benzo(b)Fluoranthene	205992	☒	☐	1	grab	SW8270C	.109	ND			
d. Benzo(k)Fluoranthene	207089	☒	☐	1	grab	SW8270C	.109	ND			
e. Chrysene	21801	☒	☐	1	grab	SW8270C	1.09	ND			
f. Dibenzo(a,h)anthracene	53703	☒	☐	1	grab	SW8270C	.109	ND			
g. Indeno(1,2,3-cd) Pyrene	193395	☒	☐	1	grab	SW8270C	.109	ND			
36. Total Group II Polycyclic Aromatic Hydrocarbons (PAH)		☒	☐	1	grab	SW8270C	1.09	ND			

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[4] The sum of individual phthalate compounds.

Parameter *	**CAS Number**	**Believed Absent**	**Believed Present**	**# of Samples**	**Sample Type (e.g., grab)**	**Analytical Method Used (method #)**	**Minimum Level (ML) of Test Method**	**Maximum daily value**		**Average daily value**	
								concentration (ug/l)	**mass (kg)**	**concentration (ug/l)**	**mass (kg)**
h. Acenaphthene	83329	☒	☐	1	grab	SW8270C	1.09	ND			
i. Acenaphthylene	208968	☒	☐	1	grab	SW8270C	1.09	ND			
j. Anthracene	120127	☒	☐	1	grab	SW8270C	1.09	ND			
k. Benzo(ghi) Perylene	191242	☒	☐	1	grab	SW8270C	1.09	ND			
l. Fluoranthene	206440	☒	☐	1	grab	SW8270C	1.09	ND			
m. Fluorene	86737	☒	☐	1	grab	SW8270C	1.09	ND			
n. Naphthalene	91203	☒	☐	1	grab	SW8270C	1.09	ND			
o. Phenanthrene	85018	☒	☐	1	grab	SW8270C	1.09	ND			
p. Pyrene	129000	☒	☐	1	grab	SW8270C	1.09	ND			
37. Total Polychlorinated Biphenyls (PCBs)	85687; 84742; 117840; 84662; 131113; 117817.	☒	☐	1	grab	SW8082A	.269	ND			
38. Chloride	16887006	☒	☐	1	grab	L-10-117-07-1-B	2	105			
39. Antimony	7440360	☒	☐	1	grab	SW6010C	.010	ND			
40. Arsenic	7440382	☒	☐	1	grab	GFAA 7010	.0010	ND			
41. Cadmium	7440439	☒	☐	1	grab	SW6010C	.010	ND			
42. Chromium III (trivalent)	16065831	☒	☐	1	grab						
43. Chromium VI (hexavalent)	18540299	☒	☐	1	grab						
44. Copper	7440508	☒	☐	1	grab						
45. Lead	7439921	☒	☐	1	grab						
46. Mercury	7439976	☒	☐	1	grab						
47. Nickel	7440020	☒	☐	1	grab						
48. Selenium	7782492	☒	☐	1	grab						
49. Silver	7440224	☒	☐	1	grab						
50. Zinc	7440666	☒	☐	1	grab						
51. Iron	7439896	☒	☐	1	grab						
Other (describe):		☐	☐	1							

Parameter *	CAS Number	Believed Absent	Believed Present	# of Samples	Sample Type (e.g., grab)	Analytical Method Used (method #)	Minimum Level (ML) of Test Method	Maximum daily value		Average daily value	
								concentration (ug/l)	mass (kg)	concentration (ug/l)	mass (kg)
		☐	☐								
		☐	☐								

b) For discharges where **metals** are believed present, please fill out the following (attach results of any calculations):

Step 1: Do any of the metals in the influent exceed the effluent limits in Appendix III (i.e., the limits set at zero dilution)? Y ○ N ○	If yes, which metals?
Step 2: For any metals which exceed the **Appendix III** limits, calculate the **dilution factor (DF)** using the formula in Part I.A.3.c (step 2) of the NOI instructions or as determined by the State prior to the submission of this NOI. What is the dilution factor for applicable metals? Metal: DF: Metal: DF: Metal: DF: Metal: DF: Etc.	Look up the limit calculated at the corresponding dilution factor in **Appendix IV.** Do any of the metals in the **influent** have the potential to exceed the corresponding **effluent** limits in Appendix IV (i.e., is the influent concentration above the limit set at the calculated dilution factor)? Y ○ N ○ If Y, list which metals:

4. Treatment system information. Please describe the treatment system using separate sheets as necessary, including:

a) A description of the treatment system, including a schematic of the proposed or existing treatment system:

Groundwater pumped out of the basement sump will be treated by 2-200 pound granular activated carbon cannisters prior to discharge to private and town drainage system

b) Identify each applicable treatment unit (check all that apply):	Frac. tank ☐	Air stripper ☐	Oil/water separator ☐	Equalization tanks ☐	Bag filter ☐	GAC filter ☒
	Chlorination ☐	De-chlorination ☐	Other (please describe):			

c) Proposed **average** and **maximum flow rates** (gallons per minute) for the discharge and the **design flow rate**(s) (gallons per minute) of the treatment system:

Average flow rate of discharge 5 gpm Maximum flow rate of treatment system 10 gpm

Design flow rate of treatment system 5 gpm

d) A description of chemical additives being used or planned to be used (attach MSDS sheets):

5. Receiving surface water(s). Please provide information about the receiving water(s), using separate sheets as necessary:

a) Identify the discharge pathway:	Direct to receiving water ☐	Within facility (sewer) ☐	Storm drain ☒	Wetlands ☐	Other (describe):

b) Provide a narrative description of the discharge pathway, including the name(s) of the receiving waters:

Basement sump to GAC treatment to drainage lines to discharge to unamed brook which leads to Town Pond which drains into Rosemary Lake in Needham. (Fig 3)

c) Attach a detailed map(s) indicating the site location and location of the outfall to the receiving water:
1. For multiple discharges, number the discharges sequentially.
2. For indirect dischargers, indicate the location of the discharge to the indirect conveyance and the discharge to surface water
The map should also include the location and distance to the nearest sanitary sewer as well as the locus of nearby sensitive receptors (based on USGS topographical mapping), such as surface waters, drinking water supplies, and wetland areas.

d) Provide the state water quality classification of the receiving water B

e) Provide the reported or calculated seven day-ten year low flow (7Q10) of the receiving water ____ cfs
Please attach any calculation sheets used to support stream flow and dilution calculations.

f) Is the receiving water a listed 303(d) water quality impaired or limited water? Y ○ N ● If yes, for which pollutant(s)?

Is there a final TMDL? Y ○ N ● If yes, for which pollutant(s)?

6. ESA and NHPA Eligibility.

Please provide the following information according to requirements of Permit Parts I.A.4 and I.A.5 Appendices II and VII.

a) Using the instructions in Appendix VII and information on Appendix II, under which criterion listed in Part I.C are you eligible for coverage under this general permit?
A ● B ○ C ○ D ○ E ○ F ○

b) If you selected Criterion D or F, has consultation with the federal services been completed? Y ○ N ○ Underway ○

c) If consultation with U.S. Fish and Wildlife Service and/or NOAA Fisheries Service was completed, was a written concurrence finding that the discharge is "not likely to adversely affect" listed species or critical habitat received? Y ○ N ○

d) Attach documentation of ESA eligibility as described in the NOI instructions and required by Appendix VII, Part I.C, Step 4.

e) Using the instructions in Appendix VII, under which criterion listed in Part II.C are you eligible for coverage under this general permit?
1 ● 2 ○ 3 ○

f) If Criterion 3 was selected, attach all written correspondence with the State or Tribal historic preservation officers, including any terms and conditions that outline measures the applicant must follow to mitigate or prevent adverse effects due to activities regulated by the RGP.

7. Supplemental information.

Please provide any supplemental information. Attach any analytical data used to support the application. Attach any certification(s) required by the general permit.

8. Signature Requirements: The Notice of Intent must be signed by the operator in accordance with the signatory requirements of 40 CFR Section 122.22, including the following certification:

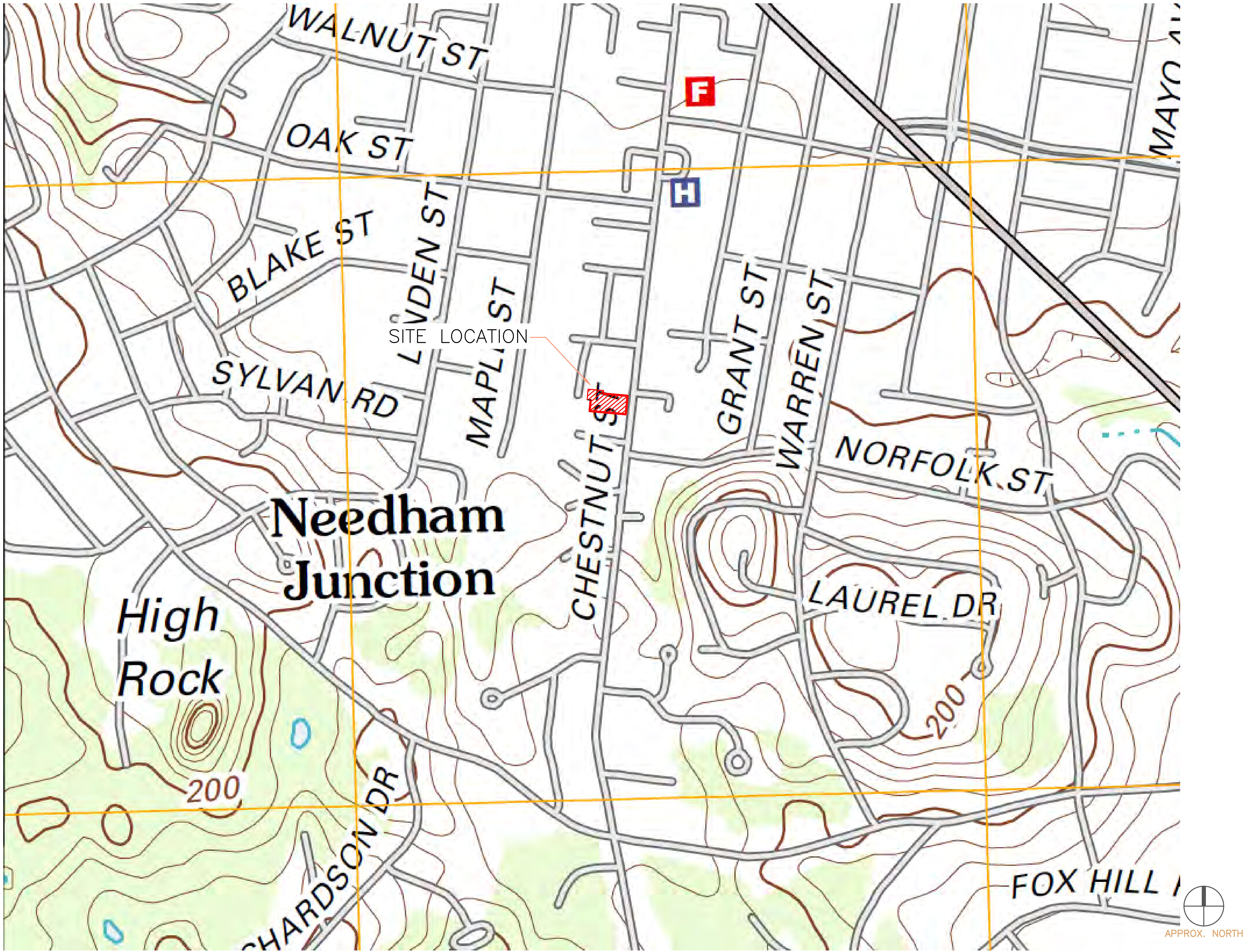
> *I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, I certify that the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I certify that I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.*

Facility/Site Name: Needham Oil Company dba Woodcock Realty Inc.

Operator signature: William Woodcock

Printed Name &Title: William Woodcock, Owner

Date: April 16, 2014



PREPARED FOR:

WILLIAM WOODCOCK
WOODCOCK REALTY INC.
P.O. BOX 920733
NEEDHAM, MA 02492

PREPARED BY:

KURZ ENVIRONMENTAL
P.O. BOX 358
SHERBORN, MA 01770

ENGINEER STAMP/SIGNATURE

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SUBMITTALS

NO.	DATE	DESCRIPTION	BY
A	01/02/14	FOR REVIEW	LMK

JOB NO: 355

SITE INFO:

RTN: 3–31855

355 – 357 CHESTNUT STREET
NEEDHAM, MA 02492
NORFOLK COUNTY

SHEET TITLE:

USGS TOPOGRAPHIC MAP

DRAWN BY: LMK

CHECKED BY:

DATE: 01/02/14

SHEET NO: FIGURE 1

1 TOPOGRAPHIC MAP

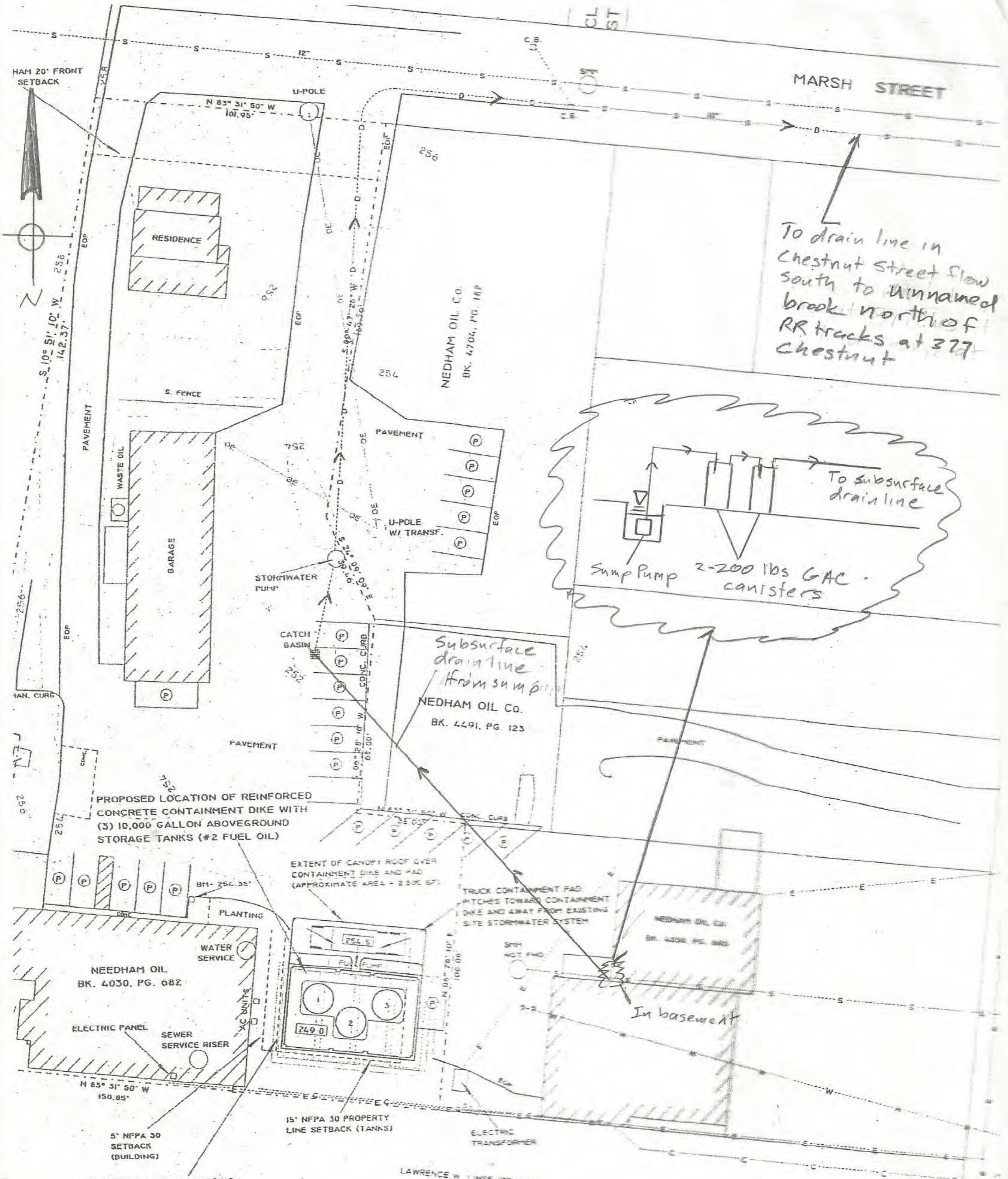
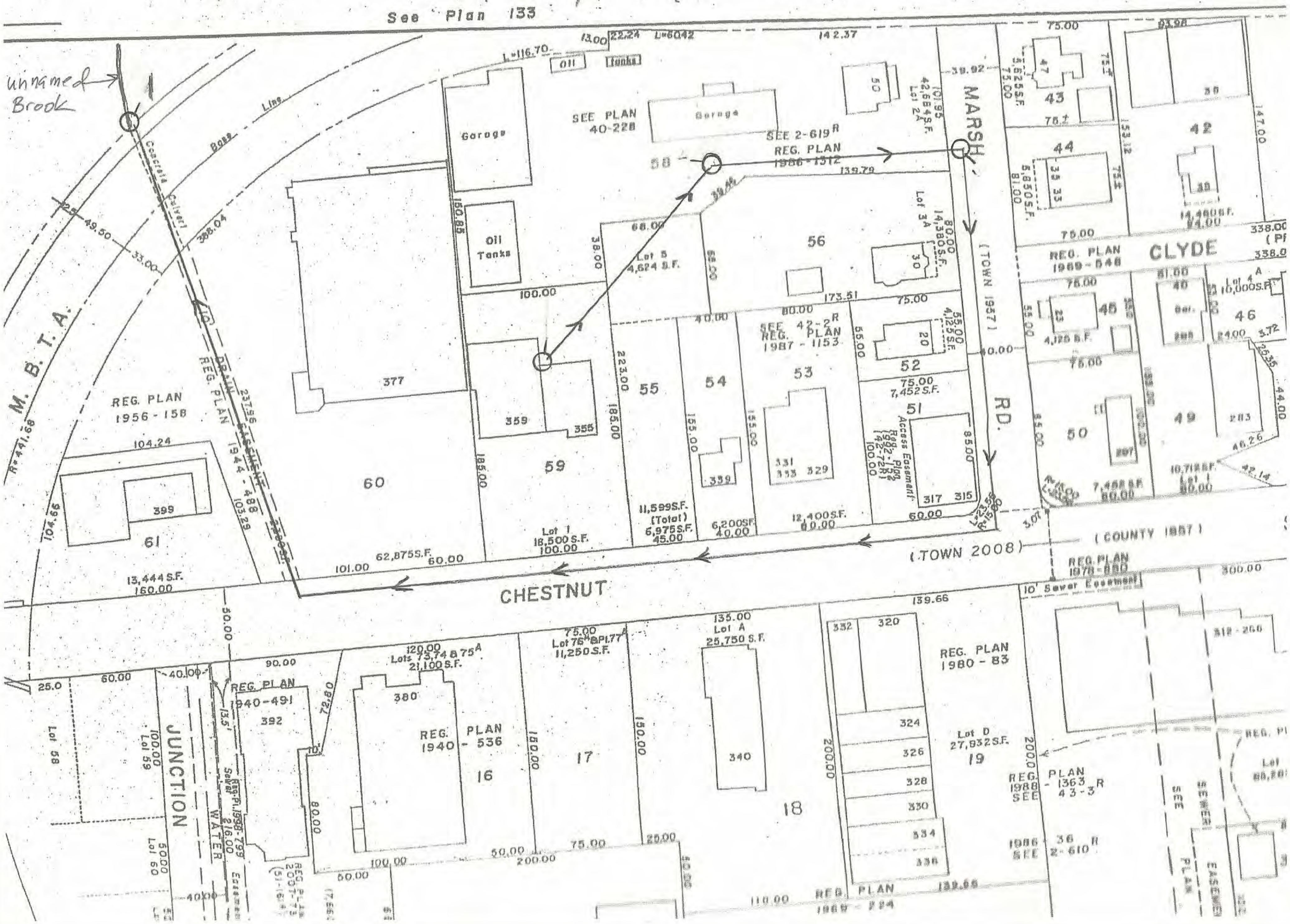


Figure 2 - Flow Schematic

Fig 3 - Discharge Pathway (Source: Assessor's Plan No. 46)



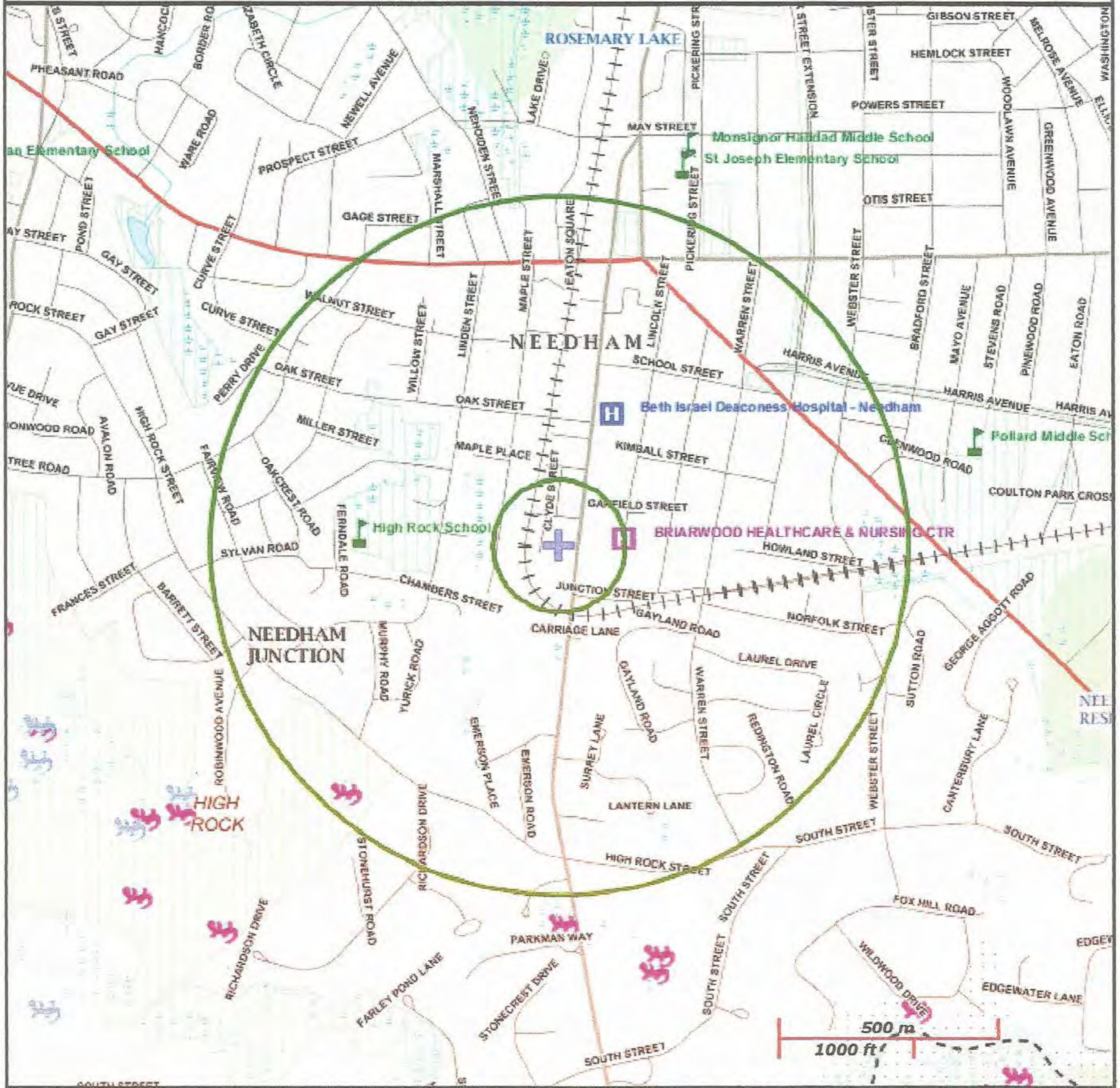
MassDEP - Bureau of Waste Site Cleanup

Site Information: MCP Numerical Ranking System Map: 500 feet & 0.5 Mile Radii

NEEDHAM OIL COMPANY
355 CHESTNUT STREET NEEDHAM, MA
3-000031855
NAD83 UTM Meters:
4682662mN , 315415mE (Zone: 19)
April 18, 2014

The information shown is the best available at the date of printing. However, it may be incomplete. The responsible party and LSP are ultimately repsponsible 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.

Fig 4.

ANALYTICAL REPORT

Thursday, April 10, 2014

GeoLabs, Inc.
45 Johnson Lane
Braintree MA 02184
Tele: 781 848 7844
Fax: 781 848 7811

Mark Germano
Germano
15 Pinehurst Rd.
Marshfield, MA 02050

TEL: (339) 793-3528
FAX:

Project: Needham Oil
Location:

Order No.: 1404001

Dear Mark Germano:

GeoLabs, Inc. received 1 sample(s) on 4/1/2014 for the analyses presented in the following report.

The laboratory results in this report relate only to samples submitted.

All data for associated QC met method or laboratory specifications, except when noted in the Case Narrative.

If you have any questions regarding these tests results, please feel free to call.

Sincerely,

David Mick

David Mick
Laboratory Director

For current certifications, please visit our website at www.geolabs.com

Certifications:

CT (PH-0148) - MA (M-MA015) - NH (2508) - RI (LA000252)

Date: *10-Apr-14*

CLIENT:	Germano
Project:	Needham Oil
Lab Order:	1404001

CASE NARRATIVE

Physical Condition of Samples

The project was received by the laboratory in satisfactory condition. The sample(s) were received undamaged, in appropriate containers with the correct preservation.

Project Documentation

The project was accompanied by satisfactory Chain of Custody documentation.

Analysis of Sample(s)

All extractable samples were extracted and analyzed and any Volatile samples were analyzed within method specified holding times and according to GeoLabs documented Standard Operating Procedure. No analytical anomalies or non-conformances were noted by the laboratory during the processing of these samples.

Note: TRC was analyzed outside of the 15-minute holding time.

SIGNATURE: LAB DIRECTOR

PRINTED NAME: David Mick DATE: 04/10/14

ANALYTICAL REPORT

Reported Date: 10-Apr-14

CLIENT: Germano
Lab Order: 1404001
Project: Needham Oil
Lab ID: 1404001-001

Client Sample ID: Sump
Collection Date: 4/1/2014 10:15:00 AM
Date Received: 4/1/2014
Matrix: GROUNDWATER

TOTAL SUSPENDED SOLIDS - SM2540D

Analyst: **CR**

Prep Method: **Prep Date:**

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Total Suspended Solids	ND	4.00		mg/L	1	4/2/2014

POLYCHLORINATED BIPHENYLS - SW8082A

Analyst: **KG**

Prep Method: **(SW3510B)** **Prep Date:** **4/7/2014 9:34:39 AM**

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Aroclor 1016	ND	0.269		µg/L	1	4/7/2014
Aroclor 1221	ND	0.269		µg/L	1	4/7/2014
Aroclor 1232	ND	0.269		µg/L	1	4/7/2014
Aroclor 1242	ND	0.269		µg/L	1	4/7/2014
Aroclor 1248	ND	0.269		µg/L	1	4/7/2014
Aroclor 1254	ND	0.269		µg/L	1	4/7/2014
Aroclor 1260	ND	0.269		µg/L	1	4/7/2014
Surr: Decachlorobiphenyl Sig 1	79.4	30-150		%REC	1	4/7/2014
Surr: Decachlorobiphenyl Sig 2	81.5	30-150		%REC	1	4/7/2014
Surr: Tetrachloro-m-Xylene Sig 1	81.8	30-150		%REC	1	4/7/2014
Surr: Tetrachloro-m-Xylene Sig 2	64.2	30-150		%REC	1	4/7/2014

TOTAL PETROLEUM HYDROCARBONS - 8100M

Analyst: **KG**

Prep Method: **(8100M)** **Prep Date:** **4/3/2014 9:12:31 AM**

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Total Petroleum Hydrocarbons	ND	0.156		mg/L	1	4/3/2014
Surr: o-Terphenyl	77.8	40-140		%REC	1	4/3/2014

TOTAL METALS BY ICP - SW6010C

Analyst: **ZYZ**

Prep Method: **(SW3010A)** **Prep Date:** **4/4/2014 12:03:14 PM**

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Antimony	ND	0.0100		mg/L	1	4/4/2014
Cadmium	ND	0.0100		mg/L	1	4/4/2014
Chromium	ND	0.0100		mg/L	1	4/4/2014
Copper	ND	0.100		mg/L	1	4/4/2014
Iron	*1.42*	0.0100		mg/L	1	4/4/2014
Lead	ND	0.0100		mg/L	1	4/4/2014
Nickel	ND	0.0100		mg/L	1	4/4/2014
Selenium	ND	0.0100		mg/L	1	4/4/2014

Qualifiers:

B	Analyte detected in the associated Method Blank	BRL	Below Reporting Limit
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
RL	Reporting Limit	S	Spike Recovery outside recovery limits

ANALYTICAL REPORT

Reported Date: 10-Apr-14

CLIENT:	Germano	**Client Sample ID:**	Sump
Lab Order:	1404001	**Collection Date:**	4/1/2014 10:15:00 AM
Project:	Needham Oil	**Date Received:**	4/1/2014
Lab ID:	1404001-001	**Matrix:**	GROUNDWATER

TOTAL METALS BY ICP - SW6010C Analyst: **ZYZ**

Prep Method: **(SW3010A)** **Prep Date:** **4/4/2014 12:03:14 PM**

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Silver	ND	0.0100		mg/L	1	4/7/2014
Zinc	ND	0.100		mg/L	1	4/4/2014

TOTAL METALS BY GFAA - 7010 Analyst: **ZYZ**

Prep Method: **(SW3020A)** **Prep Date:** **4/8/2014 11:11:15 AM**

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Arsenic	ND	0.00100		mg/L	1	4/8/2014

TOTAL MERCURY - 7470A Analyst: **EC**

Prep Method: **Prep Date:**

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Mercury	ND	0.000200		mg/L	1	4/1/2014

SEMIVOLATILE ORGANICS - SW8270C Analyst: **ZYZ**

Prep Method: **(SW3510)** **Prep Date:** **4/8/2014 8:53:21 AM**

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Acenaphthene	ND	1.09		µg/L	1	4/8/2014 6:33:00 PM
Acenaphthylene	ND	1.09		µg/L	1	4/8/2014 6:33:00 PM
Anthracene	ND	1.09		µg/L	1	4/8/2014 6:33:00 PM
Benz(a)Anthracene	ND	0.109		µg/L	1	4/8/2014 6:33:00 PM
Benzo(a)Pyrene	ND	0.109		µg/L	1	4/8/2014 6:33:00 PM
Benzo(b)Fluoranthene	ND	0.109		µg/L	1	4/8/2014 6:33:00 PM
Benzo(g,h,i)Perylene	ND	1.09		µg/L	1	4/8/2014 6:33:00 PM
Benzo(k)Fluoranthene	ND	0.109		µg/L	1	4/8/2014 6:33:00 PM
Bis(2-Ethylhexyl)Phthalate	ND	27.2		µg/L	1	4/8/2014 6:33:00 PM
Butyl Benzyl Phthalate	ND	27.2		µg/L	1	4/8/2014 6:33:00 PM
Chrysene	ND	1.09		µg/L	1	4/8/2014 6:33:00 PM
Dibenz(a,h)Anthracene	ND	0.109		µg/L	1	4/8/2014 6:33:00 PM
Diethyl Phthalate	ND	1.09		µg/L	1	4/8/2014 6:33:00 PM
Dimethyl Phthalate	ND	1.09		µg/L	1	4/8/2014 6:33:00 PM
Di-n-Butyl Phthalate	ND	1.09		µg/L	1	4/8/2014 6:33:00 PM
Di-n-Octyl Phthalate	ND	27.2		µg/L	1	4/8/2014 6:33:00 PM
Fluoranthene	ND	1.09		µg/L	1	4/8/2014 6:33:00 PM
Fluorene	ND	1.09		µg/L	1	4/8/2014 6:33:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	BRL	Below Reporting Limit
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
RL	Reporting Limit	S	Spike Recovery outside recovery limits

ANALYTICAL REPORT

Reported Date: 10-Apr-14

CLIENT: Germano
Lab Order: 1404001
Project: Needham Oil
Lab ID: 1404001-001

Client Sample ID: Sump
Collection Date: 4/1/2014 10:15:00 AM
Date Received: 4/1/2014
Matrix: GROUNDWATER

SEMIVOLATILE ORGANICS - SW8270C

Analyst: **ZYZ**

Prep Method: **(SW3510)** **Prep Date:** **4/8/2014 8:53:21 AM**

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Indeno(1,2,3-cd)Pyrene	ND	0.109		µg/L	1	4/8/2014 6:33:00 PM
Naphthalene	ND	1.09		µg/L	1	4/8/2014 6:33:00 PM
Pentachlorophenol	ND	27.2		µg/L	1	4/8/2014 6:33:00 PM
Phenanthrene	ND	1.09		µg/L	1	4/8/2014 6:33:00 PM
Pyrene	ND	1.09		µg/L	1	4/8/2014 6:33:00 PM
Surr: 2,4,6-Tribromophenol	34.6	15-110		%REC	1	4/8/2014 6:33:00 PM
Surr: 2-Fluorobiphenyl	50.3	30-130		%REC	1	4/8/2014 6:33:00 PM
Surr: 2-Fluorophenol	14.1	15-110	S	%REC	1	4/8/2014 6:33:00 PM
Surr: Nitrobenzene-d5	42.7	30-130		%REC	1	4/8/2014 6:33:00 PM
Surr: Phenol-d6	14.2	15-110	S	%REC	1	4/8/2014 6:33:00 PM
Surr: Terphenyl-d14	69.4	30-130		%REC	1	4/8/2014 6:33:00 PM

VOLATILE ORGANIC COMPOUNDS - SW8260B

Analyst: **ZC**

Prep Method: **Prep Date:**

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
1,1,1-Trichloroethane	ND	2.00		µg/L	1	4/2/2014 2:31:00 PM
1,1,2-Trichloroethane	ND	2.00		µg/L	1	4/2/2014 2:31:00 PM
1,1-Dichloroethane	ND	2.00		µg/L	1	4/2/2014 2:31:00 PM
1,1-Dichloroethene	ND	2.00		µg/L	1	4/2/2014 2:31:00 PM
1,2-Dibromoethane	ND	2.00		µg/L	1	4/2/2014 2:31:00 PM
1,2-Dichlorobenzene	ND	2.00		µg/L	1	4/2/2014 2:31:00 PM
1,2-Dichloroethane	ND	2.00		µg/L	1	4/2/2014 2:31:00 PM
1,3-Dichlorobenzene	ND	2.00		µg/L	1	4/2/2014 2:31:00 PM
1,4-Dichlorobenzene	ND	2.00		µg/L	1	4/2/2014 2:31:00 PM
1,4-Dioxane	ND	500		µg/L	1	4/2/2014 2:31:00 PM
2-Methoxy-2-Methylbutane (TAME)	ND	2.00		µg/L	1	4/2/2014 2:31:00 PM
Acetone	ND	10.0		µg/L	1	4/2/2014 2:31:00 PM
Benzene	ND	2.00		µg/L	1	4/2/2014 2:31:00 PM
Carbon Tetrachloride	ND	2.00		µg/L	1	4/2/2014 2:31:00 PM
cis-1,2-Dichloroethene	*11.2*	2.00		µg/L	1	4/2/2014 2:31:00 PM
Ethylbenzene	ND	2.00		µg/L	1	4/2/2014 2:31:00 PM
Methyl Tert-Butyl Ether	ND	2.00		µg/L	1	4/2/2014 2:31:00 PM
Methylene Chloride	ND	2.00		µg/L	1	4/2/2014 2:31:00 PM
Naphthalene	ND	2.00		µg/L	1	4/2/2014 2:31:00 PM
t-Butyl Alcohol	ND	20.0		µg/L	1	4/2/2014 2:31:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	BRL	Below Reporting Limit
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
RL	Reporting Limit	S	Spike Recovery outside recovery limits

ANALYTICAL REPORT

Reported Date: 10-Apr-14

CLIENT:	Germano	**Client Sample ID:**	Sump
Lab Order:	1404001	**Collection Date:**	4/1/2014 10:15:00 AM
Project:	Needham Oil	**Date Received:**	4/1/2014
Lab ID:	1404001-001	**Matrix:**	GROUNDWATER

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
VOLATILE ORGANIC COMPOUNDS - SW8260B						Analyst: **ZC**
Prep Method:			Prep Date:			
Tetrachloroethene	*185*	20.0		µg/L	10	4/3/2014 12:49:00 PM
Toluene	ND	2.00		µg/L	1	4/2/2014 2:31:00 PM
Trichloroethene	*6.38*	2.00		µg/L	1	4/2/2014 2:31:00 PM
Vinyl Chloride	ND	2.00		µg/L	1	4/2/2014 2:31:00 PM
Xylenes, Total	ND	2.00		µg/L	1	4/2/2014 2:31:00 PM
Surr: 1,2-Dichloroethane-d4	94.4	70-130		%REC	1	4/2/2014 2:31:00 PM
Surr: 1,2-Dichloroethane-d4	87.8	70-130		%REC	10	4/3/2014 12:49:00 PM
Surr: 4-Bromofluorobenzene	108	70-130		%REC	10	4/3/2014 12:49:00 PM
Surr: 4-Bromofluorobenzene	118	70-130		%REC	1	4/2/2014 2:31:00 PM
Surr: Dibromofluoromethane	73.2	70-130		%REC	1	4/2/2014 2:31:00 PM
Surr: Dibromofluoromethane	70.8	70-130		%REC	10	4/3/2014 12:49:00 PM
Surr: Toluene-d8	93.8	70-130		%REC	1	4/2/2014 2:31:00 PM
Surr: Toluene-d8	96.5	70-130		%REC	10	4/3/2014 12:49:00 PM
PHENOLICS - E420.1						Analyst: **SUB**
Prep Method:			Prep Date:			
Phenolics, Total Recoverable	ND	0.0150		mg/L	1	4/3/2014
NOTES: Analyzed by Phoenix Environmental Laboratories M-CT007						
CHLORIDE - L-10-117-07-1-B						Analyst: **RP**
Prep Method:			Prep Date:			
Chloride	*105*	2.00		mg/L	2	4/7/2014
CYANIDE, TOTAL - SM4500 CN C&E						Analyst: **WFR**
Prep Method:			Prep Date:			
Cyanide, Total	ND	0.0100		mg/L	1	4/8/2014
TRIVALENT CHROMIUM IN WATER - 6010C&3500						Analyst: **RP**
Prep Method:			Prep Date:			

Qualifiers:				
	B	Analyte detected in the associated Method Blank	BRL	Below Reporting Limit
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
	J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
	RL	Reporting Limit	S	Spike Recovery outside recovery limits

ANALYTICAL REPORT

Reported Date: 10-Apr-14

CLIENT:	Germano	**Client Sample ID:**	Sump
Lab Order:	1404001	**Collection Date:**	4/1/2014 10:15:00 AM
Project:	Needham Oil	**Date Received:**	4/1/2014
Lab ID:	1404001-001	**Matrix:**	GROUNDWATER

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
TRIVALENT CHROMIUM IN WATER - 6010C&3500						Analyst: **RP**
Prep Method:			**Prep Date:**			
Trivalent Chromium,Cr3+	ND	0.050		mg/L	1	4/7/2014
HEXAVALENT CHROMIUM - SW 846 7196A						Analyst: **RP**
Prep Method:			**Prep Date:**			
Hexavalent Chromium	ND	0.0100		mg/L	1	4/1/2014 3:20:00 PM
TOTAL RESIDUAL CHLORINE - HACH 8167						Analyst: **RP**
Prep Method:			**Prep Date:**			
Total Residual Chlorine	ND	0.200	H	mg/L	1	4/2/2014 11:45:00 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	BRL	Below Reporting Limit
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J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
RL	Reporting Limit	S	Spike Recovery outside recovery limits

1404001

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CHAIN OF CUSTODY RECORD

GeoLabs, Inc. *Environmental Laboratories*
45 Johnson Lane, Braintree, MA 02184
p 781.848.7844 • f 781.848.7811
www.geolabs.com

Sample Handling: circle choice
Filtration: Done [✓ Not Needed] Lab to do
Preservation: Lab to do Y [✓ N]

Special Instructions
Sb, As, Cd, Cu, Pb, Hg, Ni, Se, Ag, Zn, Fe

Turnaround: circle one
1-day 3-day
2-day [✓ 5 7-days]

Data Delivery: circle choice (s)
Fax [✓ email]
Format: [✓ Excel] [✓ PDF]

GW-1 [✓ MCP Methods]
S-1 DEP
QC Other

Requirements: circle choice (s)
CT RCP (Reasonable Confidence Protocols)
State / [✓ Fed Program] - Criteria RGP

Client: Germano
Address: 15 Pinehurst Rd
Marshfield MA
Contact: Mark Germano

Phone: 339-793-3528
Fax:
email: mgermano916@gmail.com

Project: Needham Oil
Project PO:
Invoice to *: Client

Preservative:

COLLECTION				CONTAINER						Analysis Requested									Lab Use Only	
DATE	TIME	SAMPLED BY	SAMPLE LOCATION / ID	TYPE	QUANTITY	MATRIX	COMP	GRAB	GeoLabs SAMPLE NUMBER	VOC's	Phenols <2	PAH 1	TPH <2	PCB 1	CN 714	TSS/Cr3 7 / Cr6	Metals <2	Cr.Tri 7	TEMPERATURE	LAB pH
4/1	1015	MAG	Samp	V	2	GW		x	4001	X									8°	
				A	7				-001		X	X	X	X						
				P	4										X	X	X	X		

Matrix Codes:
GW = Ground Water
WW = Waste Water
DW = Drinking Water
SL = Sludge
S = Soil
O = Oil
A = Air
OT = Other

Received on Ice ☒

Preservatives
1 = Hcl
2 = HNO3
3 = H2SO4
4 = Na2S2O3
5 = NaOH
6 = MEOH
7 = Other

Containers:
A = Amber
G = Glass
S = Summa
B = Bag
P = Plastic
V = Voa
O = Other

Relinquished by: Mark Germano Date / Time 4/1/14 1115

Received by: Julie Peluce Date / Time 4/1/14 1115

2010730.J&P.C of CR.09/22/10 THANK YOU - WE APPRECIATE YOUR BUSINESS *All discounting will be removed after 90 days* * All Payment terms are NET 30 Days. A late payment charge of 1.5% per month or 18% per year, together with expenses above and beyond collection costs, including attorney"s fees and court costs, will be applied to balances that go beyond NET 30 days.

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