



Consultants | Engineers | Scientists

May 3, 2017

Via Electronic Mail: NPDES.Generalpermits@epa.gov

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

**RE: EPA Remediation General Permit Notice of Intent
Sargent Residence
2 Woodland Road
Northborough, Massachusetts
MassDEP RTN 2-20070
CEA File No. 0070-17**

To Whom It May Concern:

On behalf of the homeowner, Mrs. Maureen Sargent (Ms. Sargent), Corporate Environmental Advisors (CEA) respectfully submits this EPA Remediation General Permit (RGP) Notice of Intent (NOI) submittal for the above-referenced location (the “Site” or “subject property”). The RGP NOI submittal is provided as **Attachment A**. The Site consists of 0.293 acres of land improved with a 1,125 square foot single family home, asphalt driveway, and landscaped areas. The subject 2 Woodland Road property is located at the intersection of Woodland Road and Birch Hill Road in a residential area of Northborough, Massachusetts. Groundwater beneath the subject property has been impacted by a recent release of virgin #2 fuel oil (heating oil) from an above ground storage tank (AST) formerly located outside the residence.

Excavation of fuel oil impacted soil is proposed outside and beneath a portion of the onsite residence. It is anticipated that proposed excavation and temporary dewatering and groundwater treatment activities will be initiated at the Site in late May 2017. Proposed remediation activities are being performed at the Site assigned Massachusetts Department of Environmental Protection (MassDEP) Release Tracking Number (RTN) 2-20070 under an Immediate Response Action (IRA), in accordance with the Massachusetts Contingency Plan (MCP) 310 CMR 40.0000.

| | |
|---------|---|
| ADDRESS | Hartwell Business Park 127 Hartwell Street, Suite 2, West Boylston, MA 01583 |
| TEL | 508.835.8822 |
| FAX | 508.835.8812 |
| WEB | www.cea-inc.com |

This Notice of Intent is being submitted in order to obtain a permit for the short term (temporary) discharge of treated groundwater to surface water. Based on available information groundwater has been measured at the Site at depths ranging from approximately 5.62 feet to 11 feet below grade. Therefore, it is anticipated that dewatering activities and corresponding treatment of such using a temporary groundwater treatment system will be necessary to depress the groundwater table at the Site during subsurface excavation activities. A Site Locus is provided as **Figure 1** and a Site Layout is provided as **Figure 2**. The attached Site Locus (**Figure 1**) depicts the subject property with respect to surrounding topography and the Site Layout (**Figure 2**) depicts pertinent Site features. The attached MassDEP Bureau of Waste Site Cleanup (BWSC) Phase 1 Site Assessment Map provided as **Figure 3** depicts surface water features and sensitive receptors located within an approximate 500 foot radius and half-mile radius of the site.

GROUNDWATER TREATMENT SYSTEM DESIGN

The proposed groundwater treatment system to be located on-site shall consist of an electric submersible pump which will pump groundwater from a temporary dewatering sump or well set within the excavation area to a 21,000-gallon fractation (frac) tank for settling and temporary storage. Recovered groundwater shall be pumped from the frac tank using a submersible pump through bag filters to remove particulates and then through two (2) 2,000-pound capacity liquid phase granular activated carbon adsorption (LGACA) vessels plumbed in series. The treated groundwater will pass through a flow meter and flow totalizer prior to being discharged to a storm drain catch basin located along the southwest side of the subject property within the Birch Hill Road roadway layout. Information provided by the Town of Northborough Department of Public Works (DPW) indicates that this storm drain is connected to the underground drainage system within the Birch Hill Road layout and discharges to the ground surface and unnamed freshwater wetland area, located approximately 150 feet southwest of the Site. A process and instrumentation diagram (P&ID) of the proposed groundwater treatment system is provided as **Figure 4**. The proposed treated water discharge location is shown on **Figure 2**.

The average flow rate of the treated water discharge from the system to the storm drain system is expected to be less than 50 gallons per minute (gpm). The pumping capacity of the groundwater treatment system is 75 gpm based upon the capacity of the submersible pumps. The groundwater treatment system shall be inspected, monitored and sampled by a Grade II Wastewater Treatment Plant Operator as required in accordance with the RGP. Groundwater samples shall be collected from the influent and effluent (treated water) prior to discharge for analysis by a Massachusetts-certified laboratory for contaminants of concern and any additional monitoring parameters required by the RGP. In addition, groundwater samples shall also be collected from the midpoint (between LGAC units) for analysis by a Massachusetts-certified laboratory to further monitor the groundwater treatment system for potential break through of the liquid phase carbon.



GROUNDWATER PRE-CHARACTERIZATION ANALYSIS

Groundwater samples were collected on January 17, 2017 from recently installed on-site monitoring wells MW-2 and MW-3 to evaluate concentrations of fuel oil related petroleum compounds in groundwater. On March 22, 2017 supplemental groundwater samples were collected from select groundwater monitoring well MW-1 to further evaluate groundwater quality. The January 17, 2017 samples were submitted to New England Testing Laboratory, Inc. (NETLab) under chain-of-custody protocol and analyzed for extractable petroleum hydrocarbons (EPH) and volatile petroleum hydrocarbons (VPH) via the MassDEP methods. The March 22, 2017 groundwater samples were submitted under chain-of-custody protocol to NETLab for analysis of select RGP parameters including ammonia, chloride, total suspended solids (TSS), total metals, cyanide, volatile organic compounds (VOCs), semi-VOCs (SVOCs)/ polycyclic aromatic hydrocarbons (PAHs), and total petroleum hydrocarbons (TPH) via the corresponding EPA methodologies. Refer to the laboratory analytical reports included in **Attachment B** for details of the RGP parameters, EPA methodologies and groundwater analytical results.

The attached **Table 1** summarizes monitoring well gauging and light non-aqueous phase liquid (LNAPL) thickness data, and attached **Tables 2A and 2B** summarize the January 2017 EPH and VPH analytical results for untreated monitoring well groundwater samples. The groundwater analytical results for untreated/ unfiltered groundwater samples collected from monitoring well MW-1 on March 22, 2017 for RGP parameters are summarized in the enclosed RGP NOI data summary section (Pages 18 to 20 in the NOI, **Attachment A**). The March 2017 laboratory analytical results for the untreated groundwater sample (MW-1) are compared to the corresponding RGP effluent limitations summarized in the enclosed NOI data summary. The RGP effluent limitations were obtained from the RGP Table 2 Chemical-Specific Effluent Limitations for Category I – Petroleum Related Site Remediation, found at (<https://www3.epa.gov/region1/npdes/rgp.html>).

Referring to the NOI data summary included in **Attachment A**, the analytical results for the untreated/ unfiltered groundwater sample (MW-1) detected TSS, trivalent chromium, total iron, total benzene, toluene, ethylbenzene and xylenes (BTEX), benzene, total group II PAHs, and naphthalene concentrations above the corresponding EPA RGP technology-based effluent limitation (TBEL) and/or water quality-based effluent limitation (WQBEL) available for this report. These exceedances of RGP effluent limitations in the untreated groundwater sample (MW-1) are most likely attributable to silt in the unfiltered groundwater sample and not representative of actual groundwater (soluble) concentrations. However, it is anticipated that the proposed groundwater treatment system will reduce concentrations of TSS, benzene, total BTEX, total iron, trivalent chromium, PAHs and naphthalene below available RGP effluent limitations in treated groundwater prior to discharge. Based on available information, TSS, benzene, total BTEX, total iron, total group II PAHs, naphthalene and/or trivalent chromium should be subject to monitoring requirements.



RECEIVING WATERS INFORMATION

The receiving water for the treated groundwater discharge is an unnamed freshwater wetland and perennial stream, located approximately 150 feet southwest of the Site. CEA consulted the online United States Geological Survey (USGS) StreamStats program (http://streamstatsags.cr.usgs.gov/v3_beta/BCreport.htm) and USGS personnel to determine the 7Q10 flow rate at the discharge location. No stream gage information was identified in the vicinity of the proposed discharge point. In the absence of stream gage information a StreamStats Flow Statistics Ungaged Report was prepared for the proposed discharge point (located at 42.3089N, -71.6518W) at the drainage system outfall and wetland area located to the southwest of the site in Northborough, MA. Data obtained from the StreamStats Flow Statistics Ungaged Report indicates that the calculated 7Q10 flow rate for this wetland area basin is 0.00309 cubic feet per second (cfs). A copy of the StreamStats Flow Statistics Ungaged Report is provided in **Attachment C**.

RECEIVING WATER CLASSIFICATION

According to 314 CMR 4.06, the freshwater wetland where the proposed drainage system outfall is located is designated as Class B High Quality Waters for inland waters, since the wetland does not border a Class A, B, SB or SA Outstanding Resource Waters. The freshwater wetland drains into a perennial stream that flows into the Hop Brook. The Hop Brook is a tributary to the Assabet River. The Assabet River is classified as a Class B surface water.

THREATENED OR ENDANGERED SPECIES OR CRITICAL HABITAT

According to the Massachusetts Geographic Information Systems (MassGIS) and online MassDEP Phase 1 Site Assessment Map (<http://maps.massgis.state.ma.us/images/dep/mcp/mcp.htm>) and Natural Heritage Endangered Species Program (NHESP) online maps, no Priority Habitat of Rare Species or Estimated Habitats of Rare Wildlife are located within the work area or at the proposed groundwater discharge location. Also, the MassGIS maps do not depict any Areas of Critical Environmental Concern on the Site or within one-half mile of the Site. Copies of the MassDEP Phase I Site Assessment Map (**Figure 3**) is attached and the NHESP maps are provided as **Attachment D**.

As part of the Endangered Species Act eligibility determination CEA contacted the United States Department of the Interior, Fish and Wildlife Services (FWS) and requested a list of threatened and endangered species that may occur in the proposed project location and/or that may be affected by the proposed project. The FWS provided the requested list which indicates that one (1) threatened or endangered species, the northern long-eared bat (*myotis septentrionalis*), was identified and should be considered in an effects analysis for the project. On May 2, 2017 Mr. Adam Last of CEA contacted the New England Field Office of the FWS and spoke with Ms. Maria Tur in the Endangered Species group of FWS. The proposed remediation project does not



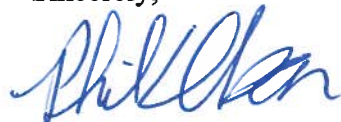
involve the removal of any trees. According to Ms. Tur, because no trees will be cut there will be no effect to the northern long eared bat, which roosts in trees during non-winter months. Therefore, the proposed project discharge meets FWS Criterion B. A copy of the FWS letter is included in **Attachment E**.

REVIEW OF NATIONAL REGISTER OF HISTORIC PLACES

A listing of all Historic Places within the Town of Northborough was obtained from the Massachusetts Cultural Resources Information System (MACRIS) online database at <http://mhc-macris.net/> on March 24, 2017. A copy of the MACRIS historic places report is provided as **Attachment F**. The database indicates that numerous historic places are located in the Town of Northborough, however no historic places are located in the immediate vicinity of the Site. The project does not involve the demolition or rehabilitation of any of the historic places identified in the database. Also, historic properties are not affected by the discharge or identified in the path of the discharges regulated by this permit, and are not identified where installation or construction of treatment systems or best management practices to control such discharges are planned.

If you have any questions or require additional information, please do not hesitate to contact either of the undersigned via telephone at (508) 835-8822.

Sincerely,



Phil Olson
Senior Environmental Geologist



Adam Last, P.E., LSP
Principal Engineer

cc: Ms. Shelley Puleo (via email: puleo.shelley@epa.gov)
Ms. Cathy Vakalopoulos (via email: Catherine.Vakalopoulos@state.ma.us)
Ms. Shauna Little (via email: little.shauna@epa.gov)
Mr. Scott Charpentier (via email: mailto:scharpentier@town.northborough.ma.us)
Ms. Maureen Sargent, 2 Woodland Road, Northborough, MA

Attachments: RGP NOI Submittal, Figures, Laboratory Analytical Reports, Tables, StreamStats Flow Statics Report, NHESP Maps, FWS Endangered Species Determination, MACRIS Historic Places Report



ATTACHMENT A

**EPA Remediation General Permit (RGP)
Notice of Intent (NOI) Submittal**

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

A. General site information:

| | | | | | | | | | | | | | |
|---|--|---|---|------|------------|--------|--|---------------------------------|--|--|-------|--------|------|
| 1. Name of site: | Site address: Street: <table border="1" data-bbox="888 475 1950 557"> <tr> <td data-bbox="888 475 1591 557">City:</td><td data-bbox="1591 475 1724 557">State:</td><td data-bbox="1724 475 1950 557">Zip:</td></tr> </table> | City: | State: | Zip: | | | | | | | | | |
| City: | State: | Zip: | | | | | | | | | | | |
| 2. Site owner Owner is (check one): <input type="checkbox"/> Federal <input type="checkbox"/> State/Tribal <input type="checkbox"/> Private <input type="checkbox"/> Other; if so, specify: | <table border="1"> <tr> <td colspan="3" data-bbox="888 557 1950 630">Contact Person:</td></tr> <tr> <td data-bbox="888 630 1461 695">Telephone:</td><td colspan="2" data-bbox="1461 630 1950 695">Email:</td></tr> <tr> <td colspan="3" data-bbox="888 695 1950 800">Mailing address: Street:</td></tr> <tr> <td data-bbox="888 800 1591 875">City:</td><td data-bbox="1591 800 1724 875">State:</td><td data-bbox="1724 800 1950 875">Zip:</td></tr> </table> | Contact Person: | | | Telephone: | Email: | | Mailing address: Street: | | | City: | State: | Zip: |
| Contact Person: | | | | | | | | | | | | | |
| Telephone: | Email: | | | | | | | | | | | | |
| Mailing address: Street: | | | | | | | | | | | | | |
| City: | State: | Zip: | | | | | | | | | | | |
| 3. Site operator, if different than owner | <table border="1"> <tr> <td colspan="3" data-bbox="888 875 1950 940">Contact Person:</td></tr> <tr> <td data-bbox="888 940 1461 997">Telephone:</td><td colspan="2" data-bbox="1461 940 1950 997">Email:</td></tr> <tr> <td colspan="3" data-bbox="888 997 1950 1094">Mailing address: Street:</td></tr> <tr> <td data-bbox="888 1094 1591 1151">City:</td><td data-bbox="1591 1094 1724 1151">State:</td><td data-bbox="1724 1094 1950 1151">Zip:</td></tr> </table> | Contact Person: | | | Telephone: | Email: | | Mailing address: Street: | | | City: | State: | Zip: |
| Contact Person: | | | | | | | | | | | | | |
| Telephone: | Email: | | | | | | | | | | | | |
| Mailing address: Street: | | | | | | | | | | | | | |
| City: | State: | Zip: | | | | | | | | | | | |
| 4. NPDES permit number assigned by EPA: NPDES permit is (check all that apply): <input type="checkbox"/> RGP <input type="checkbox"/> DGP <input type="checkbox"/> CGP <input type="checkbox"/> MSGP <input type="checkbox"/> Individual NPDES permit <input type="checkbox"/> Other; if so, specify: | 5. Other regulatory program(s) that apply to the site (check all that apply): <table border="0"> <tr> <td data-bbox="888 1208 1461 1403"> <input type="checkbox"/> MA Chapter 21e; list RTN(s): <div style="border: 1px solid red; padding: 2px; display: inline-block; color: red;">MassDEP RTN: 2-20070</div> <input type="checkbox"/> NH Groundwater Management Permit or Groundwater Release Detection Permit: </td><td data-bbox="1461 1208 1950 1403"> <input type="checkbox"/> CERCLA <input type="checkbox"/> UIC Program <input type="checkbox"/> POTW Pretreatment <input type="checkbox"/> CWA Section 404 </td></tr> </table> | <input type="checkbox"/> MA Chapter 21e; list RTN(s): <div style="border: 1px solid red; padding: 2px; display: inline-block; color: red;">MassDEP RTN: 2-20070</div> <input type="checkbox"/> NH Groundwater Management Permit or Groundwater Release Detection Permit: | <input type="checkbox"/> CERCLA <input type="checkbox"/> UIC Program <input type="checkbox"/> POTW Pretreatment <input type="checkbox"/> CWA Section 404 | | | | | | | | | | |
| <input type="checkbox"/> MA Chapter 21e; list RTN(s): <div style="border: 1px solid red; padding: 2px; display: inline-block; color: red;">MassDEP RTN: 2-20070</div> <input type="checkbox"/> NH Groundwater Management Permit or Groundwater Release Detection Permit: | <input type="checkbox"/> CERCLA <input type="checkbox"/> UIC Program <input type="checkbox"/> POTW Pretreatment <input type="checkbox"/> CWA Section 404 | | | | | | | | | | | | |

B. Receiving water information:

The freshwater wetland (receiving water) is designated as Class B High Quality Waters for inland waters, according to 314 CMR 4.06.

| | | |
|---|---|---------------------------------------|
| 1. Name of receiving water(s): | Waterbody identification of receiving water(s): | Classification of receiving water(s): |
| Receiving water is (check any that apply): <input type="checkbox"/> Outstanding Resource Water <input type="checkbox"/> Ocean Sanctuary <input type="checkbox"/> territorial sea <input type="checkbox"/> Wild and Scenic River (Assabet River) | | |
| 2. Has the operator attached a location map in accordance with the instructions in B, above? (check one): <input type="checkbox"/> Yes <input type="checkbox"/> No Are sensitive receptors present near the site? (check one): <input type="checkbox"/> Yes <input type="checkbox"/> 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. The Assabet River is in the Massachusetts 2002 Integrated List of Waters primarily for nutrients & organic enrichment/low dissolved oxygen. Phosphorus limit is 0.1 mg/l. | | |
| 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. | | |
| 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. | | |
| 6. Has the operator received confirmation from the appropriate State for the 7Q10 and dilution factor indicated? (check one): <input type="checkbox"/> Yes <input type="checkbox"/> No If yes, indicate date confirmation received: | | |
| 7. Has the operator attached a summary of receiving water sampling results as required in Part 4.2 of the RGP in accordance with the instruction in Appendix VIII? (check one): <input type="checkbox"/> Yes <input type="checkbox"/> No See attached laboratory analytical report and receiving water summary table for surface water sample SW-1 collected on 3-22-2017. | | |

C. Source water information:

| | | | |
|--|--|---|--|
| 1. Source water(s) is (check any that apply): | | | |
| <input type="checkbox"/> 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): <input type="checkbox"/> Yes <input type="checkbox"/> No | <input type="checkbox"/> 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): <input type="checkbox"/> Yes <input type="checkbox"/> No | <input type="checkbox"/> The receiving water | <input type="checkbox"/> Potable water; if so, indicate municipality or origin: <input type="checkbox"/> Other; if so, specify: |
| | | <input type="checkbox"/> A surface water other than the receiving water; if so, indicate waterbody: | |

| | |
|---|--|
| 2. Source water contaminants: | |
| a. For source waters that are contaminated groundwater or contaminated surface water, indicate are any contaminants present that are not included in the RGP? (check one): <input type="checkbox"/> Yes <input type="checkbox"/> 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): <input type="checkbox"/> Yes <input type="checkbox"/> No |
| 3. Has the source water been previously chlorinated or otherwise contains residual chlorine? (check one): <input type="checkbox"/> Yes <input type="checkbox"/> No | |

D. Discharge information

| | |
|--|--|
| 1.The discharge(s) is a(n) (check any that apply): <input type="checkbox"/> Existing discharge <input type="checkbox"/> New discharge <input type="checkbox"/> New source | |
| Outfall(s): | Outfall location(s): (Latitude, Longitude) |
| Discharges enter the receiving water(s) via (check any that apply): <input type="checkbox"/> Direct discharge to the receiving water <input type="checkbox"/> Indirect discharge, if so, specify: <input type="checkbox"/> A private storm sewer system <input type="checkbox"/> 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): <input type="checkbox"/> Yes <input type="checkbox"/> No Has the operator has received permission from the owner to use such system for discharges? (check one): <input type="checkbox"/> Yes <input type="checkbox"/> 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): <input type="checkbox"/> Yes <input type="checkbox"/> No | |
| Provide the expected start and end dates of discharge(s) (month/year): Indicate if the discharge is expected to occur over a duration of: <input type="checkbox"/> less than 12 months <input type="checkbox"/> 12 months or more <input type="checkbox"/> is an emergency discharge | |
| Has the operator attached a site plan in accordance with the instructions in D, above? (check one): <input type="checkbox"/> Yes <input type="checkbox"/> No | |

On 3-20-2017 the Northborough DPW Director was informed of the proposed groundwater treatment and discharge to the storm drain system, and DPW approved access to the outfall area using a drainage easement.

No additional requirements were available for this document.

| | |
|--|--|
| 2. Activity Category: (check all that apply) | 3. Contamination Type Category: (check all that apply) |
| <div data-bbox="197 618 678 664" style="border: 1px solid red; padding: 2px; margin-bottom: 10px;">Contaminant is virgin #2 fuel oil (heating oil)</div> <div> <input type="checkbox"/> I – Petroleum-Related Site Remediation <input type="checkbox"/> II – Non-Petroleum-Related Site Remediation <input type="checkbox"/> III – Contaminated Site Dewatering <input type="checkbox"/> IV – Dewatering of Pipelines and Tanks <input type="checkbox"/> V – Aquifer Pump Testing <input type="checkbox"/> VI – Well Development/Rehabilitation <input type="checkbox"/> VII – Collection Structure Dewatering/Remediation <input type="checkbox"/> VIII – Dredge-Related Dewatering </div> | <p style="text-align: center;">a. If Activity Category I or II: (check all that apply)</p> <div> <input type="checkbox"/> A. Inorganics <input type="checkbox"/> B. Non-Halogenated Volatile Organic Compounds <input type="checkbox"/> C. Halogenated Volatile Organic Compounds <input type="checkbox"/> D. Non-Halogenated Semi-Volatile Organic Compounds <input type="checkbox"/> E. Halogenated Semi-Volatile Organic Compounds <input type="checkbox"/> F. Fuels Parameters </div> <div data-bbox="1262 646 1793 708" style="border: 1px solid red; padding: 2px; margin-top: 5px;">See influent groundwater analytical results for MW-1 on page 18 and attached laboratory report</div> |
| | <p style="text-align: center;">b. If Activity Category III, IV, V, VI, VII or VIII: (check either G or H)</p> |
| | <div> <input type="checkbox"/> G. Sites with Known Contamination </div> <div> <input type="checkbox"/> H. Sites with Unknown Contamination </div> |
| | <div> <p>c. If Category III-G, IV-G, V-G, VI-G, VII-G or VIII-G: (check all that apply)</p> <div> <input type="checkbox"/> A. Inorganics <input type="checkbox"/> B. Non-Halogenated Volatile Organic Compounds <input type="checkbox"/> C. Halogenated Volatile Organic Compounds <input type="checkbox"/> D. Non-Halogenated Semi-Volatile Organic Compounds <input type="checkbox"/> E. Halogenated Semi-Volatile Organic Compounds <input type="checkbox"/> F. Fuels Parameters </div> </div> <div> <p>d. If Category III-H, IV-H, V-H, VI-H, VII-H or VIII-H Contamination Type Categories A through F apply</p> </div> |

4. Influent and Effluent Characteristics

[illegible]

| 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 | | | | | | | | 5.0 µg/L | --- |
| Tetrachloroethylene | | | | | | | | 5.0 µg/L | |
| cis-1,2 Dichloroethylene | | | | | | | | 70 µg/L | --- |
| Vinyl Chloride | | | | | | | | 2.0 µg/L | --- |
| D. Non-Halogenated SVOCs | | | | | | | | | |
| Total Phthalates | | | | | | | | 190 µg/L | |
| Diethylhexyl phthalate | | | | | | | | 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 | | | | | | | | | |

[illegible]

E. Treatment system information

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|---|--|
| <p>1. Indicate the type(s) of treatment that will be applied to effluent prior to discharge: (check all that apply)</p> <p><input type="checkbox"/> Adsorption/Absorption <input type="checkbox"/> Advanced Oxidation Processes <input type="checkbox"/> Air Stripping <input type="checkbox"/> Granulated Activated Carbon (“GAC”)/Liquid Phase Carbon Adsorption</p> <p><input type="checkbox"/> Ion Exchange <input type="checkbox"/> Precipitation/Coagulation/Flocculation <input type="checkbox"/> Separation/Filtration <input type="checkbox"/> Other; if so, specify:</p> | |
| <p>2. Provide a written description of all treatment system(s) or processes that will be applied to the effluent prior to discharge.</p> <p>Identify each major treatment component (check any that apply):</p> <p><input type="checkbox"/> Fractionation tanks <input type="checkbox"/> Equalization tank <input type="checkbox"/> Oil/water separator <input type="checkbox"/> Mechanical filter <input type="checkbox"/> Media filter</p> <p><input type="checkbox"/> Chemical feed tank <input type="checkbox"/> Air stripping unit <input type="checkbox"/> Bag filter <input type="checkbox"/> Other; if so, specify:</p> <p>Indicate if either of the following will occur (check any that apply):</p> <p><input type="checkbox"/> Chlorination <input type="checkbox"/> De-chlorination</p> | |
| <p>3. Provide the design flow capacity in gallons per minute (gpm) of the most limiting component.</p> <p>Indicate the most limiting component:</p> <p>Is use of a flow meter feasible? (check one): <input type="checkbox"/> Yes <input type="checkbox"/> No, if so, provide justification:</p> | |
| <p>Provide the proposed maximum effluent flow in gpm.</p> | |
| <p>Provide the average effluent flow in gpm.</p> | |
| <p>If Activity Category IV applies, indicate the estimated total volume of water that will be discharged:</p> | |
| <p>4. Has the operator attached a schematic of flow in accordance with the instructions in E, above? (check one): <input type="checkbox"/> Yes <input type="checkbox"/> No</p> | |

F. Chemical and additive information

| |
|---|
| <p>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)</p> <p><input type="checkbox"/> Algaecides/biocides <input type="checkbox"/> Antifoams <input type="checkbox"/> Coagulants <input type="checkbox"/> Corrosion/scale inhibitors <input type="checkbox"/> Disinfectants <input type="checkbox"/> Flocculants <input type="checkbox"/> Neutralizing agents <input type="checkbox"/> Oxidants <input type="checkbox"/> Oxygen <input type="checkbox"/> scavengers <input type="checkbox"/> pH conditioners <input type="checkbox"/> Bioremedial agents, including microbes <input type="checkbox"/> Chlorine or chemicals containing chlorine <input type="checkbox"/> Other; if so, specify:</p> |
| <p>2. Provide the following information for each chemical/additive, using attachments, if necessary:</p> <p>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)).</p> |
| <p>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): <input type="checkbox"/> Yes <input type="checkbox"/> 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): <input type="checkbox"/> Yes <input type="checkbox"/> No</p> |

G. Endangered Species Act eligibility determination

| |
|---|
| <p>1. Indicate under which criterion the discharge(s) is eligible for coverage under this general permit:</p> <p><input type="checkbox"/> 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”.</p> <p><input type="checkbox"/> 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): <input type="checkbox"/> Yes <input type="checkbox"/> No; if no, is consultation underway? (check one): <input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p><input type="checkbox"/> 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) <input type="checkbox"/> the operator <input type="checkbox"/> EPA <input type="checkbox"/> Other; if so, specify:</p> |
|---|

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

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

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

H. National Historic Preservation Act eligibility determination

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

- ☐ **Criterion A:** No historic properties are present. The discharges and discharge-related activities (e.g., BMPs) do not have the potential to cause effects on historic properties.
- ☐ **Criterion B:** Historic properties are present. Discharges and discharge related activities do not have the potential to cause effects on historic properties.
- ☐ **Criterion C:** Historic properties are present. The discharges and discharge-related activities have the potential to have an effect or will have an adverse effect on historic properties.

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

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

I. Supplemental information

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

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

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

According to EPA a copy of a Best Management Practices Plan (BMPP) only needs to be onsite and not included in the NOI submittal to EPA.

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.

A Best Management Practices Plan (BMPP) has been prepared and a copy will be maintained on-site.
BMPP certification statement:

Notification provided to the appropriate State, including a copy of this NOI, if required.

Check one: Yes ☒ No ☐

The Northborough DPW Director was informed of proposed discharge to storm drain system on 3-20-2017.

Notification provided to the municipality in which the discharge is located, including a copy of this NOI, if requested.

Check one: Yes ☒ No ☐

Authorization to be obtained from the Town DPW pending client and insurance company authorization anticipated for May 2017.

Notification provided to the owner of a private or municipal storm sewer system, if such system is used for site discharges, including a copy of this NOI, if requested.

Check one: Yes ☒ No ☐ NA ☐

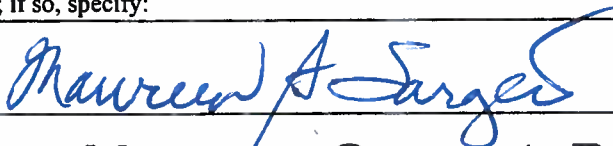
Permission obtained from the owner of a private or municipal storm sewer system, if such system is used for site discharges. If yes, attach additional conditions. If no, attach explanation and timeframe for obtaining permission.

Check one: Yes ☐ No ☐ NA ☐

Notification provided to the owner/operator of the area associated with activities covered by an additional discharge permit(s). Additional discharge permit is (check one): ☐ RGP ☐ DGP ☐ CGP ☐ MSGP ☐ Individual NPDES permit
☐ Other; if so, specify:

Check one: Yes ☐ No ☐ NA ☒

Signature:



Date:

5/3/17

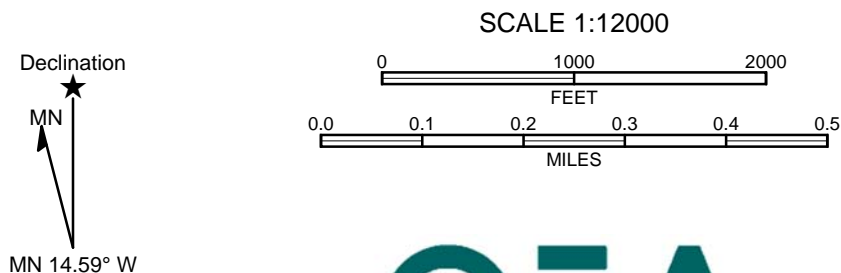
Print Name and Title: **Maureen Sargent, Property Owner**

FIGURES





MARLBOROUGH Topographic 1983 42071-C5-TM-025 National Geodetic Vertical Datum 1929



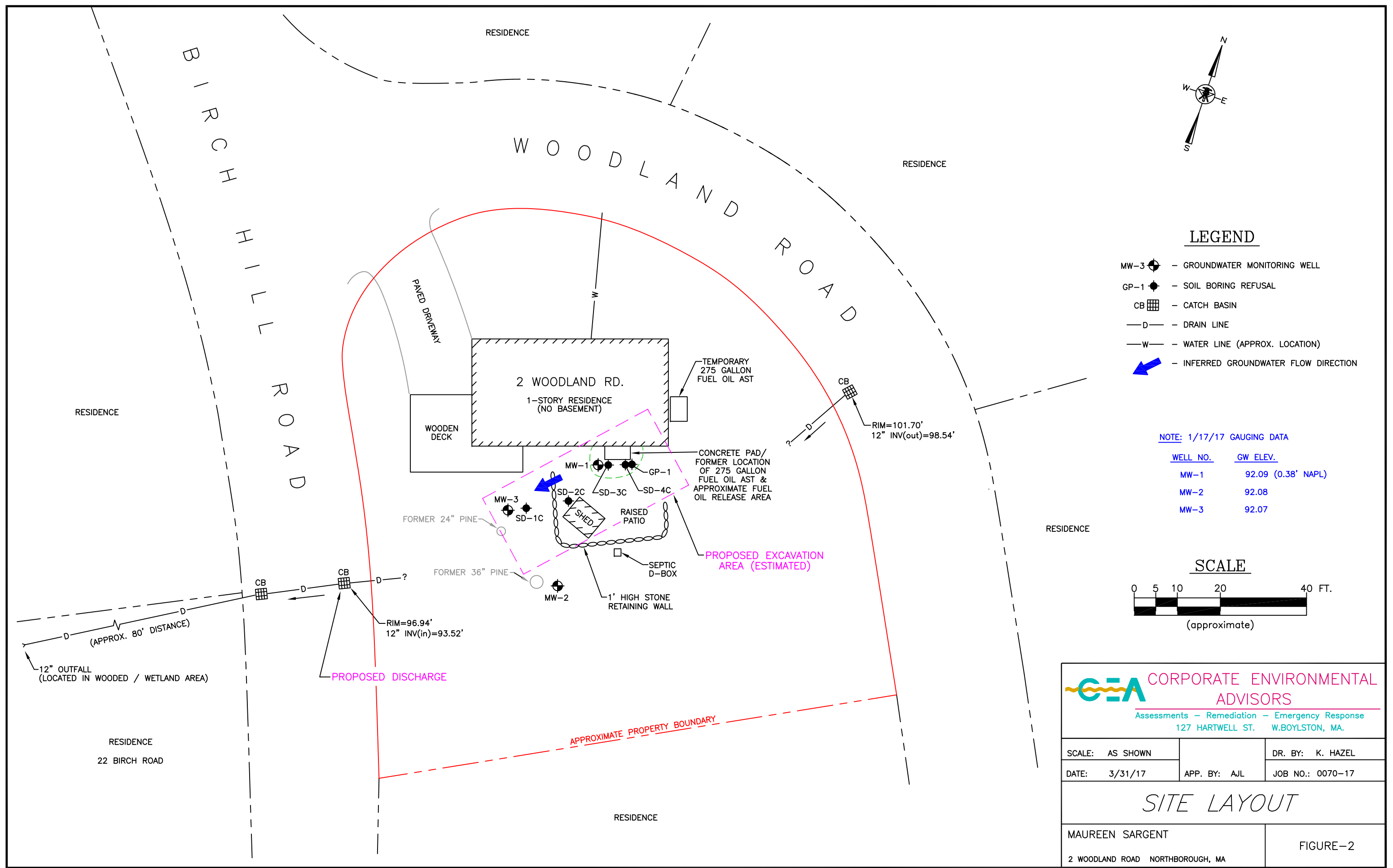
Site Coordinates:
042° 18' 44.99" N, 071°
37' 30.00" W

Site Location:
2 Woodland Road
Northborough, MA



Corporate Environmental Advisors
127 Hartwell Street West Boylston, MA
1-800-358-7960

Figure-1
Site Locus Map



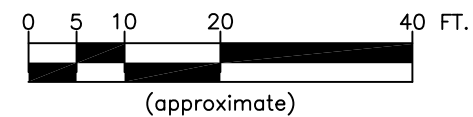
LEGEND


- MW-3 - GROUNDWATER MONITORING WELL
- GP-1 - SOIL BORING REFUSAL
- CB - CATCH BASIN
- D - DRAIN LINE
- W - WATER LINE (APPROX. LOCATION)
- INFERRED GROUNDWATER FLOW DIRECTION

NOTE: 1/17/17 GAUGING DATA

| WELL NO. | GW ELEV. |
|----------|--------------------|
| MW-1 | 92.09 (0.38' NAPL) |
| MW-2 | 92.08 |
| MW-3 | 92.07 |

SCALE



**CORPORATE ENVIRONMENTAL ADVISORS**
Assessments – Remediation – Emergency Response
127 HARTWELL ST. W.BOYLSTON, MA.

| | | |
|-----------------|--------------|------------------|
| SCALE: AS SHOWN | | DR. BY: K. HAZEL |
| DATE: 3/31/17 | APP. BY: AJL | JOB NO.: 0070-17 |

SITE LAYOUT

MAUREEN SARGENT

2 WOODLAND ROAD NORTHBOROUGH, MA

FIGURE-2

MassDEP - Bureau of Waste Site Cleanup

Site Information:

SARGENT RESIDENCE
2 WOODLAND ROAD NORTHBOROUGH, MA
2-000020070

NAD83 UTM Meters:

4687546mN, 281477mE (Zone: 19)
January 12, 2017

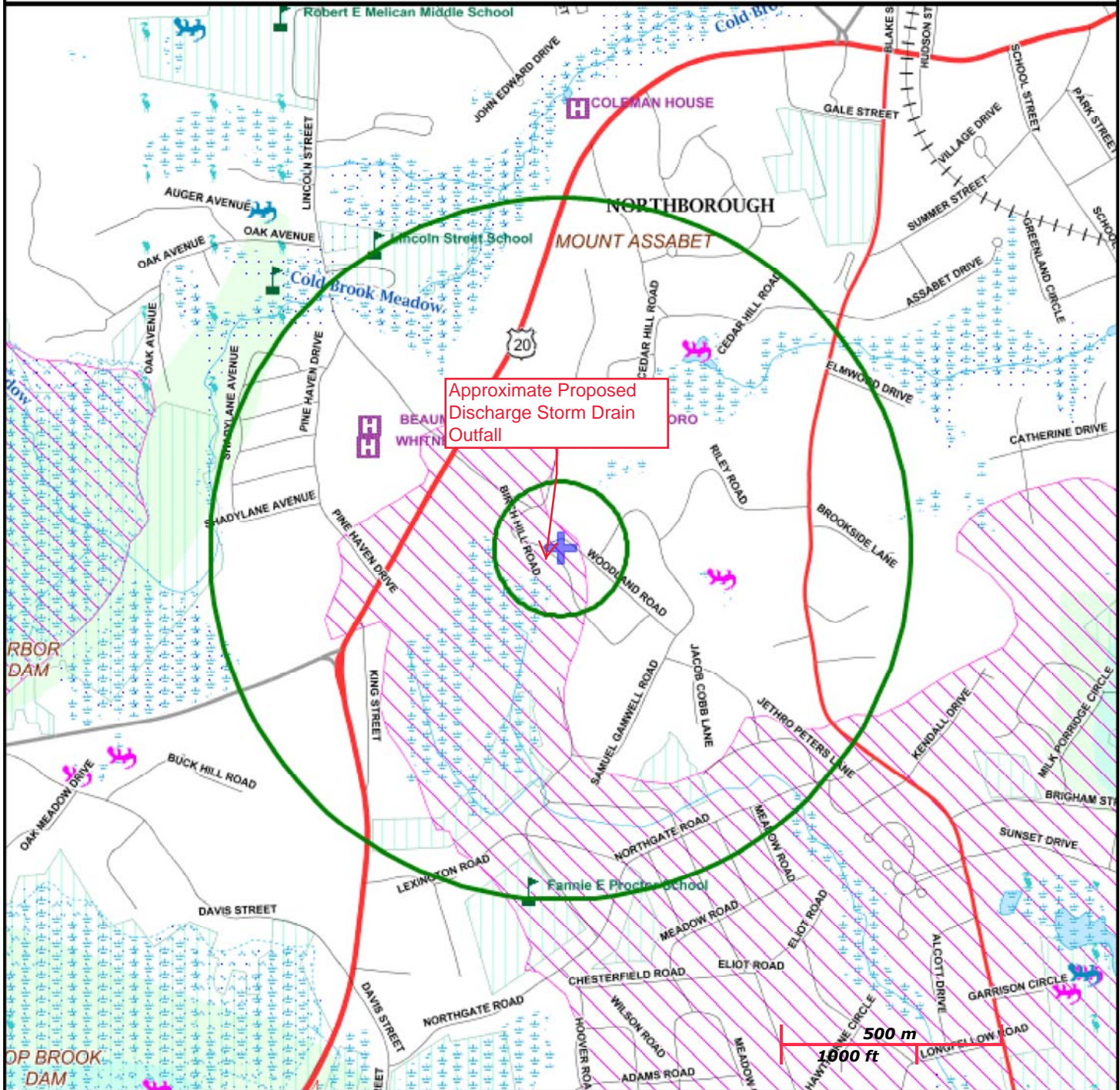
Phase 1 Site Assessment Map: 500 feet & 0.5 Mile Radii

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



MassDEP

Commonwealth of Massachusetts
Department of Environmental Protection



Approximate Proposed
Discharge Storm Drain
Outfall

500 m
1000 ft

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

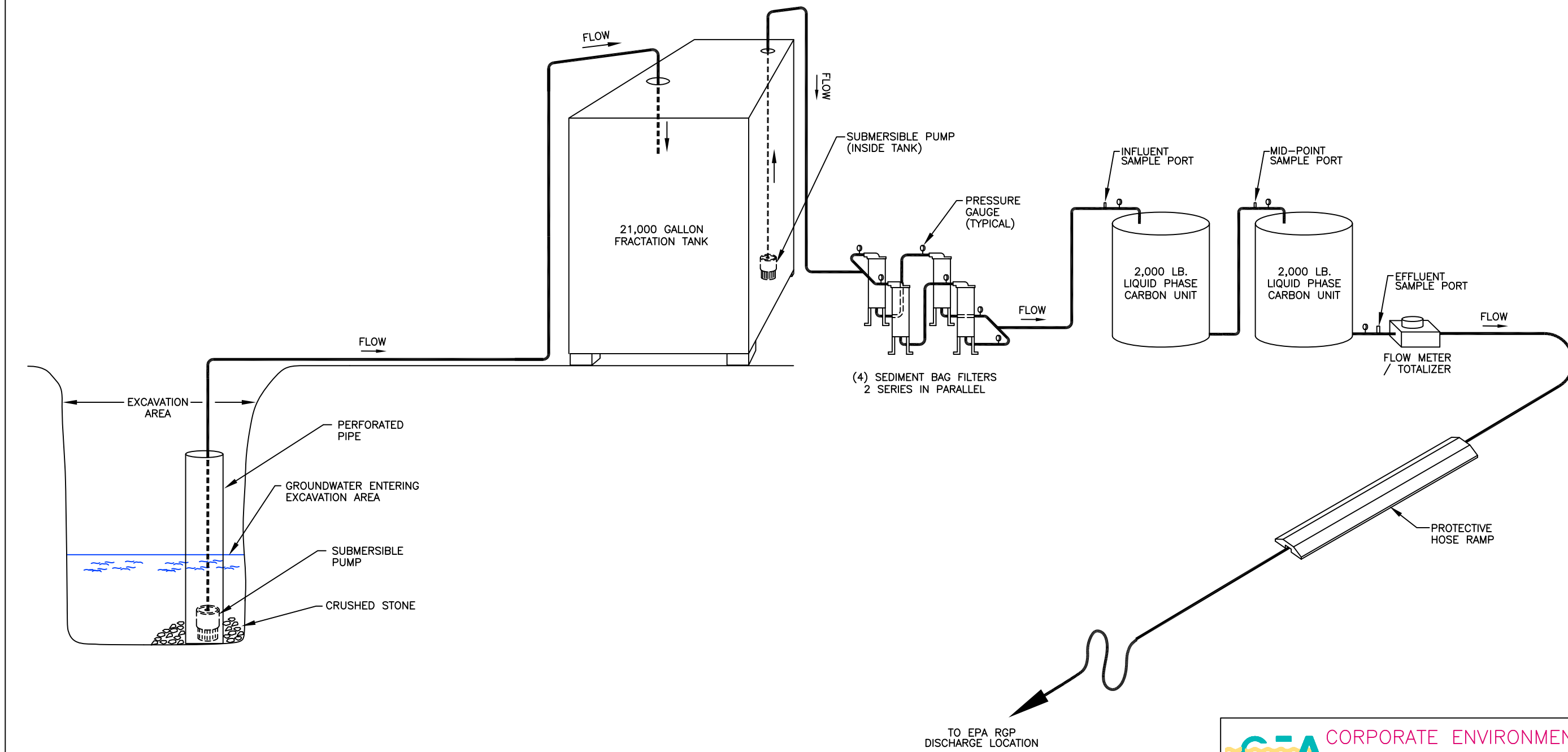
Hydrography: Open Water, PWS Reservoir, Tidal Flat


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.




**CORPORATE ENVIRONMENTAL
ADVISORS**
Assessments – Remediation – Emergency Response
127 HARTWELL ST. W.BOYLSTON, MA.

| | | |
|--|--------------|------------------|
| SCALE: NOT TO SCALE | | DR. BY: K. HAZEL |
| DATE: 3/31/17 | APP. BY: AJL | JOB NO.: 0070-17 |
| EXCAVATION DEWATERING PROCESS & INSTRUMENTATION DIAGRAM | | |
| MAUREEN SARGENT 2 WOODLAND ROAD NORTHBOROUGH, MA | | FIGURE-4 |

ATTACHMENT B

Laboratory Analytical Reports





REPORT OF ANALYTICAL RESULTS

NETLAB Case Number D0322-11 Revised

Prepared for:

Attn: Adam Last
Corporate Environmental Advisors, Inc.
127 Hartwell Street
West Boylston, MA 01583

Report Date: May 8, 2017

Director
New England Testing Laboratory, Inc.
Lab # RI010

NEW ENGLAND TESTING LABORATORY, INC.

59 Greenhill Street, West Warwick, RI 02893

(401) 353-3420

SAMPLES SUBMITTED and REQUEST FOR ANALYSIS:

The samples listed in Table I were submitted to New England Testing Laboratory on March 22, 2017. The group of samples appearing in this report was assigned an internal identification number (case number) for laboratory information management purposes. The client's designations for the individual samples, along with our case numbers, are used to identify the samples in this report. This report of analytical results pertains only to the sample(s) provided to us by the client which are indicated on the custody record. The case number for this sample submission is D0322-11.

Custody records are included in this report.

Site: 0070-17 – Maureen Sargent, 2 Woodland Road, Northboro, MA

TABLE I, Samples Submitted

| Sample ID | Date Sampled | Matrix | Analysis Requested |
|-----------|--------------|--------|--------------------|
| | | | |
| MW-1 | 3/22/2017 | Water | Table II |
| SW-1 | 3/22/2017 | Water | Table III |

TABLE II, Analysis and Methods

| ANALYSIS | DETERMINATIVE METHOD |
|---------------------------------|-------------------------------|
| Ammonia | SM4500-NH ₃ D-1997 |
| Chloride | SM4500-Cl B-1997 |
| Cyanide | SM4500-CN E-1999 |
| Hexavalent Chromium | SM3500-Cr B-2009 |
| Trivalent Chromium | 200.7-1994 |
| Total Suspended Solids | 2540D-1997 |
| Hardness | 200.7-1994 |
| Total Metals | |
| Antimony | 200.7-1994 |
| Arsenic | 200.7-1994 |
| Cadmium | 200.7-1994 |
| Copper | 200.7-1994 |
| Iron | 200.7-1994 |
| Lead | 200.7-1994 |
| Mercury | 245.1-1994 |
| Nickel | 200.7-1994 |
| Selenium | 200.7-1994 |
| Silver | 200.7-1994 |
| Zinc | 200.7-1994 |
| Ethylene Dibromide | 504.1 |
| Ethanol | 8100M |
| Total Petroleum Hydrocarbons | 1664 |
| Semi-Volatile Organic Compounds | 625 |
| Volatile Organic Compounds | 624 |



New England Testing Laboratory, Inc.

TABLE III, Analysis and Methods

| ANALYSIS | DETERMINATIVE METHOD |
|-----------------|------------------------------|
| Ammonia | SM4500-NH ₃ D1997 |
| pH | SM4500-H ⁺ B-2000 |
| Hardness | 200.7-1994 |

These methods are documented in:

Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW-846, USEPA/OSW.

CASE NARRATIVE:

Sample Receipt

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

Metals

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

Ethylene Dibromide

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

Semi-volatile Compounds

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

Volatile Organic Compounds

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

Due to matrix interference, client-specified reporting limits for "Methylene Chloride", "1,1,1-Trichloroethane", and "1,4-Dioxane" could not be met.

Wet Chemistry

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

MW-1

| Parameter | Result, mg/L | Reporting Limit | Date Analyzed |
|------------------------------|--------------|-----------------|-------------------|
| Ammonia | ND | 0.1 | 3/23/2017 |
| Chloride | 376.2 | 0.1 | 3/23/2017 |
| Cyanide | ND | 0.005 | 3/23/2017 |
| Ethanol | ND | 10 | 3/31/2017 |
| Hexavalent Chromium | ND | 0.001 | 3/22/2017 @ 16:00 |
| Trivalent Chromium | 0.328 | 0.001 | 4/4/2017 |
| Total Suspended Solids | 3616 | 5 | 3/23/2017 |
| Antimony | ND | 0.001 | 4/4/2017 |
| Arsenic | 0.043 | 0.001 | 4/4/2017 |
| Cadmium | 0.0010 | 0.0002 | 4/3/2017 |
| Copper | 0.1113 | 0.0002 | 4/4/2017 |
| Iron | 146 | 0.055 | 4/4/2017 |
| Lead | 0.0306 | 0.0002 | 4/4/2017 |
| Mercury | ND | 0.0002 | 3/24/2017 |
| Nickel | 0.086 | 0.001 | 4/4/2017 |
| Selenium | ND | 0.001 | 4/4/2017 |
| Silver | 0.0005 | 0.0002 | 4/4/2017 |
| Zinc | 0.177 | 0.002 | 4/4/2017 |
| Total Petroleum Hydrocarbons | 794 | 2 | 3/29/2017 |
| Hardness | 195.4 | 0.33 | 3/24/2017 |

SW-1

| Parameter | Result, mg/L | Reporting Limit | Date Analyzed |
|-----------|--------------|-----------------|-------------------|
| Ammonia | ND | 0.1 | 3/23/2017 |
| pH | 5.89 | NA | 3/22/2017 @ 15:30 |
| Hardness | 80.0 | 0.33 | 3/24/2017 |

ND = Not Detected

NA = Not Applicable



| | | |
|-------------------------------------|------------------------------|------------------------|
| Sample: MW-1 | | Analyst's Initials: BJ |
| Case No. D0322-11 | | |
| Date Collected: 3/22/2017 | | |
| Sample Matrix: Water | | |
| Subject: Ethylene Dibromide | | |
| Prep Method: NA | Date Extracted | Date Analyzed |
| Analytical Method: EPA 504.1 | 3/27/2017 | 3/27/2017 |
| | | |
| Compound | Concentration, ug/l (ppb) | Reporting Limit |
| | | |
| Ethylene Dibromide | ND | 0.01 |
| | | |

ND = Not Detected

Sample: MW4
Date Sampled: 3/22/2017

Case No. D0322-11
Date Extracted: 3/20/2017
Date Analyzed: 3/30/2017

Subject: Acid and Base/Neutral Extractable Compounds
Method: EPA 625

| <u>Base/Neutral Compounds</u> | <u>Concentration</u> <u>ug/l (ppb)</u> | <u>Reporting</u> <u>Limit</u> |
|-------------------------------|---|----------------------------------|
| Benzo(a)anthracene | N.D. | 2.0 |
| Benzo(b)fluoranthene | N.D. | 2.0 |
| Benzo(k)fluoranthene | N.D. | 2.0 |
| Benzo(a)pyrene | N.D. | 2.0 |
| Bis(2-ethylhexyl)phthalate | N.D. | 25.0 |
| Chrysene | N.D. | 2.0 |
| Dibenzo(a,h)anthracene | N.D. | 2.0 |
| Indeno(1,2,3-cd)pyrene | N.D. | 2.0 |
| Naphthalene | 103 | 2.0 |
| Total Phthalates | N.D. | 25.0 |
| Total Group I PAH's | N.D. | 2.0 |
| Total Group II PAH's | 269 | 25.0 |

Acid Compounds

| <u>Acid Compounds</u> | <u>Concentration</u> | <u>Reporting</u> |
|-----------------------|----------------------|------------------|
| Pentachlorophenol | N.D. | 50.0 |
| Phenol | N.D. | 25.0 |

Surrogates:

| <u>Compound</u> | <u>% Recovery</u> | <u>Limits</u> |
|----------------------|-------------------|---------------|
| Nitrobenzene d5 | 114 | 33-130 |
| 2-Fluorobiphenyl | 79 | 35-130 |
| p-Terphenyl d14 | 89 | 50-130 |
| Phenol d6 | 27 | 10-83 |
| 2,4,6-Tribromophenol | 75 | 44-120 |
| 2-Fluorophenol | 30 | 10-81 |

Sample: MW-1

Case No. D0322-11

Date Analyzed: 3/24/2017

Subject: Volatile Organic Compounds

Method: EPA 624

| <u>Compound</u> | <u>Concentration</u> <u>ug/L (ppb)</u> | <u>Reporting</u> <u>Limit</u> |
|-------------------------|---|----------------------------------|
| Benzene | 5.7 | 2.0 |
| Carbon tetrachloride | N.D. | 1.0J |
| 1,1-Dichloroethane | N.D. | 1.0J |
| 1,2-Dichloroethane | N.D. | 1.0J |
| 1,1-Dichloroethene | N.D. | 1.0J |
| cis-1,2-Dichloroethene | N.D. | 1.0J |
| Methylene chloride | N.D. | 2.0 |
| Tetrachloroethene | 2.2 | 2.0 |
| 1,1,1-Trichloroethane | N.D. | 2.0 |
| 1,1,2-Trichloroethane | N.D. | 1.0J |
| Trichloroethene | N.D. | 1.0J |
| Vinyl chloride | N.D. | 1.0J |
| Total BTEX | 710 | 2.0 |
| 1,4-Dioxane | N.D. | 500 |
| Acetone | N.D. | 50 |
| 1,2-Dichlorobenzene | N.D. | 2.5 |
| 1,3-Dichlorobenzene | N.D. | 2.5 |
| 1,4-Dichlorobenzene | N.D. | 2.5 |
| Total Dichlorobenzene | N.D. | 2.5 |
| Methyl-tert-Butyl Ether | N.D. | 10 |
| Tert-Butyl Alcohol | N.D. | 10 |
| Tert-Amyl Methyl Ether | N.D. | 10 |

Surrogates:

| <u>Compound</u> | <u>% Recovery</u> | <u>Limits</u> |
|-----------------------|-------------------|---------------|
| Toluene d8 | 115 | 70-130 |
| 1,2-Dichloroethane d4 | 103 | 70-130 |
| 4 BFB | 120 | 70-130 |

All compounds reported with a reporting limit of "1.0" are estimated to meet client-specified reporting limits as noted with a "J" on the report.

59 Greenhill Street
West Warwick, RI 02893

1-888-863-8522

Chain of Custody Record

DO322-~~1~~ 11

add
hardness to
mw. 1 per
Phil via
email
5/8/17 Jd

[illegible]



REPORT OF ANALYTICAL RESULTS

NETLAB Case Number D0118-32

Prepared for:

Attn: Adam Last
Corporate Environmental Advisors, Inc.
127 Hartwell Street
West Boylston, MA 01583

Report Date: January 26, 2017

Director
New England Testing Laboratory, Inc.
Lab # RI010

NEW ENGLAND TESTING LABORATORY, INC.

59 Greenhill Street, West Warwick, RI 02893

(401) 353-3420

MassDEP Analytical Protocol Certification Form

Laboratory Name: New England Testing Laboratory, Inc.

Project #: 0070-17

Project Location: Maureen Sargent, 2 Woodland Road, Northboro,
MA

RTN:

**This Form provides certifications for the following data set: list Laboratory Sample ID Number(s):
D0118-32**

Matrices: ☒ Groundwater/Surface Water ☐ Soil/Sediment ☐ Drinking Water ☐ Air ☐ Other: _____

CAM Protocol (check all that apply below):

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

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

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

Responses to Questions G, H and I below are required for "Presumptive Certainty" status

| | | |
|----------|---|--|
| G | Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocol(s)? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No ¹ |
|----------|---|--|

Data User Note: Data that achieve "Presumptive Certainty" status may not necessarily meet the data usability and representativeness requirements described in 310 CMR 40. 1056 (2)(k) and WSC-07-350.

| | | |
|----------|--|--|
| H | Were all QC performance standards specified in the CAM protocol(s) achieved? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No ¹ |
| I | Were results reported for the complete analyte list specified in the selected CAM protocol(s)? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No ¹ |

¹All negative responses must be addressed in an attached laboratory narrative.

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

Signature: 

Position: Laboratory Director

Printed Name: Richard Warila

Date: 1/26/2017

SAMPLES SUBMITTED and REQUEST FOR ANALYSIS:

The samples listed in Table I were submitted to New England Testing Laboratory on January 18, 2017. The group of samples appearing in this report was assigned an internal identification number (case number) for laboratory information management purposes. The client's designations for the individual samples, along with our case numbers, are used to identify the samples in this report. This report of analytical results pertains only to the sample(s) provided to us by the client which are indicated on the custody record. The case number for this sample submission is D0118-32.

Custody records are included in this report.

Site: 0070-17 – Maureen Sargent, 2 Woodland Rd, Northboro, MA

TABLE I, Samples Submitted

| Sample ID | Date Sampled | Matrix | Analysis Requested |
|-----------|--------------|--------|--------------------|
| | | | |
| MW-2 | 1/17/2017 | Water | Table II |
| MW-3 | 1/17/2017 | Water | Table II |

TABLE II, Analysis and Methods

| ANALYSIS | DETERMINATIVE METHOD |
|----------|----------------------|
| EPH | * |
| VPH | ** |

These methods are documented in:

Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW-846, USEPA/OSW.

*Method for the Determination of Extractable Petroleum Hydrocarbons (EPH), MADEP.

**Method for the Determination of Volatile Petroleum Hydrocarbons (VPH), MADEP.



CASE NARRATIVE:

Sample Receipt

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

EPH

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

VPH

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

RESULTS: EXTRACTABLE PETROLEUM HYDROCARBONS

Results for EPH analysis are presented in the following section. Each page is electronically signed.

APPENDIX 3: REQUIRED EPH DATA REPORTING FORMAT/INFORMATION

SAMPLE INFORMATION

| | |
|-----------------------|---|
| Matrix | X Aqueous Soil Sediment Other: |
| Containers | X Satisfactory Broken Leaking: |
| Aqueous Preservatives | N/A X pH≤2 pH>2 Comment: |
| Temperature | X Received on Ice X Received at 4° C ± 2°C Other: ° C |
| Extraction Method | Water: Separatory Funnel - 3510C Soil: N/A |

EPH ANALYTICAL RESULTS

| | | | |
|--|------------------------|-------------------|--------------|
| Method for Ranges: MADEP EPH 04-1.1 | | Client ID | MW-2 |
| Method for Target Analytes: | | Lab ID | D0118-32 |
| EPH Surrogate Standards | | Date Collected | 1/17/2017 |
| Aliphatic: Chlorooctadecane | | Date Received | 1/18/2017 |
| Aromatic: o-Terphenyl | | Date Extracted | 1/24/17 |
| EPH Fractionation Surrogates | | Date Analyzed | 1/26/17 |
| 2-Fluorobiphenyl | | Dilution Factor | 1X |
| 2-Bromonaphthalene | | % Moisture (soil) | N/A |
| RANGE/TARGET ANALYTE | | RL | Units |
| Unadjusted C11-C22 Aromatics ¹ | | 150 | ug/L |
| Diesel PAH Analytes | Naphthalene | 1.0 | ug/L |
| | 2-Methylnaphthalene | 1.0 | ug/L |
| | Phenanthrene | 1.0 | ug/L |
| | Acenaphthene | 5.0 | ug/L |
| Other Target PAH Analytes | Acenaphthylene | 1.0 | ug/L |
| | Fluorene | 5.0 | ug/L |
| | Anthracene | 5.0 | ug/L |
| | Fluoranthene | 5.0 | ug/L |
| | Pyrene | 5.0 | ug/L |
| | Benzo(a)anthracene | 1.0 | ug/L |
| | Chrysene | 2.0 | ug/L |
| | Benzo(b)fluoranthene | 1.0 | ug/L |
| | Benzo(k)fluoranthene | 1.0 | ug/L |
| | Benzo(a)pyrene | 0.2 | ug/L |
| | Indeno(1,2,3-cd)pyrene | 0.5 | ug/L |
| | Dibenzo(a,h)anthracene | 0.5 | ug/L |
| | Benzo(g,h,i)perylene | 5.0 | ug/L |
| C9-C18 Aliphatic Hydrocarbons ¹ | | 200 | ug/L |
| C19-C36 Aliphatic Hydrocarbons ¹ | | 200 | ug/L |
| C11-C22 Aromatic Hydrocarbons ^{1,2} | | 150 | ug/L |
| Aliphatic Surrogate % Recovery | | | 62 |
| Aromatic Surrogate % Recovery | | | 62 |
| Sample Surrogate Acceptance Range | | | 40-140% |
| Fractionation Surrogate % Recovery | | | 96 |
| Fractionation Surrogate % Recovery | | | 59 |
| Fractionation Surrogate Acceptance Range | | | 40-140% |
| ¹ Hydrocarbon Range data exclude concentrations of any surrogate(s) and/or internal standards eluting in that range | | | |
| ² C11-C22 Aromatic Hydrocarbons exclude the concentration of Target PAH Analytes | | | |

CERTIFICATION

| | |
|---|--|
| Were all QA/QC procedures REQUIRED by the EPH Method followed? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No-Details Attached |
| Were all performance/acceptance standards for the required QA/QC procedures achieved? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No-Details Attached |
| Were any significant modifications made to the EPH method, as specified in Section 11.3? | <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes-Details Attached |
| <i>I attest under the pains and penalties of perjury that, based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.</i> | |
| SIGNATURE: <u>Richard Warila</u> | POSITION: <u>Laboratory Director</u> |
| PRINTED NAME: <u>Richard Warila</u> | DATE: <u>1/26/2017</u> |

APPENDIX 3: REQUIRED EPH DATA REPORTING FORMAT/INFORMATION

SAMPLE INFORMATION

| | |
|-----------------------|--|
| Matrix | X Aqueous Soil Sediment Other: |
| Containers | X Satisfactory Broken Leaking: |
| Aqueous Preservatives | N/A X pH \leq 2 pH>2 Comment: |
| Temperature | X Received on Ice X Received at 4° C \pm 2° C Other: ° C |
| Extraction Method | Water: Separatory Funnel - 3510C Soil: N/A |

EPH ANALYTICAL RESULTS

| | | | |
|--|------------------------|-------------------|--------------|
| Method for Ranges: MADEP EPH 04-1.1 | | Client ID | MW-3 |
| Method for Target Analytes: | | Lab ID | D0118-32 |
| EPH Surrogate Standards | | Date Collected | 1/17/2017 |
| Aliphatic: Chlorooctadecane | | Date Received | 1/18/2017 |
| Aromatic: o-Terphenyl | | Date Extracted | 1/24/17 |
| EPH Fractionation Surrogates | | Date Analyzed | 1/26/17 |
| 2-Fluorobiphenyl | | Dilution Factor | 1X |
| 2-Bromonaphthalene | | % Moisture (soil) | N/A |
| RANGE/TARGET ANALYTE | | RL | Units |
| Unadjusted C11-C22 Aromatics ¹ | | 150 | ug/L |
| Diesel PAH Analytes | Naphthalene | 1.0 | ug/L |
| | 2-Methylnaphthalene | 1.0 | ug/L |
| | Phenanthrene | 1.0 | ug/L |
| | Acenaphthene | 5.0 | ug/L |
| Other Target PAH Analytes | Acenaphthylene | 1.0 | ug/L |
| | Fluorene | 5.0 | ug/L |
| | Anthracene | 5.0 | ug/L |
| | Fluoranthene | 5.0 | ug/L |
| | Pyrene | 5.0 | ug/L |
| | Benzo(a)anthracene | 1.0 | ug/L |
| | Chrysene | 2.0 | ug/L |
| | Benzo(b)fluoranthene | 1.0 | ug/L |
| | Benzo(k)fluoranthene | 1.0 | ug/L |
| | Benzo(a)pyrene | 0.2 | ug/L |
| | Indeno(1,2,3-cd)pyrene | 0.5 | ug/L |
| | Dibenzo(a,h)anthracene | 0.5 | ug/L |
| | Benzo(g,h,i)perylene | 5.0 | ug/L |
| C9-C18 Aliphatic Hydrocarbons ¹ | | 200 | ug/L |
| C19-C36 Aliphatic Hydrocarbons ¹ | | 200 | ug/L |
| C11-C22 Aromatic Hydrocarbons ^{1,2} | | 150 | ug/L |
| Aliphatic Surrogate % Recovery | | | 64 |
| Aromatic Surrogate % Recovery | | | 76 |
| Sample Surrogate Acceptance Range | | | 40-140% |
| Fractionation Surrogate % Recovery | | | 113 |
| Fractionation Surrogate % Recovery | | | 64 |
| Fractionation Surrogate Acceptance Range | | | 40-140% |
| ¹ Hydrocarbon Range data exclude concentrations of any surrogate(s) and/or internal standards eluting in that range | | | |
| ² C11-C22 Aromatic Hydrocarbons exclude the concentration of Target PAH Analytes | | | |

CERTIFICATION

| | |
|---|--|
| Were all QA/QC procedures REQUIRED by the EPH Method followed? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No-Details Attached |
| Were all performance/acceptance standards for the required QA/QC procedures achieved? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No-Details Attached |
| Were any significant modifications made to the EPH method, as specified in Section 11.3? | <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes-Details Attached |
| <i>I attest under the pains and penalties of perjury that, based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.</i> | |
| SIGNATURE: <u>Richard Warila</u> | POSITION: <u>Laboratory Director</u> |
| PRINTED NAME: <u>Richard Warila</u> | DATE: <u>1/26/2017</u> |

APPENDIX 3: REQUIRED EPH DATA REPORTING FORMAT/INFORMATION

SAMPLE INFORMATION

| | |
|-----------------------|--|
| Matrix | X Aqueous Soil Sediment Other: |
| Containers | __ Satisfactory __ Broken __ Leaking: |
| Aqueous Preservatives | __ N/A __ pH<2 __ pH>2 Comment: |
| Temperature | __ Received on Ice __ Received at 4 ° C Other: |
| Extraction Method | Water: Separatory Funnel Soil: N/A |

EPH ANALYTICAL RESULTS

| | | | |
|--|------------------------|-------------------|--------------|
| Method for Ranges: MADEP EPH 04-1.1 | | Client ID | Method Blank |
| Method for Target Analytes: | | Lab ID | D0118-32 |
| EPH Surrogate Standards | | Date Collected | NA |
| Aliphatic: Chlorooctadecane | | Date Received | NA |
| Aromatic: o-Terphenyl | | Date Extracted | 1/24/17 |
| EPH Fractionation Surrogates | | Date Analyzed | 1/26/17 |
| 2-Fluorobiphenyl | | Dilution Factor | 1X |
| 2-Bromonaphthalene | | % Moisture (soil) | N/A |
| RANGE/TARGET ANALYTE | | RL | Units |
| Unadjusted C11-C22 Aromatics ¹ | | 150 | ug/L |
| Diesel PAH Analytes | Naphthalene | 1.0 | ug/L |
| | 2-Methylnaphthalene | 1.0 | ug/L |
| | Phenanthrene | 1.0 | ug/L |
| | Acenaphthene | 5.0 | ug/L |
| Other Target PAH Analytes | Acenaphthylene | 1.0 | ug/L |
| | Fluorene | 5.0 | ug/L |
| | Anthracene | 5.0 | ug/L |
| | Fluoranthene | 5.0 | ug/L |
| | Pyrene | 5.0 | ug/L |
| | Benzo(a)anthracene | 1.0 | ug/L |
| | Chrysene | 2.0 | ug/L |
| | Benzo(b)fluoranthene | 1.0 | ug/L |
| | Benzo(k)fluoranthene | 1.0 | ug/L |
| | Benzo(a)pyrene | 0.2 | ug/L |
| | Indeno(1,2,3-cd)pyrene | 0.5 | ug/L |
| | Dibenzo(a,h)anthracene | 0.5 | ug/L |
| | Benzo(g,h,i)perylene | 5.0 | ug/L |
| C9-C18 Aliphatic Hydrocarbons ¹ | | 200 | ug/L |
| C19-C36 Aliphatic Hydrocarbons ¹ | | 200 | ug/L |
| C11-C22 Aromatic Hydrocarbons ^{1,2} | | 150 | ug/L |
| Aliphatic Surrogate % Recovery | | | 53 |
| Aromatic Surrogate % Recovery | | | 50 |
| Sample Surrogate Acceptance Range | | | 40-140% |
| Fractionation Surrogate % Recovery | | | 106 |
| Fractionation Surrogate % Recovery | | | 83 |
| Fractionation Surrogate Acceptance Range | | | 40-140% |
| ¹ Hydrocarbon Range data exclude concentrations of any surrogate(s) and/or internal standards eluting in that range | | | |
| ² C11-C22 Aromatic Hydrocarbons exclude the concentration of Target PAH Analytes | | | |

CERTIFICATION

| | |
|---|--|
| Were all QA/QC procedures REQUIRED by the EPH Method followed? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No-Details Attached |
| Were all performance/acceptance standards for the required QA/QC procedures achieved? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No-Details Attached |
| Were any significant modifications made to the EPH method, as specified in Section 11.3? | <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes-Details Attached |
| <i>I attest under the pains and penalties of perjury that, based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.</i> | |
| SIGNATURE: <u>Richard Warila</u> | POSITION: <u>Laboratory Director</u> |
| PRINTED NAME: <u>Richard Warila</u> | DATE: <u>1/26/2017</u> |

ALI LCS WATER 01-24-17.txt
Spike Recovery and RPD Summary Report - WATER

Method : C:\HPCHEM\1\METHODS\ALI-QNT.M (Chemstation Integrator)
Title :
Last Update : Thu Dec 15 11:14:19 2016
Response via : Initial Calibration

Non-Spiked Sample: M012616.D

| Spike Sample | Spike Duplicate Sample |
|-----------------------------|------------------------|
| File ID : M012617.D | M012618.D |
| Sample : LEW 1-24 HX | LEWD 1-24 HX |
| Acq Time: 26 Jan 2017 16:23 | 26 Jan 2017 16:47 |

| Compound | Sample Conc | Spike Added | Spike Res | Dup Res | Spike %Rec | Dup %Rec | RPD | QC RPD | Limits % Rec |
|-----------------|-------------|-------------|-----------|---------|------------|----------|-----|--------|--------------|
| Nonane | 0.0 | 40 | 13 | 13 | 34 | 32 | 6 | 25 | 30-140 |
| Decane | 0.0 | 40 | 16 | 16 | 41 | 41 | 0 | 25 | 40-140 |
| Dodecane | 0.0 | 40 | 18 | 17 | 45 | 43 | 5 | 25 | 40-140 |
| Tetradecane | 0.0 | 40 | 19 | 19 | 47 | 46 | 1 | 25 | 40-140 |
| Hexadecane | 0.0 | 40 | 20 | 20 | 51 | 51 | 1 | 25 | 40-140 |
| Octadecane | 0.0 | 40 | 25 | 27 | 63 | 68 | 9 | 25 | 40-140 |
| Nonadecane | 0.0 | 40 | 28 | 30 | 69 | 74 | 8 | 25 | 40-140 |
| Eicosane | 0.0 | 40 | 31 | 34 | 78 | 85 | 9 | 25 | 40-140 |
| Docosane | 0.0 | 40 | 38 | 40 | 94 | 99 | 6 | 25 | 40-140 |
| Tetracosane | 0.0 | 40 | 35 | 38 | 89 | 94 | 6 | 25 | 40-140 |
| Hexacosane | 0.0 | 40 | 35 | 37 | 88 | 93 | 5 | 25 | 40-140 |
| Octacosane | 0.0 | 40 | 36 | 38 | 90 | 95 | 5 | 25 | 40-140 |
| Triacontane | 0.0 | 40 | 35 | 37 | 87 | 92 | 5 | 25 | 40-140 |
| Hexatriacontane | 0.0 | 40 | 35 | 36 | 88 | 89 | 1 | 25 | 40-140 |

- Fails Limit Check

ALI-QNT.M Thu Jan 26 17:06:42 2017

ARO LCS WATER 01-24-17.txt
Spike Recovery and RPD Summary Report - WATER

Method : C:\HPCHEM\1\METHODS\AROQT.M (Chemstation Integrator)
Title :
Last Update : Wed Jan 11 10:38:30 2017
Response via : Initial Calibration

Non-Spiked Sample: K012615.D

| Spike Sample | Spike Duplicate Sample |
|-----------------------------|------------------------|
| File ID : K012616.D | K012617.D |
| Sample : LEW 1-24 ME | LEWD 1-24 ME |
| Acq Time: 26 Jan 2017 16:26 | 26 Jan 2017 16:49 |

| Compound | Sample Conc | Spike Added | Spike Res | Dup Res | Spike %Rec | Dup %Rec | RPD | QC RPD | Limits % Rec |
|----------------------|-------------|-------------|-----------|---------|------------|----------|-----|--------|--------------|
| Napthalene | 0.0 | 40 | 18 | 22 | 46 | 55 | 17 | 25 | 40-140 |
| 2-Methyl Napthalene | 0.0 | 40 | 18 | 20 | 44 | 50 | 12 | 25 | 40-140 |
| Acenaphthylene | 0.0 | 40 | 20 | 23 | 50 | 57 | 13 | 25 | 40-140 |
| Acenaphthene | 0.0 | 40 | 20 | 23 | 50 | 57 | 13 | 25 | 40-140 |
| Fluorene | 0.0 | 40 | 22 | 24 | 55 | 59 | 8 | 25 | 40-140 |
| Phenanthrene | 0.0 | 40 | 30 | 30 | 76 | 76 | 0 | 25 | 40-140 |
| Anthracene | 0.0 | 40 | 31 | 32 | 78 | 80 | 3 | 25 | 40-140 |
| Fluoranthene | 0.0 | 40 | 37 | 36 | 92 | 91 | 1 | 25 | 40-140 |
| Pyrene | 0.0 | 40 | 38 | 38 | 95 | 95 | 0 | 25 | 40-140 |
| Benzo (a) Anthracene | 0.0 | 40 | 40 | 41 | 100 | 103 | 3 | 25 | 40-140 |
| Chrysene | 0.0 | 40 | 42 | 43 | 104 | 108 | 4 | 25 | 40-140 |
| Benzo (b) Flouranthe | 0.0 | 40 | 43 | 48 | 109 | 120 | 10 | 25 | 40-140 |
| Benzo(k)Flouranthene | 0.0 | 40 | 37 | 38 | 93 | 94 | 1 | 25 | 40-140 |
| Benzo(a)Pyrene | 0.0 | 40 | 36 | 38 | 89 | 94 | 6 | 25 | 40-140 |
| Indeno(1,2,3)Pyrene | 0.0 | 40 | 42 | 42 | 105 | 105 | 0 | 25 | 40-140 |
| Dibenzo(ah)Anthracen | 0.0 | 40 | 35 | 42 | 87 | 105 | 18 | 25 | 40-140 |
| Benzo(g,h,i)Perylene | 0.0 | 40 | 36 | 38 | 89 | 95 | 6 | 25 | 40-140 |

- Fails Limit Check

AROQT.M Thu Jan 26 17:09:54 2017

RESULTS: VOLATILE PETROLEUM HYDROCARBONS

Results for VPH analysis are presented in the following section. Each page is electronically signed.

SAMPLE INFORMATION

| | | | |
|----------------------|---|---|--|
| Matrix | <input checked="" type="checkbox"/> Aqueous <input type="checkbox"/> Soil <input type="checkbox"/> Sediment <input type="checkbox"/> Other: | | |
| Containers | <input checked="" type="checkbox"/> Satisfactory <input type="checkbox"/> Broken <input type="checkbox"/> Leaking: | | |
| Sample Preservatives | Aqueous | <input type="checkbox"/> N/A <input checked="" type="checkbox"/> pH \leq 2 <input type="checkbox"/> pH>2 Comment: | |
| | Soil or Sediment | <input type="checkbox"/> N/A <input type="checkbox"/> Samples NOT preserved Methanol or air-tight container | |
| | | <input type="checkbox"/> Samples rec'd in Methanol: <input type="checkbox"/> covering soil <input type="checkbox"/> not covering soil | |
| | | <input type="checkbox"/> Samples received in air-tight container: | |
| Temperature | <input checked="" type="checkbox"/> Received on Ice <input checked="" type="checkbox"/> Received at 4° C \pm 2° C <input type="checkbox"/> Other: Received at ° C | | |

VPH ANALYTICAL RESULTS

| | | | | |
|---|---------------|-------------------|-------|-----------|
| Method for Ranges: MADEP VPH 04-1.1 | | Client ID | | MW-2 |
| Method for Target Analytes: | | Lab ID | | D0118-32 |
| VPH Surrogate Standards PID: 2,5- Dibromotoluene FID: 2,5- Dibromotoluene | | Date Collected | | 1/17/2017 |
| | | Date Received | | 1/18/2017 |
| | | Date Analyzed | | 1/19/2017 |
| | | Dilution Factor | | 1 |
| | | % Moisture (soil) | | NA |
| Range/Target Analyte | Elution Range | RL | Units | |
| Unadjusted C5-C8 Aliphatics ¹ | N/A | 50 | ug/L | <50 |
| Unadjusted C9-C12 Aliphatics ¹ | N/A | 50 | ug/L | <50 |
| Benzene | C5-C8 | 5.0 | ug/L | <5.0 |
| Ethylbenzene | C9-C12 | 5.0 | ug/L | <5.0 |
| Methyl-tert-butylether | C5-C8 | 10 | ug/L | <10 |
| Naphthalene | N/A | 10 | ug/L | <10 |
| Toluene | C5-C8 | 5.0 | ug/L | <5.0 |
| m- & p- Xylenes | C9-C12 | 10 | ug/L | <10 |
| o-Xylene | C9-C12 | 10 | ug/L | <10 |
| C5-C8 Aliphatic Hydrocarbons ^{1,2} | N/A | 50 | ug/L | <50 |
| C9-C12 Aliphatic Hydrocarbons ^{1,3} | N/A | 50 | ug/L | <50 |
| C9-C10 Aromatic Hydrocarbons ¹ | N/A | 50 | ug/L | <50 |
| PID Surrogate % Recovery | | | | 87 |
| FID Surrogate % Recovery | | | | 97 |
| Surrogate Acceptance Range | | | | 70-130% |

¹Hydrocarbon Range data exclude concentrations of any surrogate(s) and/or internal standards eluting in that range

²C₅-C₈ Aliphatic Hydrocarbons exclude the concentration of Target Analytes eluting in that range

³C₉-C₁₂ Aliphatic Hydrocarbons exclude conc of Target Analytes eluting in that range AND concentration of C₉-C₁₀ Aromatic Hydrocarbons

CERTIFICATION

| | |
|--|--|
| Were all QA/QC procedures REQUIRED by the VPH Method followed? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No-Details Attached |
| Were all performance/acceptance standards for the required QA/QC procedures achieved? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No-Details Attached |
| Were any significant modifications made to the VPH method, as specified in Section 11.3? | <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes-Details Attached |
| <p><i>I attest under the pains and penalties of perjury that, based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.</i></p> | |
| SIGNATURE: <u>Richard Warila</u> | POSITION: <u>Laboratory Director</u> |
| PRINTED NAME: <u>Richard Warila</u> | DATE: <u>1/26/2017</u> |

SAMPLE INFORMATION

| | | | |
|----------------------|---|---|--|
| Matrix | <input checked="" type="checkbox"/> Aqueous <input type="checkbox"/> Soil <input type="checkbox"/> Sediment <input type="checkbox"/> Other: | | |
| Containers | <input checked="" type="checkbox"/> Satisfactory <input type="checkbox"/> Broken <input type="checkbox"/> Leaking: | | |
| Sample Preservatives | Aqueous | <input type="checkbox"/> N/A <input checked="" type="checkbox"/> pH \leq 2 <input type="checkbox"/> pH>2 Comment: | |
| | Soil or Sediment | <input type="checkbox"/> N/A <input type="checkbox"/> Samples NOT preserved Methanol or air-tight container | |
| | | <input type="checkbox"/> Samples rec'd in Methanol: <input type="checkbox"/> covering soil <input type="checkbox"/> not covering soil | |
| | | <input type="checkbox"/> Samples received in air-tight container: | |
| Temperature | <input checked="" type="checkbox"/> Received on Ice <input checked="" type="checkbox"/> Received at 4° C \pm 2° C <input type="checkbox"/> Other: Received at ° C | | |

VPH ANALYTICAL RESULTS

| Method for Ranges: MADEP VPH 04-1.1 | | Client ID | | MW-3 |
|---|---------------|-------------------|-------|-----------|
| Method for Target Analytes: | | Lab ID | | D0118-32 |
| VPH Surrogate Standards PID: 2,5- Dibromotoluene FID: 2,5- Dibromotoluene | | Date Collected | | 1/17/2017 |
| | | Date Received | | 1/18/2017 |
| | | Date Analyzed | | 1/19/2017 |
| | | Dilution Factor | | 1 |
| | | % Moisture (soil) | | NA |
| Range/Target Analyte | Elution Range | RL | Units | |
| Unadjusted C5-C8 Aliphatics ¹ | N/A | 50 | ug/L | <50 |
| Unadjusted C9-C12 Aliphatics ¹ | N/A | 50 | ug/L | 692 |
| Benzene | C5-C8 | 5.0 | ug/L | <5.0 |
| Ethylbenzene | C9-C12 | 5.0 | ug/L | <5.0 |
| Methyl-tert-butylether | C5-C8 | 10 | ug/L | <10 |
| Naphthalene | N/A | 10 | ug/L | <10 |
| Toluene | C5-C8 | 5.0 | ug/L | <5.0 |
| m- & p- Xylenes | C9-C12 | 10 | ug/L | <10 |
| o-Xylene | C9-C12 | 10 | ug/L | <10 |
| C5-C8 Aliphatic Hydrocarbons ^{1,2} | N/A | 50 | ug/L | <50 |
| C9-C12 Aliphatic Hydrocarbons ^{1,3} | N/A | 50 | ug/L | 395 |
| C9-C10 Aromatic Hydrocarbons ¹ | N/A | 50 | ug/L | 297 |
| PID Surrogate % Recovery | | | | 81 |
| FID Surrogate % Recovery | | | | 88 |
| Surrogate Acceptance Range | | | | 70-130% |

¹Hydrocarbon Range data exclude concentrations of any surrogate(s) and/or internal standards eluting in that range

²C₅-C₈ Aliphatic Hydrocarbons exclude the concentration of Target Analytes eluting in that range

³C₉-C₁₂ Aliphatic Hydrocarbons exclude conc of Target Analytes eluting in that range AND concentration of C₉-C₁₀ Aromatic Hydrocarbons

CERTIFICATION

| | |
|---|--|
| Were all QA/QC procedures REQUIRED by the VPH Method followed? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No-Details Attached |
| Were all performance/acceptance standards for the required QA/QC procedures achieved? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No-Details Attached |
| Were any significant modifications made to the VPH method, as specified in Section 11.3? | <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes-Details Attached |
| <i>I attest under the pains and penalties of perjury that, based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.</i> | |
| SIGNATURE: <u>Richard Warila</u> | POSITION: <u>Laboratory Director</u> |
| PRINTED NAME: <u>Richard Warila</u> | DATE: <u>1/26/2017</u> |

SAMPLE INFORMATION

| | | | |
|----------------------|---|---|--|
| Matrix | <input checked="" type="checkbox"/> Aqueous <input type="checkbox"/> Soil <input type="checkbox"/> Sediment <input type="checkbox"/> Other: | | |
| Containers | <input type="checkbox"/> Satisfactory <input type="checkbox"/> Broken <input type="checkbox"/> Leaking: | | |
| Sample Preservatives | Aqueous | <input type="checkbox"/> N/A <input type="checkbox"/> pH \leq 2 <input type="checkbox"/> pH>2 Comment: | |
| | Soil or Sediment | <input type="checkbox"/> N/A <input type="checkbox"/> Samples NOT preserved Methanol or air-tight container | |
| | | <input type="checkbox"/> Samples rec'd in Methanol: <input type="checkbox"/> covering soil <input type="checkbox"/> not covering soil | |
| | | <input type="checkbox"/> Samples received in air-tight container: | |
| Temperature | <input type="checkbox"/> Received on Ice <input type="checkbox"/> Received at 4° C <input type="checkbox"/> Other: | | |

VPH ANALYTICAL RESULTS

| Method for Ranges: MADEP VPH 04-1.1 | | Client ID | | Method Blank |
|--|---------------|-------------------|-------|--------------|
| Method for Target Analytes: | | Lab ID | | D0118-32 |
| VPH Surrogate Standards | | Date Collected | | NA |
| PID: 2,5- Dibromotoluene | | Date Received | | NA |
| FID: 2,5- Dibromotoluene | | Date Analyzed | | 1/19/2017 |
| | | Dilution Factor | | 1 |
| | | % Moisture (soil) | | NA |
| Range/Target Analyte | Elution Range | RL | Units | |
| Unadjusted C5-C8 Aliphatics ¹ | N/A | 50 | ug/L | <50 |
| Unadjusted C9-C12 Aliphatics ¹ | N/A | 50 | ug/L | <50 |
| Benzene | C5-C8 | 5.0 | ug/L | <5.0 |
| Ethylbenzene | C9-C12 | 5.0 | ug/L | <5.0 |
| Methyl-tert-butylether | C5-C8 | 10 | ug/L | <10 |
| Naphthalene | N/A | 10 | ug/L | <10 |
| Toluene | C5-C8 | 5.0 | ug/L | <5.0 |
| m- & p- Xylenes | C9-C12 | 10 | ug/L | <10 |
| o-Xylene | C9-C12 | 10 | ug/L | <10 |
| C5-C8 Aliphatic Hydrocarbons ^{1,2} | N/A | 50 | ug/L | <50 |
| C9-C12 Aliphatic Hydrocarbons ^{1,3} | N/A | 50 | ug/L | <50 |
| C9-C10 Aromatic Hydrocarbons ¹ | N/A | 50 | ug/L | <50 |
| PID Surrogate % Recovery | | | | 89 |
| FID Surrogate % Recovery | | | | 99 |
| Surrogate Acceptance Range | | | | 70-130% |

¹Hydrocarbon Range data exclude concentrations of any surrogate(s) and/or internal standards eluting in that range

²C₅-C₈ Aliphatic Hydrocarbons exclude the concentration of Target Analytes eluting in that range

³C₉-C₁₂ Aliphatic Hydrocarbons exclude conc of Target Analytes eluting in that range AND concentration of C₉-C₁₀ Aromatic Hydrocarbons

CERTIFICATION

| | |
|---|--|
| Were all QA/QC procedures REQUIRED by the VPH Method followed? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No-Details Attached |
| Were all performance/acceptance standards for the required QA/QC procedures achieved? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No-Details Attached |
| Were any significant modifications made to the VPH method, as specified in Section 11.3? | <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes-Details Attached |
| <i>I attest under the pains and penalties of perjury that, based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.</i> | |
| SIGNATURE: <u>Richard Warila</u> | POSITION: <u>Laboratory Director</u> |
| PRINTED NAME: <u>Richard Warila</u> | DATE: <u>1/26/2017</u> |

VLCS0119.TXT
Spike Recovery and RPD Summary Report -

Method : C:\HPCHEM\1\METHODS\VP1214.M (Chemstation Integrator)
Title :
Last Update : Thu Dec 15 08:25:14 2016
Response via : Initial Calibration

Non-Spiked Sample: D011906.D

| Spike Sample | Spike Duplicate Sample |
|-----------------------------|------------------------|
| File ID : D011903.D | D011904.D |
| Sample : VLCS011917 | VLCS011917 |
| Acq Time: 19 Jan 17 8:30 am | 19 Jan 17 9:10 am |

| Compound | Sample Conc | Spike Added | Spike Res | Dup Res | Spike %Rec | Dup %Rec | RPD | QC RPD | Limits % Rec |
|------------------------|-------------|-------------|-----------|---------|------------|----------|-----|--------|--------------|
| Pentane | 0.0 | 50 | 54 | 51 | 108 | 103 | 5 | 25 | 70-130 |
| 2-Methyl Pentane | 0.0 | 50 | 53 | 51 | 105 | 102 | 4 | 25 | 70-130 |
| 2,2,4-trimethyl penta | 0.0 | 50 | 50 | 47 | 99 | 95 | 5 | 25 | 70-130 |
| Nonane | 0.0 | 50 | 43 | 40 | 86 | 80 | 7 | 25 | 70-130 |
| n-decane | 0.0 | 50 | 38 | 37 | 76 | 75 | 2 | 25 | 70-130 |
| n-butyl cycl ohexane | 0.0 | 50 | 44 | 40 | 89 | 80 | 10 | 25 | 70-130 |
| MTBE #2 | 0.0 | 50 | 45 | 42 | 90 | 84 | 7 | 25 | 70-130 |
| Benzene #2 | 0.0 | 50 | 57 | 55 | 113 | 110 | 3 | 25 | 70-130 |
| Toluene #2 | 0.0 | 50 | 56 | 54 | 112 | 109 | 3 | 25 | 70-130 |
| Ethyl benzene #2 | 0.0 | 50 | 56 | 54 | 113 | 107 | 5 | 25 | 70-130 |
| M&P Xylene #2 | 0.0 | 100 | 110 | 105 | 110 | 105 | 4 | 25 | 70-130 |
| O Xylene #2 | 0.0 | 50 | 51 | 49 | 101 | 97 | 4 | 25 | 70-130 |
| 1,2,4-Tri methyl bezen | 0.0 | 50 | 49 | 47 | 99 | 94 | 5 | 25 | 70-130 |
| Naphthlene #2 | 0.0 | 50 | 47 | 45 | 93 | 90 | 4 | 25 | 70-130 |

- Fails Limit Check

VP1214.M Thu Jan 19 11:54:52 2017

59 Greenhill Street
West Warwick, RI 02893
1-888-863-8522

DO 118-32

Page 16 of 16

TABLES



Table 1
Groundwater Gauging Data Summary
2 Woodland Road
Northborough, MA

| Sample ID | Monitoring Date | Casing Elevation (feet) | Depth to LNAPL (feet) | Depth to Water (feet) | Total Well Depth (feet) | NAPL Thickness (feet) | Groundwater Elevation (feet) | Comments |
|-----------|-----------------|-------------------------|-----------------------|-----------------------|-------------------------|-----------------------|------------------------------|--|
| MW-1 | 01/17/17 | 102.76 | 10.62 | 11.00 | | 0.38 | 92.04 | ~300 ml of LNAPL bailed (non weathered fuel oil) |
| | 01/17/17 | 102.76 | 10.68 | 10.71 | | 0.03 | 92.07 | ~1.5 hours after bailing LNAPL |
| | 02/28/17 | 102.76 | 9.39 | 9.42 | | 0.03 | 93.36 | ~50 ml of LNAPL bailed |
| | 02/28/17 | 102.76 | | 9.39 | | | 93.37 | ~20 minutes after bailing LNAPL |
| | 03/08/17 | 102.76 | 9.98 | 10.00 | | 0.02 | 92.77 | ~10 ml NAPL bailed |
| | 03/08/17 | 102.76 | | 10.00 | | | 92.76 | No NAPL recharge |
| | 03/15/17 | 102.76 | 10.39 | 10.40 | | 0.01 | 92.37 | ~10 ml NAPL bailed |
| | 03/22/17 | 102.76 | 10.42 | 10.43 | | 0.01 | 92.34 | ~5 ml NAPL bailed |
| | 03/22/17 | 102.76 | | 10.65 | | | 92.11 | No NAPL after sampling GW |
| | 03/28/17 | 102.76 | 10.05 | 10.06 | | 0.01 | 92.71 | ~5 ml NAPL bailed |
| | 03/28/17 | 102.76 | | 10.05 | | | 92.71 | No NAPL recharge |
| | 04/04/17 | 102.76 | | 8.05 | | | 94.71 | |
| | 04/14/17 | 102.76 | | 9.09 | | | 93.67 | |
| | 04/19/17 | 102.76 | | 9.57 | | | 93.19 | |
| MW-2 | 01/17/17 | 100.00 | | 7.92 | 14.8 | | 92.08 | |
| | 02/28/17 | 100.00 | | 7.36 | | | 92.64 | |
| | 03/08/17 | 100.00 | | 7.25 | | | 92.75 | |
| | 03/15/17 | 100.00 | | 7.63 | | | 92.37 | |
| | 03/22/17 | 100.00 | | 7.68 | | | 92.32 | |
| | 03/28/17 | 100.00 | | 7.30 | | | 92.70 | |
| | 04/04/17 | 100.00 | | 5.62 | | | 94.38 | |
| | 04/14/17 | 100.00 | | 6.38 | | | 93.62 | |
| | 04/19/17 | 100.00 | | 6.82 | | | 93.18 | |
| MW-3 | 01/17/17 | 100.74 | | 8.67 | 14.5 | | 92.07 | |
| | 02/28/17 | 100.74 | | 6.63 | | | 94.11 | |
| | 03/08/17 | 100.74 | | 7.98 | | | 92.76 | |
| | 03/15/17 | 100.74 | | 8.38 | | | 92.36 | |
| | 03/22/17 | 100.74 | | 8.41 | | | 92.33 | |
| | 03/28/17 | 100.74 | | 8.01 | | | 92.73 | |
| | 04/04/17 | 100.74 | | 6.40 | | | 94.34 | |
| | 04/14/17 | 100.74 | | 7.12 | | | 93.62 | |
| | 04/19/17 | 100.74 | | 7.56 | | | 93.18 | |

Notes:

Depth to groundwater measured from top of PVC riser.

LNAPL - light non-aqueous phase liquid

MassDEP Notified of LNAPL in MW-1 on 1-17-17

Table 2A
Groundwater Analytical Results - EPH Data Summary
2 Woodland Road
Northborough, MA

| Well ID | Date | C9-C18 Aliphatics | C19-C36 Aliphatics | C11-C22 Aromatics | Diesel Range Organics - Petrogenic PAHs | | | | Pyrogenic Polycyclic Aromatic Hydrocarbons (PAHs) | | | | | | | | | | | | |
|---------------------------------|-----------|--------------------------|--------------------|-------------------|---|---------------------|--------------|--------------|---|----------|------------|--------------|--------|----------------------|----------|------------------------|------------------------|------------------|---------------------------|--------------------------|------------------------|
| | | | | | Naphthalene | 2-Methylnaphthalene | Phenanthrene | Acenaphthene | Acenaphthylene | Fluorene | Anthracene | Fluoranthene | Pyrene | Benzo (a) anthracene | Chrysene | Benzo (b) fluoranthene | Benzo (k) fluoranthene | Benzo (a) pyrene | Indeno (1,2,3-c,d) pyrene | Dibenzo (a,h) anthracene | Benzo (g,h,i) perylene |
| Reportable Concentrations | RCGW-1 | 700 | 14,000 | 200 | 140 | 10 | 40 | 20 | 30 | 30 | 30 | 90 | 20 | 1 | 2 | 1 | 1 | 0.2 | 0.5 | 0.5 | 20 |
| Method 1 Standards ¹ | GW-1 | 700 | 14,000 | 200 | 140 | 10 | 40 | 20 | 30 | 30 | 60 | 90 | 60 | 1 | 2 | 1 | 1 | 0.2 | 0.5 | 0.5 | 50 |
| | GW-2 | 5,000 | NA | 50,000 | 700 | 2,000 | NA | NA | 10,000 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| | GW-3 | 50,000 | 50,000 | 5,000 | 20,000 | 20,000 | 10,000 | 10,000 | 40 | 40 | 30 | 200 | 20 | 1,000 | 70 | 400 | 100 | 500 | 100 | 40 | 20 |
| Method 3 | UCL | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 400 | 600 | 2,000 | 600 | 10,000 | 700 | 4,000 | 1,000 | 5,000 | 1,000 | 400 | 500 |
| MW-1 | 1/17/2017 | Not sampled due to LNAPL | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | |
| MW-2 | 1/17/2017 | <200 | <200 | <150 | <1 | <1 | <1 | <5 | <5 | <5 | <5 | <5 | <5 | <1 | <2 | <1 | <1 | <0.2 | <0.5 | <0.5 | <5 |
| | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | |
| MW-3 | 1/17/2017 | <200 | <200 | <150 | 3.4 | 4.1 | <1 | <5 | <1 | <5 | <5 | <5 | <5 | <1 | <2 | <1 | <1 | <0.2 | <0.5 | <0.5 | <5 |
| | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | |

Notes

All concentrations are in micrograms per liter (ug/L)

< indicates compound was below the laboratory reporting limit

Bold indicates concentrations exceed the applicable Reportable Concentrations

Shaded indicates concentrations exceed the applicable Method 1 GW-1 Standards

Underlined indicates concentration exceeds MCP Upper Concentration Limit

EPH - Extractable Petroleum Hydrocarbons

MTBE - Methyl tert-butyl ether

Ref¹ 310 CMR 40 (2/14/2008) as amended on June 20, 2014.

LNAPL - light non-aqueous phase liquid

UCL - Upper Concentration Limit

Table 2B
Summary of Groundwater Analytical Results - VPH
2 Woodland Road
Northborough, MA

| Well ID | Date | C5-C8 Aliphatics | C9-C12 Aliphatics | C9-C10 Aromatics | Benzene | Ethylbenzene | MTBE | Naphthalene | Toluene | Total Xylenes |
|---------------------------------|-----------|---------------------------------|-------------------|------------------|---------|--------------|---------|-------------|---------|---------------|
| Reportable Concentrations | RCGW-1 | 300 | 700 | 200 | 5 | 700 | 70 | 140 | 1,000 | 3,000 |
| Method 1 Standards ¹ | GW-1 | 300 | 700 | 200 | 5 | 700 | 70 | 140 | 1,000 | 10,000 |
| | GW-2 | 3,000 | 5,000 | 4,000 | 1,000 | 20,000 | 50,000 | 700 | 50,000 | 3,000 |
| | GW-3 | 50,000 | 50,000 | 50,000 | 10,000 | 5,000 | 50,000 | 20,000 | 40,000 | 5,000 |
| Method 3 | UCL | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 |
| MW-1 | 1/17/2017 | Not sampled due to LNAPL | | | | | | | | |
| | | | | | | | | | | |
| MW-2 | 1/17/2017 | <50 | <50 | <50 | <5 | <5 | <10 | <10 | <5 | <10 |
| | | | | | | | | | | |
| MW-3 | 1/17/2017 | <50 | 395 | 297 | <5 | <5 | <10 | <10 | <5 | <10 |
| | | | | | | | | | | |

Notes

All concentrations are in micrograms per liter (ug/L)

< indicates compound was below the laboratory reporting limit

Bold indicates concentrations exceed the RCGW-1 Reportable Concentrations

Shaded indicates concentrations exceed the Method 1 GW-1 Standards

Underlined indicates concentrations exceed MCP Upper Concentration Limits

VPH - Volatile Petroleum Hydrocarbons

MTBE - Methyl tert-butyl ether

LNAPL - light non-aqueous phase liquid

Ref¹ 310 CMR 40 (2/14/2008) as amended on April 25, 2014.

UCL - Upper Concentration Limit

Operator Name and Email or Telephone #: Corporate Environmental Advisors (CEA), Adam Last, alast@cea-inc.com, 508-835-8822 ext. 260

RGP Site Name: Sargent Residence, 2 Woodland Road, Northborough, MA

RGP Permit #: To Be Determined

Receiving Water Name: Unnamed Freshwater Wetland

Receiving Water Sampling Location: Nearest surface water feature down stream of the discharge outfall location sample identified as "SW-1" collected on 3-22-2017.

Enter Activity Category



| I Petroleum-Related Site Remediation | | pH | Temp | Ammonia | Antimony | Arsenic | Cadmium | Chromium III | Chromium VI | Copper | Iron | Lead | Mercury | Nickel | Selenium | Silver | Zinc | Hardness (Freshwater) | Salinity (Saltwater) |
|--------------------------------------|---|---|-------------|-----------|----------|---------|---------|--------------|-------------|---------|---------|---------|---------|---------|----------|---------|---------|-----------------------|----------------------|
| Check units | → | SU | °C | µg/L | µg/L | µg/L | µg/L | µg/L | µg/L | µg/L | µg/L | µg/L | µg/L | µg/L | µg/L | µg/L | µg/L | | |
| Enter test method | → | SM4500 | Field Meter | SM4500 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 200.7 | -- |
| Enter permit limit | → | TBD | TBD | TBD | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | TBD | -- |
| Min | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | |
| Max | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | |
| Avg | | #DIV/0! | #DIV/0! | #DIV/0! | #DIV/0! | #DIV/0! | #DIV/0! | #DIV/0! | #DIV/0! | #DIV/0! | #DIV/0! | #DIV/0! | #DIV/0! | #DIV/0! | #DIV/0! | #DIV/0! | #DIV/0! | | |
| # of measurements | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | |
| Enter sample date | | Enter results; parameters that are not applicable can be left blank | | | | | | | | | | | | | | | | | |
| | ↓ | ↓ | | | | | | | | | | | | | | | | | |
| 3/22/2017 "SW-1" Surface Water | | | | | | | | | | | | | | | | | | | |
| SW-1 Field Measured | | 6.55 SU | 1.87 °C | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| *SW-1 Analytical Results | | 5.89 SU | 2 °C | <0.1 mg/l | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 80 mg/l | -- |

* Note that the surface water sample "SW-1" was tested for ammonia, hardness, pH and temperature as directed by EPA personnel.

The pH and temperature of the nearest surface water down stream of the discharge outfall location sample "SW-1" was field measured in an effort to obtain the accurate data prior to sample refrigeration.

-- indicates parameter was not tested, analyzed or applicable

ATTACHMENT C

StreamStats Flow Statics Report



StreamStats Version 3.0

Flow Statistics Ungaged Site Report

Date: Wed Mar 22, 2017 9:48:23 AM GMT-4

Study Area: Massachusetts

NAD 1983 Latitude: 42.3095 (42 18 34)

NAD 1983 Longitude: -71.6516 (-71 39 06)

Drainage Area: 0.000309 mi²

| Low Flows Basin Characteristics | | | |
|---|----------|---------------------------------|-----|
| 100% Statewide Low Flow WRIR00 4135 (0.000309 mi ²) | | | |
| Parameter | Value | Regression Equation Valid Range | |
| | | Min | Max |
| Drainage Area | 0.000309 | | |
| Mean Basin Slope from 250K DEM | | | |
| Stratified Drift per Stream Length | -100000 | | |
| Massachusetts Region | 0 | | |

| Probability of Perennial Flow Basin Characteristics | | | |
|---|----------|---------------------------------|-----|
| 100% Perennial Flow Probability (0.000309 mi ²) | | | |
| Parameter | Value | Regression Equation Valid Range | |
| | | Min | Max |
| Drainage Area | 0.000309 | | |
| Percent Underlain By Sand And Gravel | | | |
| Percent Forest | | | |
| Massachusetts Region | 0 | | |

| Bankfull Flows Basin Characteristics | | | |
|--|--------------------------------|---------------------------------|------|
| 100% Bankfull Statewide SIR2013 5155 (0.000309 mi ²) | | | |
| Parameter | Value | Regression Equation Valid Range | |
| | | Min | Max |
| Drainage Area (square miles) | 0.000309 (below min value 0.6) | 0.6 | 329 |
| Mean Basin Slope from 10m DEM (percent) | 6.984 | 2.2 | 23.9 |

Warning: Some parameters are outside the suggested range. Estimates will be extrapolations with unknown errors.

| Bankfull Flows Statistics | | | | |
|---------------------------|-------|------|--------------------------------|----------------------------|
| Statistic | Value | Unit | Prediction Error (percent) | Equivalent years of record |
| | | | 90-Percent Prediction Interval | |

| | | | | | Min | Max |
|--------|--------|-------|--|--|-----|-----|
| BFWDTH | 0.62 | ft | | | | |
| BFDPTH | 0.0924 | ft | | | | |
| BFAREA | 0.0556 | ft2 | | | | |
| BFFLOW | 0.0821 | ft3/s | | | | |

<http://pubs.usgs.gov/sir/2013/5155/> (<http://pubs.usgs.gov/sir/2013/5155/>)

Bent_ G.C._ and Waite_ A.M._ 2013_ Equations for estimating bankfull channel geometry and discharge for streams in Massachusetts: U.S. Geological Survey Scientific Investigations Report 2013-5155_ 62 p._

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StreamStats Version 3.0

Flow Statistics Ungaged Site Report

Date: Wed Mar 22, 2017 3:55:47 PM GMT-4

Study Area: Massachusetts

NAD 1983 Latitude: 42.3047 (42 18 17)

NAD 1983 Longitude: -71.6519 (-71 39 07)

Drainage Area: 0.22 mi2

| Low Flows Basin Characteristics | | | |
|---|-----------------------------|---------------------------------|------|
| 100% Statewide Low Flow WRIR00 4135 (0.22 mi2) | | | |
| Parameter | Value | Regression Equation Valid Range | |
| | | Min | Max |
| Drainage Area (square miles) | 0.22 (below min value 1.61) | 1.61 | 149 |
| Mean Basin Slope from 250K DEM (percent) | 1.042 | 0.32 | 24.6 |
| Stratified Drift per Stream Length (square mile per mile) | 0.18 | 0 | 1.29 |
| Massachusetts Region (dimensionless) | 0 | 0 | 1 |

Warning: Some parameters are outside the suggested range. Estimates will be extrapolations with unknown errors.

| Probability of Perennial Flow Basin Characteristics | | | |
|---|-------|---------------------------------|------|
| 100% Perennial Flow Probability (0.22 mi2) | | | |
| Parameter | Value | Regression Equation Valid Range | |
| | | Min | Max |
| Drainage Area (square miles) | 0.22 | 0.01 | 1.99 |
| Percent Underlain By Sand And Gravel (percent) | 49.82 | 0 | 100 |
| Percent Forest (percent) | 31.87 | 0 | 100 |
| Massachusetts Region (dimensionless) | 0 | 0 | 1 |

| Bankfull Flows Basin Characteristics | | | |
|---|----------------------------|---------------------------------|------|
| 100% Bankfull Statewide SIR2013 5155 (0.22 mi2) | | | |
| Parameter | Value | Regression Equation Valid Range | |
| | | Min | Max |
| Drainage Area (square miles) | 0.22 (below min value 0.6) | 0.6 | 329 |
| Mean Basin Slope from 10m DEM (percent) | 5.403 | 2.2 | 23.9 |

Warning: Some parameters are outside the suggested range. Estimates will be extrapolations with unknown errors.

| Low Flows Statistics | | | | |
|----------------------|-------|------|--------------------------------|----------------------------|
| Statistic | Value | Unit | Prediction Error (percent) | Equivalent years of record |
| | | | 90-Percent Prediction Interval | |

| | | | | | Min | Max |
|--------|---------|-------|--|--|-----|-----|
| D50 | 0.2 | ft3/s | | | | |
| D60 | 0.13 | ft3/s | | | | |
| D70 | 0.0762 | ft3/s | | | | |
| D75 | 0.0572 | ft3/s | | | | |
| D80 | 0.0425 | ft3/s | | | | |
| D85 | 0.0278 | ft3/s | | | | |
| D90 | 0.0186 | ft3/s | | | | |
| D95 | 0.00896 | ft3/s | | | | |
| D98 | 0.00575 | ft3/s | | | | |
| D99 | 0.00379 | ft3/s | | | | |
| M7D2Y | 0.0106 | ft3/s | | | | |
| AUGD50 | 0.0318 | ft3/s | | | | |
| M7D10Y | 0.00309 | ft3/s | | | | |

This is the 7Q10 value= 0.00309 cfs or rounded to zero (0) cfs

<http://pubs.usgs.gov/wri/wri004135/> (<http://pubs.usgs.gov/wri/wri004135/>)

Ries_ K.G._ III_ 2000_ Methods for estimating low-flow statistics for Massachusetts streams: U.S. Geological Survey Water Resources Investigations Report 00-4135_ 81 p.

| Probability of Perennial Flow Statistics | | | | | | |
|--|-------|------|--------------------------|----------------------------|--------------------------------|------|
| Statistic | Value | Unit | Standard Error (percent) | Equivalent years of record | 90-Percent Prediction Interval | |
| | | | | | Min | Max |
| PROBPEREN | 0.75 | dim | 0.3 | | 0.54 | 0.79 |

http://pubs.usgs.gov/sir/2006/5031/pdfs/SIR_2006-5031rev.pdf (http://pubs.usgs.gov/sir/2006/5031/pdfs/SIR_2006-5031rev.pdf)

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.

| Bankfull Flows Statistics | | | | | | |
|---------------------------|-------|-------|----------------------------|----------------------------|--------------------------------|-----|
| Statistic | Value | Unit | Prediction Error (percent) | Equivalent years of record | 90-Percent Prediction Interval | |
| | | | | | Min | Max |
| BFWDTH | 7.9 | ft | | | | |
| BFDPTH | 0.59 | ft | | | | |
| BFAREA | 4.6 | ft2 | | | | |
| BFFLOW | 9.58 | ft3/s | | | | |

<http://pubs.usgs.gov/sir/2013/5155/> (<http://pubs.usgs.gov/sir/2013/5155/>)

Bent_ G.C._ and Waite_ A.M._ 2013_ Equations for estimating bankfull channel geometry and discharge for streams in Massachusetts: U.S. Geological Survey Scientific Investigations Report 2013-5155_ 62 p._

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StreamStats Version 3.0

Basin Characteristics Ungaged Site Report

Date: Wed Mar 22, 2017 9:46:21 AM GMT-4

Study Area: Massachusetts

NAD 1983 Latitude: 42.3095 (42 18 34)

NAD 1983 Longitude: -71.6516 (-71 39 06)

| Label | Value | Units | Definition |
|------------|-----------|-------------------------|--|
| DRNAREA | 0.000309 | square miles | Area that drains to a point on a stream |
| STRMTOT | 0 | miles | Total length of mapped streams in basin |
| DRFTPERSTR | -100000 | square mile per mile | Area of stratified drift per unit of stream length |
| MAREGION | 0 | dimensionless | Region of Massachusetts 0 for Eastern 1 for Western |
| FOREST | undefined | percent | Percentage of area covered by forest |
| CRSDFT | undefined | percent | Percentage of area of coarse-grained stratified drift |
| BSLDEM10M | 6.984 | percent | Mean basin slope computed from 10 m DEM |
| BSLDEM250 | undefined | percent | Mean basin slope computed from 1:250K DEM |
| ACRSDF | 0.000309 | square miles | Area underlain by stratified drift |
| LC11IMP | undefined | percent | Average percentage of impervious area determined from NLCD 2011 impervious dataset |
| LC11DEV | undefined | percent | Percentage of developed (urban) land from NLCD 2011 classes 21-24 |
| ELEV | 325 | feet | Mean Basin Elevation |
| PRECPRI00 | undefined | inches | Basin average mean annual precipitation for 1971 to 2000 from PRISM |
| LAKEAREA | 0 | percent | Percentage of Lakes and Ponds |
| OUTLETX | 187495 | State plane coordinates | Basin outlet horizontal (x) location in state plane coordinates |
| OUTLETY | 895455 | State plane coordinates | Basin outlet vertical (y) location in state plane coordinates |
| MAXTEPC | undefined | degrees | Mean annual maximum air temperature over basin area, in degrees Centigrade |
| WETLAND | 0 | percent | Percentage of Wetlands |
| CENTROIDX | 187495 | State plane coordinates | Basin centroid horizontal (x) location in state plane coordinates |
| CENTROIDY | 895490 | State plane coordinates | Basin centroid vertical (y) location in state plane units |
| PCTSNDGRV | undefined | percent | Percentage of land surface underlain by sand and gravel deposits |

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U.S. Department of the Interior | U.S. Geological Survey

URL: http://streamstatsags.cr.usgs.gov/v3_beta/BCreport.htm

Page Contact Information: [StreamStats Help](#)

Page Last Modified: 12/06/2016 22:50:12 (Web2)

[Streamstats Status](#) [News](#)



ATTACHMENT D

MassDEP Phase 1 Site Assessment Map and NHESP Map



MassDEP - Bureau of Waste Site Cleanup

Site Information:

SARGENT RESIDENCE
2 WOODLAND ROAD NORTHBOROUGH, MA
2-000020070

NAD83 UTM Meters:

4687546mN, 281477mE (Zone: 19)
January 12, 2017

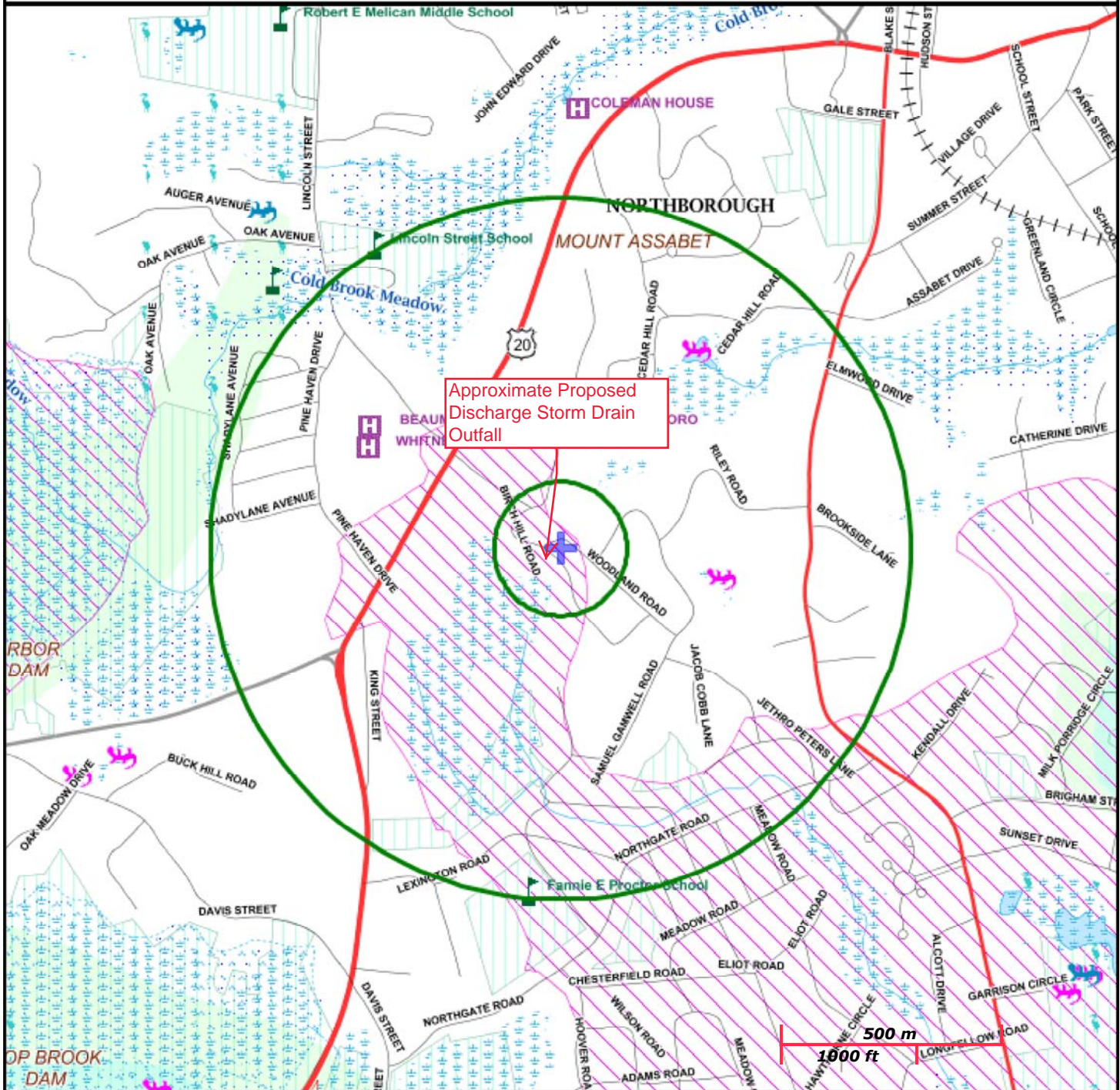
Phase 1 Site Assessment Map: 500 feet & 0.5 Mile Radii

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



MassDEP

Commonwealth of Massachusetts
Department of Environmental Protection



Approximate Proposed
Discharge Storm Drain
Outfall

500 m
1000 ft

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

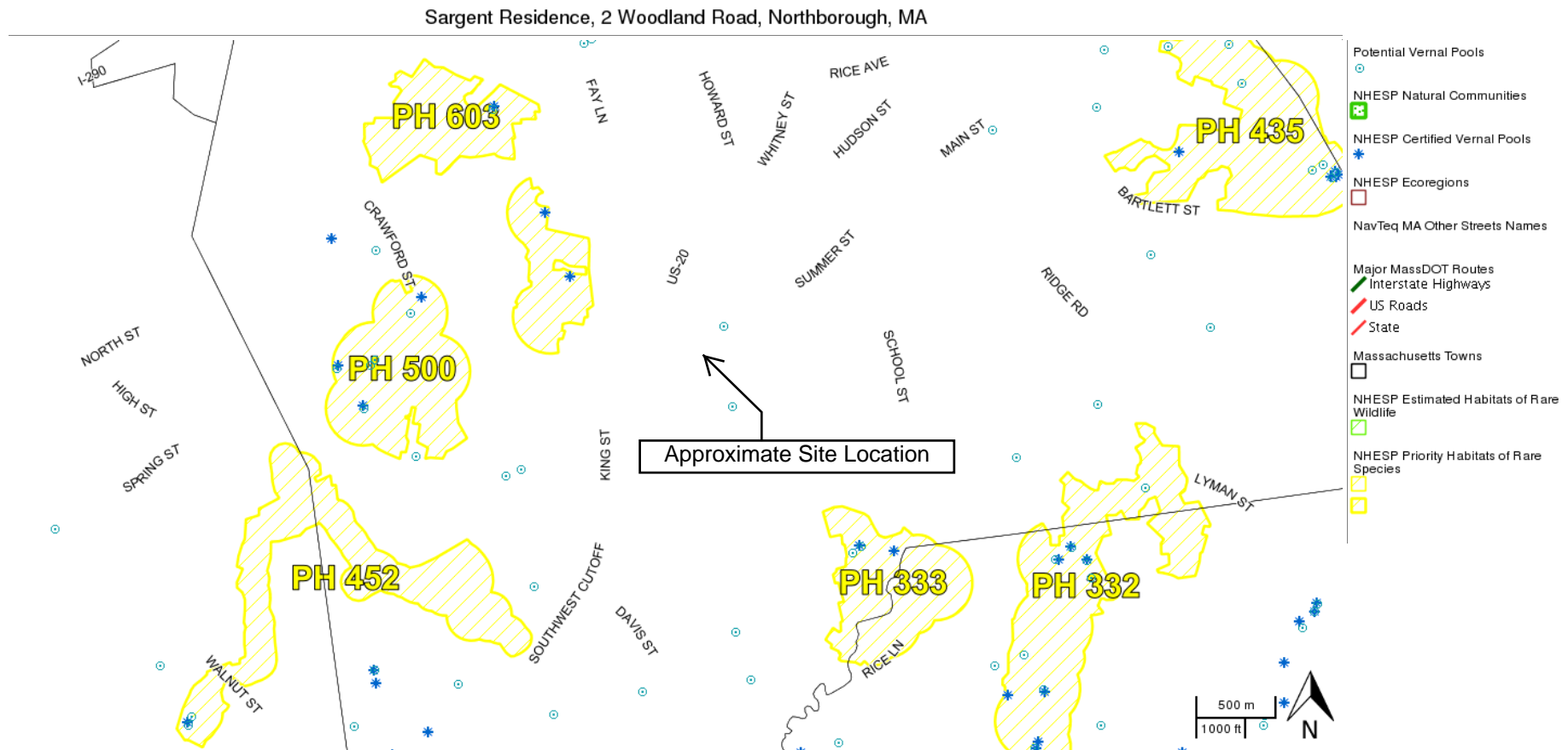
Hydrography: Open Water, PWS Reservoir, Tidal Flat

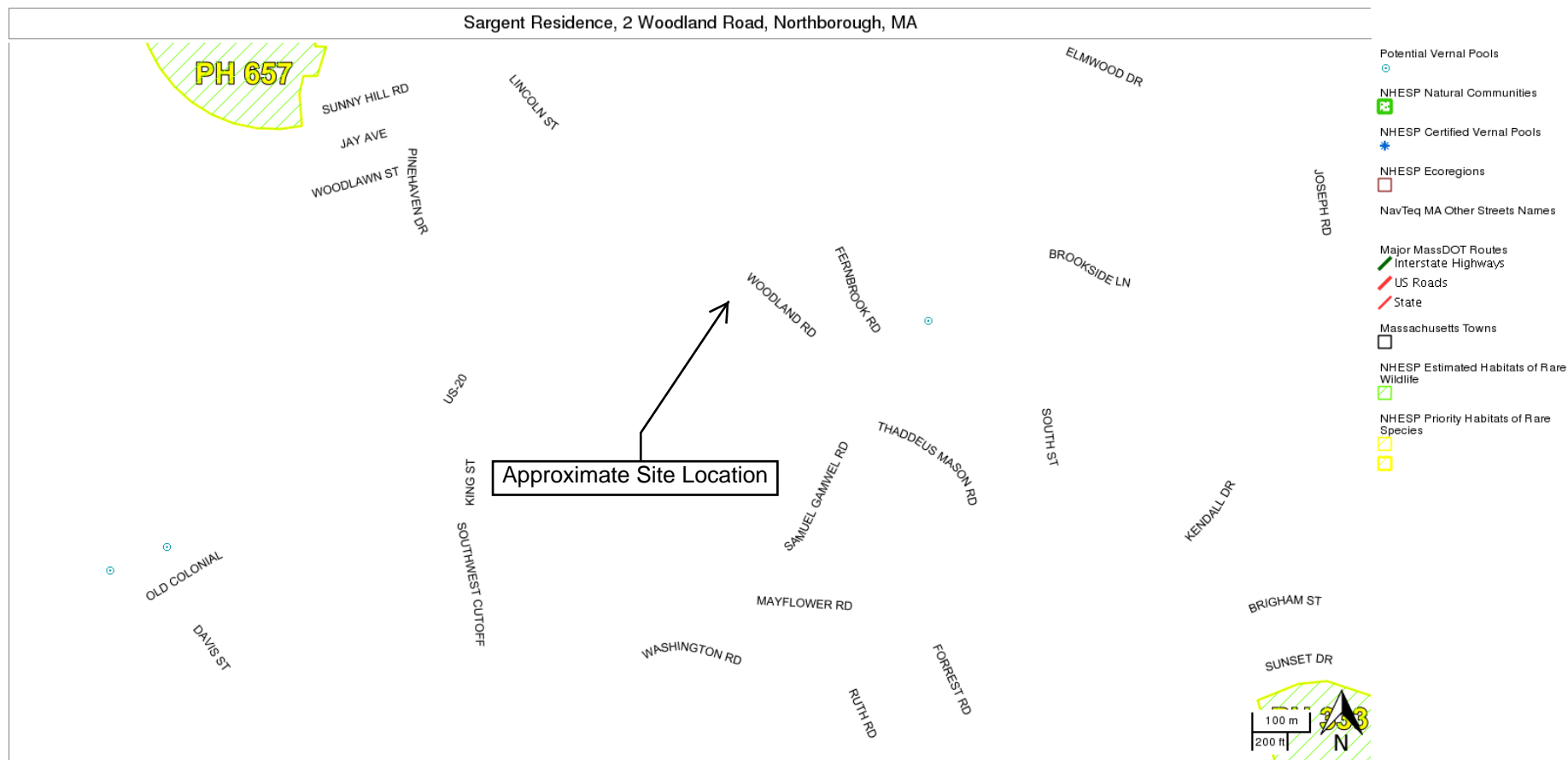
Wetlands: Freshwater, Saltwater, Cranberry Bog

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





ATTACHMENT E

**United States Department of the Interior, Fish and Wildlife Services (FWS)
Threatened or Endangered Species or Critical Habitat Letter**





United States Department of the Interior



FISH AND WILDLIFE SERVICE
New England Ecological Services Field Office
70 COMMERCIAL STREET, SUITE 300
CONCORD, NH 03301
PHONE: (603)223-2541 FAX: (603)223-0104
URL: www.fws.gov/newengland

Consultation Code: 05E1NE00-2017-SLI-1142

March 21, 2017

Event Code: 05E1NE00-2017-E-02135

Project Name: Sargent Residence, 2 Woodland Road, Northborough, MA

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



United States Department of Interior
Fish and Wildlife Service

Project name: Sargent Residence, 2 Woodland Road, Northborough, MA

Official Species List

Provided by:

New England Ecological Services Field Office

70 COMMERCIAL STREET, SUITE 300

CONCORD, NH 03301

(603) 223-2541

<http://www.fws.gov/newengland>

Consultation Code: 05E1NE00-2017-SLI-1142

Event Code: 05E1NE00-2017-E-02135

Project Type: SPILL / RELEASE

Project Name: Sargent Residence, 2 Woodland Road, Northborough, MA

Project Description: Short term (less than 30 days) remediation of #2 fuel oil impacted soil at 2 Woodland Road, in Northborough, MA, where excavation, dewatering, groundwater treatment and discharge is proposed to a storm drain that discharges to the ground surface and wetland area under an EPA RGP. Proposed remediation and discharge under an RGP is anticipated to be completed in less than 3 weeks.

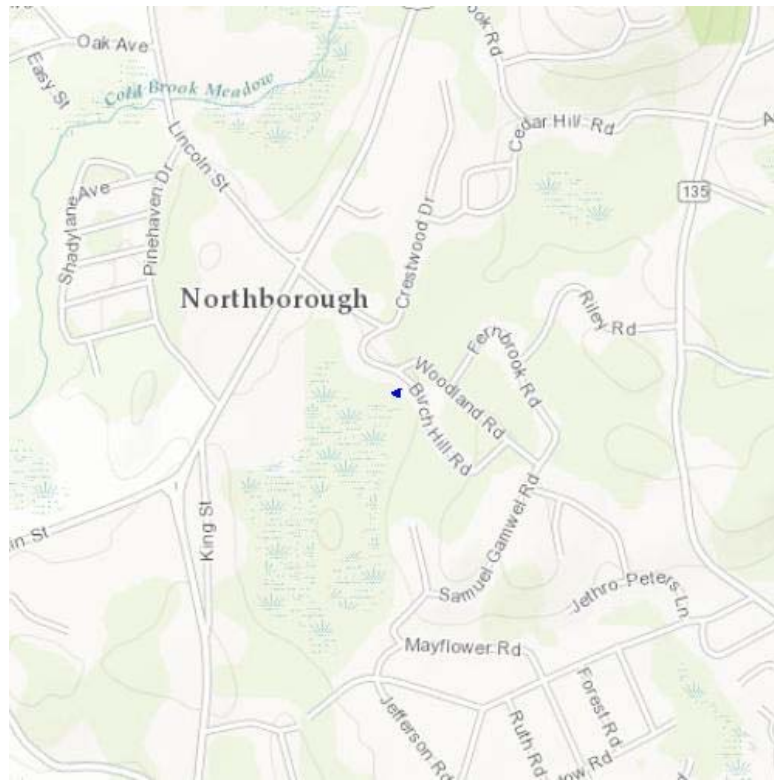
Please Note: The FWS office may have modified the Project Name and/or Project Description, so it may be different from what was submitted in your previous request. If the Consultation Code matches, the FWS considers this to be the same project. Contact the office in the 'Provided by' section of your previous Official Species list if you have any questions or concerns.



United States Department of Interior
Fish and Wildlife Service

Project name: Sargent Residence, 2 Woodland Road, Northborough, MA

Project Location Map:



Project Coordinates: MULTIPOLYGON (((-71.65177524089815 42.30913307563285, -71.6518020629883 42.30903191412322, -71.65177792310716 42.308996210022165, -71.65199518203737 42.309049766166154, -71.65175914764406 42.30914696053326, -71.65177524089815 42.30913307563285)))

Project Counties: Worcester, MA



United States Department of Interior
Fish and Wildlife Service

Project name: Sargent Residence, 2 Woodland Road, Northborough, MA

Endangered Species Act Species List

There are a total of 1 threatened or endangered 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. Critical habitats listed under the **Has Critical Habitat** column may or may not lie within your project area. See the **Critical habitats within your project area** section further below for critical habitat that lies within your project. Please contact the designated FWS office if you have questions.

| Mammals | Status | Has Critical Habitat | Condition(s) |
|---|------------|----------------------|--------------|
| Northern long-eared Bat (<i>Myotis septentrionalis</i>) Population: Wherever found | Threatened | | |



United States Department of Interior
Fish and Wildlife Service

Project name: Sargent Residence, 2 Woodland Road, Northborough, MA

Critical habitats that lie within your project area

There are no critical habitats within your project area.

Adam Last

From: Tur, Maria <maria_tur@fws.gov>
Sent: Tuesday, May 02, 2017 2:17 PM
To: Adam Last
Subject: Re: 2 Woodland Rd, Northborough

Hello Mr. Last,

As you stated, there will be no effect to the northern long-eared bat as a result of the project activities. Thank you for coordinating.

Maria E. Tur
U.S. Fish and Wildlife Service
New England Field Office
70 Commercial Street, Suite 300
Concord, NH 03301
Phone (603) 223-2541 x6419
FAX (603) 223-0104

<http://www.fws.gov/newengland/>

On Tue, May 2, 2017 at 1:27 PM, Adam Last <alast@cea-inc.com> wrote:

Good Afternoon Ms. Tur,

It was nice to talk with you earlier today and thank you for taking the time to answer my question regarding the northern long-eared bat. As discussed, we are preparing for remedial activities in response to a fuel oil release at the 2 Woodland Road property in Northborough, Massachusetts and during that process have learned that there is one (1) threatened or endangered species, the northern long-eared bat, that should be considered in the effects analysis for the remediation project (see attached letter).

The proposed remediation project does not involve the cutting down or removal of any trees. Because no trees will be cut there will be no effect to the northern long-eared bat, which roosts in trees during non-winter months. Therefore, the remediation project and associated treated water discharge are “not likely to adversely affect” the northern long-eared bat.

Could you confirm in a reply email or letter that this understanding is accurate?

Thank you,

Adam

Adam J. Last, P.E., LSP, TPI

Principal Engineer



Corporate Environmental Advisors

127 Hartwell Street, Suite 2

West Boylston, MA 01583

T: (508) 835-8822, Ext 260

C: (508) 400-7944

alast@cea-inc.com

ATTACHMENT F

MACRIS Historic Places Report



Massachusetts Cultural Resource Information Sys

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Below are the results of your search, using the following search criteria:

Town(s): Northborough

Resource Type(s): Building, Structure

For more information about this page and how to use it, [click here](#)

| Inv. No. | Property Name | Street | Town | Year | SR | |
|-------------------------|---|----------------|--------------|--------|-----------|---|
| NBO.224 | Wood, David F. Woolen Mill Worker Housing | 2-4 Allen Ct | Northborough | c 1866 | |  |
| NBO.225 | Wood, David F. Woolen Mill Worker Housing | 6-8 Allen Ct | Northborough | c 1866 | |  |
| NBO.226 | Wood, David F. Woolen Mill Worker Housing | 10-12 Allen Ct | Northborough | c 1866 | |  |
| NBO.227 | Wood, David F. Woolen Mill Worker Housing | 14-16 Allen Ct | Northborough | c 1866 | |  |
| NBO.228 | Wood, David F. Woolen Mill Worker Housing | 18 Allen Ct | Northborough | c 1866 | |  |
| NBO.900 | Allen Street Bridge | Allen St | Northborough | | |  |
| NBO.142 | Allen, Samuel House | 16 Allen St | Northborough | c 1830 | |  |
| NBO.339 | | 16 Allen St | Northborough | c 1920 | | |
| NBO.229 | Wood, David F. Woolen Mill Worker Housing | 20 Allen St | Northborough | c 1860 | |  |
| NBO.230 | Wood, David F. Woolen Mill Worker Housing | 21 Allen St | Northborough | c 1860 | |  |
| NBO.231 | Wood, David F. Woolen Mill Worker Housing | 22 Allen St | Northborough | c 1860 | |  |
| NBO.232 | Wood, David F. Woolen Mill Worker Housing | 23 Allen St | Northborough | c 1860 | |  |
| NBO.233 | Wood, David F. Woolen Mill Worker Housing | 24 Allen St | Northborough | c 1860 | |  |
| NBO.234 | Wood, David F. Woolen Mill Worker Housing | 27 Allen St | Northborough | c 1860 | |  |
| NBO.905 | Assabet River Bridge | Assabet River | Northborough | 1897 | SR |  |

Page of 23

[Next 15](#)

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[Previous](#)
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Below are the results of your search, using the following search criteria:

Town(s): Northborough

Resource Type(s): Building, Structure

For more information about this page and how to use it, [click here](#)

| Inv. No. | Property Name | Street | Town | Year | SR | |
|-------------------------|--|-----------------|--------------|--------|-----------|---|
| NBO.924 | Assabet River Railroad Bridge | Assabet River | Northborough | c 1855 | |  |
| NBO.143 | Coolidge, Abigail - Goodnow, Henry House | 88 Ball St | Northborough | c 1800 | |  |
| NBO.15 | Bartlett, Capt. Joel House | 85 Bartlett St | Northborough | c 1820 | |  |
| NBO.17 | Bartlett, W. A. House | 96 Bartlett St | Northborough | c 1855 | |  |
| NBO.18 | Chesbro, George L. House | 103 Bartlett St | Northborough | c 1863 | SR |  |
| NBO.16 | Rice, Dea. Matthias House | 189 Bartlett St | Northborough | c 1746 | |  |
| NBO.32 | Bartlett, Jotham House | 7 Belmont St | Northborough | c 1830 | |  |
| NBO.235 | Deerfoot Farms Dairy Creamery | 10 Blake St | Northborough | c 1900 | |  |
| NBO.236 | Munroe Tavern Stables | 11 Blake St | Northborough | c 1860 | | |
| NBO.237 | Brigham, Cyrus T. and Company Store | 19 Blake St | Northborough | c 1880 | |  |
| NBO.25 | Munroe Tavern | 20-22 Blake St | Northborough | r 1750 | |  |
| NBO.24 | Gallagher, Edwin House | 27 Blake St | Northborough | c 1870 | |  |
| NBO.145 | Howe, B. - Whitcomb, A. House | 131 Brigham St | Northborough | 1792 | |  |
| NBO.238 | Brigham, Jesse House | 202 Brigham St | Northborough | c 1735 | |  |
| NBO.52 | Northborough Woolen Company Office | 7 Chapin Ct | Northborough | 1882 | |  |

Page **2** of 23

[Previous 15](#)
[Next 15](#)

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[Previous](#)
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




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Town(s): Northborough

Resource Type(s): Building, Structure

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| Inv. No. | Property Name | Street | Town | Year | SR | |
|-------------------------|--|-----------------|--------------|--------|-----------|---|
| NBO.51 | Davis, Isaac Cotton Mill Worker Housing | 10 Chapin Ct | Northborough | 1832 | |  |
| NBO.50 | Davis, Isaac Cotton Mill Worker Housing | 12 Chapin Ct | Northborough | c 1832 | |  |
| NBO.40 | Davis, Isaac Cotton Mill Worker Housing | 16 Chapin Ct | Northborough | c 1832 | |  |
| NBO.146 | Rice, S. - Valentine, Elmer House | 50 Cherry St | Northborough | c 1716 | |  |
| NBO.925 | Church Street Stone Bridge over Cold Harbor Brook | Church St | Northborough | c 1860 | SR | |
| NBO.61 | Rice, John - Fay, Joseph T. House | 6 Church St | Northborough | c 1850 | |  |
| NBO.63 | Page, Margaret B. - Ellsworth, William F. House | 9 Church St | Northborough | c 1880 | |  |
| NBO.62 | Stone, John House | 10 Church St | Northborough | c 1855 | |  |
| NBO.64 | Northborough Fire and Police Station | 11-13 Church St | Northborough | 1926 | |  |
| NBO.67 | | 25 Church St | Northborough | 1929 | |  |
| NBO.68 | Northborough Unitarian Church Parsonage | 33 Church St | Northborough | 1875 | |  |
| NBO.69 | Paul, Walter House | 39 Church St | Northborough | c 1880 | |  |
| NBO.77 | First Church of Northborough - Unitarian Church | 40 Church St | Northborough | 1950 | SR |  |
| NBO.138 | First Church of Northborough - Unitarian Church Hall | 40 Church St | Northborough | 1948 | SR |  |
| NBO.1 | Allen, Dr. Joseph House and School | 49 Church St | Northborough | 1818 | SR |  |

Page of 23

[Previous 15](#)
[Next 15](#)

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










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Town(s): Northborough

Resource Type(s): Building, Structure

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| Inv. No. | Property Name | Street | Town | Year | SR | |
|-------------------------|---|-------------------|--------------|--------|-----------|---|
| NBO.70 | Bigelow, Walter J. House | 64 Church St | Northborough | c 1900 | |  |
| NBO.71 | Bigelow, Ezra Hastings House | 70 Church St | Northborough | c 1900 | |  |
| NBO.2 | First Evangelical Congregational Church | 71 Church St | Northborough | c 1832 | SR |  |
| NBO.72 | Wood, Eliab House | 76 Church St | Northborough | c 1877 | |  |
| NBO.241 | Atwood, Francis H. House | 86 Church St | Northborough | c 1897 | |  |
| NBO.73 | Duplisse, Peter House | 87 Church St | Northborough | c 1880 | |  |
| NBO.74 | Purinton, G. House | 91 Church St | Northborough | c 1855 | |  |
| NBO.149 | Fay, Lewis House | 92 Church St | Northborough | c 1855 | |  |
| NBO.44 | West District Schoolhouse | 264 Church St | Northborough | c 1846 | |  |
| NBO.43 | Holloway, Lt. William House | 302 Church St | Northborough | c 1711 | |  |
| NBO.75 | Rice, Nathan House | 334 Church St | Northborough | c 1855 | |  |
| NBO.37 | Orne, Capt. Edward House | 335 Church St | Northborough | 1826 | |  |
| NBO.33 | Warren, Eliphalet House | 80 Colburn St | Northborough | r 1720 | |  |
| NBO.45 | Fay Steam Saw Mill | 3 Colby St | Northborough | c 1847 | |  |
| NBO.926 | Cold Harbor Brook Railroad Bridge | Cold Harbor Brook | Northborough | c 1866 | |  |

Page [4](#) of 23

[Previous 15](#)
[Next 15](#)

340 Properties Found

[New Search](#)
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Resource Type(s): Building, Structure

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| Inv. No. | Property Name | Street | Town | Year | SR |
|-------------------------|---------------------------------------|-----------------|--------------|--------|---|
| NBO.109 | Crawford Farm | Crawford St | Northborough | 1734 |  |
| NBO.150 | Bruce, Silas House | 239 Crawford St | Northborough | c 1800 |  |
| NBO.151 | Howe, C. House | 279 Crawford St | Northborough | c 1790 |  |
| NBO.152 | Bartlett House | 292 Crawford St | Northborough | r 1750 |  |
| NBO.153 | Johnson, Charles Saw Mill and House | 342 Crawford St | Northborough | c 1850 |  |
| NBO.242 | Williams, Stephen House | 363 Crawford St | Northborough | 1799 |  |
| NBO.154 | Davis, George C. Tannery and House | 6 Davis Ave | Northborough | c 1781 |  |
| NBO.155 | | 284 Davis St | Northborough | c 1900 |  |
| NBO.243 | Young, Richard Hopkins House | 307 Davis St | Northborough | c 1890 |  |
| NBO.47 | Davis, George C. House | 375 Davis St | Northborough | 1851 |  |
| NBO.136 | Davis, George C. Barn Complex | 375 Davis St | Northborough | c 1855 | |
| NBO.137 | Davis, George C. Farm Worker Housing | 375 Davis St | Northborough | c 1900 | |
| NBO.19 | Davis, Gov. John - Davis, W. E. House | 385 Davis St | Northborough | c 1830 |  |
| NBO.46 | Davis, Col. Joseph House | 386 Davis St | Northborough | c 1779 |  |
| NBO.48 | Davis, Phineas House | 405 Davis St | Northborough | c 1730 |  |

Page **5** of 23

[Previous 15](#)
[Next 15](#)

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[New Search](#)
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[Previous](#)
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Below are the results of your search, using the following search criteria:

Town(s): Northborough

Resource Type(s): Building, Structure

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| Inv. No. | Property Name | Street | Town | Year | SR |
|-------------------------|--|----------------------|--------------|--------|---|
| NBO.244 | Bartlett, U. - Merriam, Moses B. House | 15 East Main St | Northborough | c 1830 |  |
| NBO.245 | Greene, Frank H. House | 19 East Main St | Northborough | c 1890 |  |
| NBO.27 | Warren House | 32 East Main St | Northborough | c 1795 |  |
| NBO.246 | Mitchell, Edward A. House | 34 East Main St | Northborough | c 1890 |  |
| NBO.247 | Burbank, Peter - Desrosiers, Joseph H. House | 76 East Main St | Northborough | c 1883 |  |
| NBO.248 | Cox, John House | 90 East Main St | Northborough | c 1890 |  |
| NBO.249 | Lowe, John W. House | 117-119 East Main St | Northborough | c 1890 |  |
| NBO.21 | Patterson, A. House | 137 East Main St | Northborough | c 1760 |  |
| NBO.22 | Allen, L. - Rice, J. House | 142 East Main St | Northborough | c 1795 |  |
| NBO.20 | Goodnow - Bartlett, Gill and E. B. House | 181 East Main St | Northborough | c 1745 |  |
| NBO.130 | Goodnow - Bartlett, Gill and E. B. Barn | 181 East Main St | Northborough | c 1850 | |
| NBO.131 | Goodnow - Bartlett, Gill and E. B. Tri-Part Garage | 181 East Main St | Northborough | c 1900 | |
| NBO.132 | Goodnow - Bartlett, Gill and E. B. Kennel - Shed | 181 East Main St | Northborough | c 1900 | |
| NBO.133 | Goodnow - Bartlett, Gill and E. B. A-Frame Shed | 181 East Main St | Northborough | c 1970 | |
| NBO.134 | Goodnow - Bartlett, Gill and E. B. Barn | 181 East Main St | Northborough | r 1850 | |

Page **6** of 23

[Previous 15](#)
[Next 15](#)

340 Properties Found

[New Search](#)
[New Search — Same Town\(s\)](#)
[Previous](#)
[MHC Home](#) | [MACRIS Home](#)

Massachusetts Cultural Resource Information Sys

MACRIS

[MHC Home](#) | [MACRIS Home](#)

Results

[Get Results in Report Format](#)
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Town(s): Northborough

Resource Type(s): Building, Structure

For more information about this page and how to use it, [click here](#)

| Inv. No. | Property Name | Street | Town | Year | SR |
|-------------------------|---|---------------|--------------|--------|---|
| NBO.49 | Fay, Asa House | 50 Fay Ln | Northborough | c 1794 |  |
| NBO.36 | Fay, Nahum House | 66 Green St | Northborough | c 1770 |  |
| NBO.28 | Livermore, Dea. Jonathan House | 500 Green St | Northborough | 1727 |  |
| NBO.157 | Brigham, John House | 518 Green St | Northborough | r 1855 |  |
| NBO.250 | Murray, Charles C. House | 110 Howard St | Northborough | c 1898 |  |
| NBO.108 | Townsend, Joshua - Holbrook, Lowell House | 300 Howard St | Northborough | 1744 |  |
| NBO.251 | Green, Vera House | 333 Howard St | Northborough | 1953 |  |
| NBO.158 | Rice, Benjamin House | 386 Howard St | Northborough | 1790 |  |
| NBO.29 | Keyes, Capt. Prentice House | 660 Howard St | Northborough | c 1830 |  |
| NBO.927 | Hudson Street Bridge over Cold Harbor Brook | Hudson St | Northborough | c 1860 | |
| NBO.114 | Rice, Anson House | 9 Hudson St | Northborough | c 1850 |  |
| NBO.113 | Russell, S. House | 14 Hudson St | Northborough | c 1842 |  |
| NBO.252 | Parmenter, Albert House | 15 Hudson St | Northborough | c 1880 |  |
| NBO.112 | Fay, Herman House | 16 Hudson St | Northborough | c 1766 |  |
| NBO.111 | Fairbanks, John - Montague, Richard House | 17 Hudson St | Northborough | c 1855 |  |

Page **7** of 23

[Previous 15](#)
[Next 15](#)

340 Properties Found

[New Search](#)
[New Search — Same Town\(s\)](#)
[Previous](#)
[MHC Home](#) | [MACRIS Home](#)

Massachusetts Cultural Resource Information Sys

MACRIS

[MHC Home](#) | [MACRIS Home](#)

Results

[Get Results in Report Format](#)
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Town(s): Northborough

Resource Type(s): Building, Structure

For more information about this page and how to use it, [click here](#)

| Inv. No. | Property Name | Street | Town | Year | SR |
|-------------------------|---|---------------|--------------|--------|---|
| NBO.253 | Rice, Eveline M. House | 24 Hudson St | Northborough | c 1887 |  |
| NBO.160 | Worcester & Marlborough Street Railway Powerhouse | 43 Hudson St | Northborough | 1897 |  |
| NBO.110 | Proctor, Harwood and Josiah House | 47 Hudson St | Northborough | c 1860 |  |
| NBO.254 | Bush, Warren T. House | 55 Hudson St | Northborough | c 1850 |  |
| NBO.255 | Farwell. Walter M. Comb Factory | 56 Hudson St | Northborough | c 1900 |  |
| NBO.256 | Lilley, Charles E. House | 75 Hudson St | Northborough | c 1900 |  |
| NBO.257 | Rice, Curtis House | 87 Hudson St | Northborough | c 1850 |  |
| NBO.258 | Patterson, Henry House | 93 Hudson St | Northborough | c 1880 |  |
| NBO.259 | Farwell, Alonzo C. House | 110 Hudson St | Northborough | c 1860 |  |
| NBO.161 | Farwell, Walter M. House | 114 Hudson St | Northborough | c 1880 |  |
| NBO.260 | Bruso, Isaac House | 121 Hudson St | Northborough | c 1860 |  |
| NBO.261 | Chapdelaine, Joseph House | 149 Hudson St | Northborough | c 1890 |  |
| NBO.262 | Mosso, Joseph House | 153 Hudson St | Northborough | c 1860 |  |
| NBO.263 | Contois, Oliver House | 161 Hudson St | Northborough | c 1860 |  |
| NBO.264 | Wood, David F. Woolen Mill Worker Housing | 183 Hudson St | Northborough | c 1860 |  |

Page **8** of 23

[Previous 15](#)
[Next 15](#)

340 Properties Found

[New Search](#)
[New Search — Same Town\(s\)](#)
[Previous](#)
[MHC Home](#) | [MACRIS Home](#)

Massachusetts Cultural Resource Information System

MACRIS

[MHC Home](#) | [MACRIS Home](#)

Results

[Get Results in Report Format](#)
☐ PDF ☒ Spreadsheet

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Town(s): Northborough

Resource Type(s): Building, Structure

For more information about this page and how to use it, [click here](#)

| Inv. No. | Property Name | Street | Town | Year | SR |
|-------------------------|---|----------------|--------------|--------|---|
| NBO.265 | Wood, David F. Woolen Mill Worker Housing | 185 Hudson St | Northborough | c 1860 |  |
| NBO.266 | Woodside Mills | 200 Hudson St | Northborough | 1888 |  |
| NBO.267 | Wood, David F. Woolen Mill Worker Housing | 215 Hudson St | Northborough | c 1860 |  |
| NBO.268 | Wood, David F. Woolen Mill Worker Housing | 216 Hudson St | Northborough | c 1860 |  |
| NBO.269 | Wood, David F. Woolen Mill Worker Housing | 219 Hudson St | Northborough | c 1860 |  |
| NBO.270 | Wood, David F. Woolen Mill Worker Housing | 220 Hudson St | Northborough | c 1860 |  |
| NBO.162 | Goodrich Brickyard Model House | 238 Hudson St | Northborough | c 1850 |  |
| NBO.271 | Chapin, Ezra Wood Estate Cottage | 255 Hudson St | Northborough | c 1880 |  |
| NBO.272 | Illingworth, Robert House | 261 Hudson St | Northborough | c 1890 |  |
| NBO.41 | Chapinville Post Office and General Store | 317 Hudson St | Northborough | c 1880 |  |
| NBO.55 | Wheeler, Edmund W. House | 342 Hudson St | Northborough | 1889 |  |
| NBO.42 | Barnard, E. House | 343 Hudson St | Northborough | c 1800 |  |
| NBO.54 | | 374 Hudson St | Northborough | r 1840 |  |
| NBO.53 | Barnard, Luther - Hinds, David House | 400 Hudson St | Northborough | c 1850 |  |
| NBO.35 | Holbrook, T. House | 6 Lancaster Dr | Northborough | c 1850 |  |

Page **9** of 23

[Previous 15](#)
[Next 15](#)

340 Properties Found

[New Search](#)
[New Search — Same Town\(s\)](#)
[Previous](#)
[MHC Home](#) | [MACRIS Home](#)

Massachusetts Cultural Resource Information System

MACRIS

[MHC Home](#) | [MACRIS Home](#)

Results

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Below are the results of your search, using the following search criteria:

Town(s): Northborough

Resource Type(s): Building, Structure

For more information about this page and how to use it, [click here](#)

| Inv. No. | Property Name | Street | Town | Year | SR |
|-------------------------|---|----------|--------------|--------|-----------|
| NBO.115 | Westborough State Hospital Piggery | Lyman St | Northborough | 1890 | SR |
| NBO.116 | Westborough State Hospital Barn | Lyman St | Northborough | c 1918 | SR |
| NBO.117 | Westborough State Hospital Engineer's Home | Lyman St | Northborough | 1906 | SR |
| NBO.118 | Westborough State Hospital Engineer's Garage | Lyman St | Northborough | c 1900 | SR |
| NBO.120 | Westborough State Hospital - Chauncy Hall | Lyman St | Northborough | 1930 | SR |
| NBO.121 | Westborough State Hospital Pole Barn | Lyman St | Northborough | 1967 | SR |
| NBO.122 | Westborough State Hospital Hay Barn | Lyman St | Northborough | 1965 | SR |
| NBO.123 | Westborough State Hospital Power Plant | Lyman St | Northborough | c 1930 | SR |
| NBO.124 | Westborough State Hospital Auxiliary Garage | Lyman St | Northborough | 1968 | SR |
| NBO.125 | Westborough State Hospital Salvage Yard Buildings | Lyman St | Northborough | 1929 | SR |
| NBO.126 | Westborough State Hospital Shed | Lyman St | Northborough | r 1935 | SR |
| NBO.127 | Westborough State Hospital Garage | Lyman St | Northborough | r 1935 | SR |
| NBO.128 | Westborough State Hospital Pumping Station | Lyman St | Northborough | r 1945 | SR |
| NBO.129 | Westborough State Hospital Pumping Station | Lyman St | Northborough | c 1966 | SR |
| NBO.909 | Westborough State Hospital Power Plant | Lyman St | Northborough | 1964 | SR |

Page **10** of 23

[Previous 15](#)
[Next 15](#)

340 Properties Found

[New Search](#)
[New Search — Same Town\(s\)](#)
[Previous](#)
[MHC Home](#) | [MACRIS Home](#)

Massachusetts Cultural Resource Information System

MACRIS

[MHC Home](#) | [MACRIS Home](#)

Results

[Get Results in Report Format](#)
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Town(s): Northborough

Resource Type(s): Building, Structure

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| Inv. No. | Property Name | Street | Town | Year | SR |
|-------------------------|--|-------------|--------------|--------|---|
| NBO.910 | Westborough State Hospital Water Tank | Lyman St | Northborough | c 1950 | SR |
| NBO.911 | Westborough State Hospital Water Tank | Lyman St | Northborough | c 1950 | SR |
| NBO.912 | Westborough State Hospital Sewage Treatment Tank | Lyman St | Northborough | c 1970 | SR |
| NBO.913 | Westborough State Hospital Transformer | Lyman St | Northborough | r 1965 | SR |
| NBO.914 | Westborough State Hospital Agricultural Land | Lyman St | Northborough | | SR |
| NBO.14 | Newton, S. - Norcross, Stephen W. House | 1 Lyman St | Northborough | c 1830 |  |
| NBO.13 | Norcross, Stephen House | 41 Lyman St | Northborough | c 1870 |  |
| NBO.3 | Northborough Town Hall | Main St | Northborough | c 1985 |  |
| NBO.59 | Curve Inn | Main St | Northborough | r 1840 | |
| NBO.104 | Exxon Service Station | Main St | Northborough | 1969 |  |
| NBO.906 | Main Street - Assabet River Bridge | Main St | Northborough | c 1860 |  |
| NBO.907 | Assabet River Dam | Main St | Northborough | c 1860 |  |
| NBO.82 | Rice, Anson - Winn-Whittaker Building | 10 Main St | Northborough | c 1830 |  |
| NBO.5 | Carruth, C. House | 20 Main St | Northborough | c 1855 |  |
| NBO.103 | Northborough Evangelical Congregational Church | 23 Main St | Northborough | 1847 |  |

Page **11** of 23

[Previous 15](#)
[Next 15](#)

340 Properties Found

[New Search](#)
[New Search — Same Town\(s\)](#)
[Previous](#)
[MHC Home](#) | [MACRIS Home](#)

Massachusetts Cultural Resource Information System

MACRIS

[MHC Home](#) | [MACRIS Home](#)

Results

[Get Results in Report Format](#)
☐ PDF ☒ Spreadsheet

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Town(s): Northborough

Resource Type(s): Building, Structure

For more information about this page and how to use it, [click here](#)

| Inv. No. | Property Name | Street | Town | Year | SR | |
|-------------------------|--|---------------|--------------|--------|-----------|---|
| NBO.9 | Gale, Cyrus Jr. House | 24 Main St | Northborough | c 1850 | |  |
| NBO.11 | Northborough National Bank | 28 Main St | Northborough | 1854 | |  |
| NBO.10 | Ball, Dr. Stephen III House | 30 Main St | Northborough | c 1800 | |  |
| NBO.102 | Gale, Cyrus House | 33 Main St | Northborough | c 1855 | |  |
| NBO.84 | Northborough Public Library - Gale Library | 34 Main St | Northborough | 1895 | |  |
| NBO.8 | Gale, Cyrus General Store | 37-39 Main St | Northborough | c 1855 | |  |
| NBO.7 | Ball, Dr. Stephen Jr. House | 38 Main St | Northborough | c 1730 | |  |
| NBO.6 | Gale, Capt. Cyrus House | 43 Main St | Northborough | c 1766 | |  |
| NBO.85 | Leonard, J. T. House | 44 Main St | Northborough | c 1868 | |  |
| NBO.101 | Stratton, L. F. House | 45-47 Main St | Northborough | c 1898 | |  |
| NBO.86 | Ball, U. House | 48 Main St | Northborough | r 1840 | |  |
| NBO.100 | Seaver, Abraham Wood House | 51 Main St | Northborough | c 1855 | |  |
| NBO.12 | First Baptist Church of Northborough | 52 Main St | Northborough | 1860 | SR |  |
| NBO.99 | Davis, Isaac - Fay, Rev. Warren Fay House | 55 Main St | Northborough | 1841 | |  |
| NBO.88 | Moore, Lorenzo L. House | 56 Main St | Northborough | c 1870 | |  |

Page **12** of 23

[Previous 15](#)
[Next 15](#)

340 Properties Found

[New Search](#)
[New Search — Same Town\(s\)](#)
[Previous](#)
[MHC Home](#) | [MACRIS Home](#)

Massachusetts Cultural Resource Information System

MACRIS

[MHC Home](#) | [MACRIS Home](#)

Results
















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Resource Type(s): Building, Structure

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| Inv. No. | Property Name | Street | Town | Year | SR |
|-------------------------|---|---------------|--------------|--------|---|
| NBO.98 | Wood, Samuel Jr. House | 59 Main St | Northborough | c 1871 |  |
| NBO.89 | Jewett, Dr. Henry A. House | 60 Main St | Northborough | c 1855 |  |
| NBO.97 | Northborough High School | 63 Main St | Northborough | 1938 |  |
| NBO.90 | Haynes, Silas - Hildreth, Milo House | 64 Main St | Northborough | c 1855 |  |
| NBO.96 | Root, Jethro B. House | 67 Main St | Northborough | c 1870 |  |
| NBO.91 | Smith, Edward H. House | 70 Main St | Northborough | c 1898 |  |
| NBO.92 | Northborough Baptist Church Parsonage | 74-76 Main St | Northborough | c 1870 |  |
| NBO.4 | Grout, Seth - Wood, Samuel III House | 75 Main St | Northborough | r 1750 |  |
| NBO.338 | Mason, Thaddeus Barn | 75 Main St | Northborough | r 1850 |  |
| NBO.93 | Wood, Samuel House | 80 Main St | Northborough | c 1855 |  |
| NBO.94 | Yarn Mill Shop | 84 Main St | Northborough | |  |
| NBO.95 | Smith, Edward Herbert Bone and Grist Mill | 88 Main St | Northborough | c 1870 |  |
| NBO.165 | Gale, Capt. Cyrus House | 96 Main St | Northborough | c 1855 |  |
| NBO.166 | Wood, Capt. Samuel - Seaver, Samuel House | 97 Main St | Northborough | c 1750 |  |
| NBO.275 | Ashley, Rev. Samuel S. House | 100 Main St | Northborough | c 1860 |  |

 Page **13** of 23

[Previous 15](#)
[Next 15](#)

340 Properties Found

[New Search](#)
[New Search — Same Town\(s\)](#)
[Previous](#)
[MHC Home](#) | [MACRIS Home](#)

Massachusetts Cultural Resource Information System

MACRIS

[MHC Home](#) | [MACRIS Home](#)

Results

[Get Results in Report Format](#)
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Town(s): Northborough

Resource Type(s): Building, Structure

For more information about this page and how to use it, [click here](#)

| Inv. No. | Property Name | Street | Town | Year | SR |
|-------------------------|--|----------------|--------------|--------|---|
| NBO.167 | Seaver, William House | 104 Main St | Northborough | c 1855 |  |
| NBO.276 | Hunt, Stephen House | 130 Main St | Northborough | c 1840 |  |
| NBO.277 | Hunt, Capt. Jeremiah House | 140 Main St | Northborough | 1817 |  |
| NBO.278 | Wesson, Daniel B. Estate Groundskeeper Cottage | 154 Main St | Northborough | c 1886 |  |
| NBO.168 | Wesson, Daniel B. House | 167 Main St | Northborough | c 1886 |  |
| NBO.169 | Chet's Diner | 191 Main St | Northborough | c 1931 |  |
| NBO.58 | | 413 Main St | Northborough | r 1775 |  |
| NBO.57 | Bartlett, Dea. Jonas House | 453 Main St | Northborough | c 1753 |  |
| NBO.279 | Wesson, Daniel B. Estate Superintendent House | 13 Maple St | Northborough | c 1886 |  |
| NBO.280 | Wesson, Daniel B. Estate Employee Housing | 25-27 Maple St | Northborough | c 1886 |  |
| NBO.170 | Carruth, S. House | 101 Maple St | Northborough | c 1800 |  |
| NBO.171 | Bourne, Rev. G. W. House | 129 Maple St | Northborough | c 1849 |  |
| NBO.38 | Fay, L. - Mentzer, Cyrus House | 1 Mentzer Ave | Northborough | c 1760 |  |
| NBO.172 | Pierce Barn | 2 Mill St | Northborough | c 1855 |  |
| NBO.281 | Johnson, Charles E. House | 5 Mill St | Northborough | c 1890 |  |

Page **14** of 23

[Previous 15](#)
[Next 15](#)

340 Properties Found

[New Search](#)
[New Search — Same Town\(s\)](#)
[Previous](#)
[MHC Home](#) | [MACRIS Home](#)

Massachusetts Cultural Resource Information System

MACRIS

[MHC Home](#) | [MACRIS Home](#)

Results

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Town(s): Northborough

Resource Type(s): Building, Structure

For more information about this page and how to use it, [click here](#)

| Inv. No. | Property Name | Street | Town | Year | SR |
|-------------------------|---------------------------------------|----------------|--------------|--------|---|
| NBO.173 | Stearns, J. House | 7 Mill St | Northborough | c 1855 |  |
| NBO.174 | Maynard, L. House | 12 Mill St | Northborough | c 1855 |  |
| NBO.175 | Newton, Richard W. House | 9 Monroe St | Northborough | c 1870 |  |
| NBO.282 | Bachelder, Alice A. House | 14 Monroe St | Northborough | c 1898 |  |
| NBO.176 | Maynard, T. House | 216 Newton St | Northborough | r 1750 |  |
| NBO.177 | Fay, Nahum House | 359 Newton St | Northborough | c 1720 |  |
| NBO.283 | Fisher, Hannah Alice House | 68 Oak Ave | Northborough | c 1880 |  |
| NBO.83 | Chapin, Marvin - Maynard, Caleb House | 4 Patty Ln | Northborough | r 1835 |  |
| NBO.26 | Saint Rose Rectory | 11 Pierce St | Northborough | | |
| NBO.23 | Saint Rose of Lima Church | 16 Pierce St | Northborough | 1883 | |
| NBO.284 | Gerrity, Winifred House | 23 Pierce St | Northborough | c 1890 |  |
| NBO.285 | Felt, George H. House | 25 Pierce St | Northborough | 1899 |  |
| NBO.178 | Fay, J. T. House | 22 Pleasant St | Northborough | c 1816 |  |
| NBO.286 | Allen, John L. House | 31 Pleasant St | Northborough | c 1875 |  |
| NBO.106 | Gale, Cyrus - Ellsworth, W. House | 44 Pleasant St | Northborough | c 1855 |  |

Page **15** of 23

[Previous 15](#)
[Next 15](#)

340 Properties Found

[New Search](#)
[New Search — Same Town\(s\)](#)
[Previous](#)
[MHC Home](#) | [MACRIS Home](#)

Massachusetts Cultural Resource Information Sys

MACRIS

[MHC Home](#) | [MACRIS Home](#)

Results

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Town(s): Northborough

Resource Type(s): Building, Structure

For more information about this page and how to use it, [click here](#)

| Inv. No. | Property Name | Street | Town | Year | SR |
|-------------------------|---|-----------------|--------------|--------|---|
| NBO.287 | Gorman, Walter - Norton, Matthew House | 50 Pleasant St | Northborough | c 1860 |  |
| NBO.288 | Wadsworth, Ralph House | 67 Pleasant St | Northborough | c 1900 | |
| NBO.289 | Burdett, Curtis Herbert House | 87 Pleasant St | Northborough | 1905 |  |
| NBO.290 | Sargent, Della M. House | 99 Pleasant St | Northborough | 1910 |  |
| NBO.179 | Hastings, H. House | 156 Pleasant St | Northborough | r 1735 |  |
| NBO.76 | Howe, Monroe - Bucklin, Emerson House | 6 Reservoir Rd | Northborough | c 1781 |  |
| NBO.31 | Rice, John Minot House | 9 Rice Ave | Northborough | c 1890 |  |
| NBO.39 | Parmenter, Joel - Newton, Dea. Paul House | 254 Rice Ave | Northborough | c 1800 |  |
| NBO.180 | Wood, Samuel II - Seaver, Samuel Fulling Mill | 6 River St | Northborough | c 1751 |  |
| NBO.291 | | 10 River St | Northborough | c 1900 |  |
| NBO.181 | Seaver, W. House | 13 River St | Northborough | c 1810 |  |
| NBO.292 | | 15 River St | Northborough | c 1900 |  |
| NBO.293 | | 19 River St | Northborough | c 1900 |  |
| NBO.294 | | 23 River St | Northborough | c 1900 |  |
| NBO.295 | Randlett, Nathaniel House | 24-26 River St | Northborough | c 1900 |  |

Page **16** of 23

[Previous 15](#)
[Next 15](#)

340 Properties Found

[New Search](#)
[New Search — Same Town\(s\)](#)
[Previous](#)
[MHC Home](#) | [MACRIS Home](#)

Massachusetts Cultural Resource Information System

MACRIS

[MHC Home](#) | [MACRIS Home](#)

Results















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Below are the results of your search, using the following search criteria:

Town(s): Northborough

Resource Type(s): Building, Structure

For more information about this page and how to use it, [click here](#)

| Inv. No. | Property Name | Street | Town | Year | SR |
|-------------------------|--|----------------|--------------|--------|---|
| NBO.182 | Sargent, S. E. House | 25 River St | Northborough | c 1898 |  |
| NBO.296 | Randlett, Nathaniel House | 28-30 River St | Northborough | c 1885 |  |
| NBO.297 | Randlett, Nathaniel House | 32 River St | Northborough | c 1885 |  |
| NBO.298 | Randlett, Nathaniel House | 34 River St | Northborough | c 1885 |  |
| NBO.299 | Tyler, Emily O. House | 36 River St | Northborough | c 1890 |  |
| NBO.300 | | 37 River St | Northborough | c 1910 |  |
| NBO.301 | Mosso, J. House | 38-40 River St | Northborough | c 1890 |  |
| NBO.302 | | 42 River St | Northborough | c 1885 |  |
| NBO.901 | Route 9 Bridge over Route 20 | Rt 9 | Northborough | 1930 |  |
| NBO.87 | Northborough Second Center District School | 10 School St | Northborough | 1837 |  |
| NBO.303 | Sargent, George F. House | 16 School St | Northborough | c 1880 |  |
| NBO.183 | Randlett, Nathaniel - Holden, L. C. House | 31 School St | Northborough | 1854 |  |
| NBO.331 | | 33 School St | Northborough | c 1900 | |
| NBO.304 | Gay, Frank V. House | 36 School St | Northborough | c 1895 |  |
| NBO.305 | Parmenter, Edwin Solon House | 39 School St | Northborough | 1886 |  |

Page **17** of 23

[Previous 15](#)
[Next 15](#)

340 Properties Found

[New Search](#)
[New Search — Same Town\(s\)](#)
[Previous](#)
[MHC Home](#) | [MACRIS Home](#)

Massachusetts Cultural Resource Information System

MACRIS

[MHC Home](#) | [MACRIS Home](#)

Results

[Get Results in Report Format](#)
☐ PDF ☒ Spreadsheet

Below are the results of your search, using the following search criteria:

Town(s): Northborough

Resource Type(s): Building, Structure

For more information about this page and how to use it, [click here](#)

| Inv. No. | Property Name | Street | Town | Year | SR |
|-------------------------|---|-----------------|--------------|--------|---|
| NBO.306 | Mentzer, Cyrus Hartwell House | 40 School St | Northborough | 1900 |  |
| NBO.307 | Coburn, Alvah - England, Harry J. House | 44 School St | Northborough | c 1898 |  |
| NBO.332 | | 47 School St | Northborough | c 1920 | |
| NBO.308 | Brigham, Charles Montford House | 48 School St | Northborough | c 1898 |  |
| NBO.309 | Blair, Edwin C. - Brennan, James D. House | 50 School St | Northborough | 1899 |  |
| NBO.184 | Gale, Cyrus Double House | 51-53 School St | Northborough | c 1855 |  |
| NBO.310 | Crouse, William J. House | 55 School St | Northborough | c 1885 |  |
| NBO.333 | | 56 School St | Northborough | c 1900 | |
| NBO.311 | Gale, Cyrus House | 71 School St | Northborough | c 1860 |  |
| NBO.185 | Howe, H. House | 130 School St | Northborough | c 1830 |  |
| NBO.186 | Sherman, S. House | 284 School St | Northborough | c 1830 |  |
| NBO.187 | Howe, Silas House | 3 Silas Dr | Northborough | c 1844 |  |
| NBO.920 | Assabet Park | South St | Northborough | c 1916 |  |
| NBO.312 | Bigelow, Walter J. Hardware Store | 17 South St | Northborough | 1907 |  |
| NBO.188 | Jerauld, S. House | 19 South St | Northborough | c 1855 |  |

Page **18** of 23

[Previous 15](#)
[Next 15](#)

340 Properties Found

[New Search](#)
[New Search — Same Town\(s\)](#)
[Previous](#)
[MHC Home](#) | [MACRIS Home](#)

Massachusetts Cultural Resource Information Sys

MACRIS

[MHC Home](#) | [MACRIS Home](#)

Results

[Get Results in Report Format](#)
☐ PDF


☒ Spreadsheet

Below are the results of your search, using the following search criteria:

Town(s): Northborough

Resource Type(s): Building, Structure

For more information about this page and how to use it, [click here](#)

| Inv. No. | Property Name | Street | Town | Year | SR |
|-------------------------|--|---------------|--------------|--------|---|
| NBO.189 | Rice, M. L. House | 24 South St | Northborough | c 1855 |  |
| NBO.190 | Johnson, Dr. Joshua J. House | 28 South St | Northborough | c 1855 |  |
| NBO.314 | Brigham, Nathaniel House | 49 South St | Northborough | c 1853 |  |
| NBO.191 | Streeter, V. House | 79 South St | Northborough | c 1855 |  |
| NBO.315 | Barnes, George House | 120 South St | Northborough | c 1890 |  |
| NBO.316 | Phelps, Allyn D. House | 129 South St | Northborough | c 1900 |  |
| NBO.192 | Mason, Thaddeus - Barnes, George House | 130 South St | Northborough | c 1830 |  |
| NBO.317 | Burgoyne, George H. House | 157 South St | Northborough | c 1890 |  |
| NBO.193 | Carruth, Horatio T. House | 191 South St | Northborough | c 1839 |  |
| NBO.194 | Maynard, W. House | 206 South St | Northborough | 1755 |  |
| NBO.195 | Wise House | 270 South St | Northborough | c 1800 |  |
| NBO.196 | Davis, George C. House | 284 South St | Northborough | c 1855 |  |
| NBO.197 | Crosby, Isaac House | 312 South St | Northborough | c 1830 |  |
| NBO.318 | Cook, Maria Elizabeth House | 5 Summer St | Northborough | c 1890 |  |
| NBO.319 | Cook, Maria Elizabeth House | 7-9 Summer St | Northborough | c 1890 |  |

Page **19** of 23

[Previous 15](#)
[Next 15](#)

340 Properties Found

[New Search](#)
[New Search — Same Town\(s\)](#)
[Previous](#)
[MHC Home](#) | [MACRIS Home](#)

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| Inv. No. | Property Name | Street | Town | Year | SR |
|-------------------------|-----------------------------|-----------------|--------------|--------|---|
| NBO.334 | | 10 Summer St | Northborough | c 1900 | |
| NBO.335 | | 14 Summer St | Northborough | c 1900 | |
| NBO.198 | Newton, Richard W. House | 15 Summer St | Northborough | c 1855 |  |
| NBO.199 | Gale, Cyrus House | 20 Summer St | Northborough | c 1860 |  |
| NBO.320 | Hastings, Elijah S. House | 23 Summer St | Northborough | c 1865 |  |
| NBO.107 | Crawford, J. B. House | 25 Summer St | Northborough | c 1830 |  |
| NBO.321 | McCool, Samuel L. House | 26 Summer St | Northborough | 1898 |  |
| NBO.200 | Brewer, J. H. House | 29 Summer St | Northborough | c 1855 |  |
| NBO.336 | | 37 Summer St | Northborough | c 1925 | |
| NBO.322 | Potter, William J. House | 45 Summer St | Northborough | 1884 |  |
| NBO.323 | Potter, Cyrus House | 53 Summer St | Northborough | c 1860 |  |
| NBO.337 | | 63 Summer St | Northborough | c 1880 | |
| NBO.324 | Richardson, Samuel S. House | 67 Summer St | Northborough | c 1890 |  |
| NBO.105 | Bemis, Elijah House | 33 Talbot Rd | Northborough | c 1830 |  |
| NBO.201 | Lincoln, Jairus House | 2 Tricorner Cir | Northborough | c 1870 |  |

Page of 23

[Previous 15](#)
[Next 15](#)

340 Properties Found

[New Search](#)
[New Search — Same Town\(s\)](#)
[Previous](#)
[MHC Home](#) | [MACRIS Home](#)

Massachusetts Cultural Resource Information Sys

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| Inv. No. | Property Name | Street | Town | Year | SR |
|-------------------------|--------------------------------|--------------------|--------------|--------|---|
| NBO.904 | Wachusett Aqueduct | Wachusett Aqueduct | Northborough | 1896 | SR |
| NBO.202 | Babcock, William House | 119 Washburn St | Northborough | c 1752 |  |
| NBO.203 | | 4 West Main St | Northborough | 1985 |  |
| NBO.204 | Old Lowe's Market | 25 West Main St | Northborough | 1870 |  |
| NBO.205 | Guptil, Dr. Ira C. House | 39 West Main St | Northborough | c 1898 |  |
| NBO.206 | Walker's Market | 40 West Main St | Northborough | c 1920 |  |
| NBO.207 | | 44 West Main St | Northborough | c 1916 |  |
| NBO.60 | Bush, Warren T. - Marcou House | 51 West Main St | Northborough | r 1865 |  |
| NBO.208 | Fiske, Horace S. House | 65 West Main St | Northborough | c 1855 |  |
| NBO.209 | | 78 West Main St | Northborough | c 1900 |  |
| NBO.325 | Warren, Henry G. House | 214 West Main St | Northborough | c 1905 |  |
| NBO.210 | Maynard House | 222 West Main St | Northborough | c 1760 |  |
| NBO.211 | Brigham, J. House | 422 West Main St | Northborough | c 1760 |  |
| NBO.212 | Eager, Col. W. House | 455 West Main St | Northborough | c 1830 |  |
| NBO.326 | Maynard, William U. Barn | 536 West Main St | Northborough | c 1870 |  |

Page of 23

[Previous 15](#)
[Next 15](#)

340 Properties Found

[New Search](#)
[New Search — Same Town\(s\)](#)
[Previous](#)
[MHC Home](#) | [MACRIS Home](#)

Massachusetts Cultural Resource Information System

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[MHC Home](#) | [MACRIS Home](#)

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Town(s): Northborough

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| Inv. No. | Property Name | Street | Town | Year | SR | |
|-------------------------|------------------------------------|------------------|--------------|--------|----|---|
| NBO.902 | Whitney Street Bridge over Conrail | Whitney St | Northborough | c 1905 | |  |
| NBO.65 | Gibson, Samuel House | 2 Whitney St | Northborough | c 1840 | |  |
| NBO.66 | Carron House | 12 Whitney St | Northborough | c 1887 | |  |
| NBO.78 | Bush, W. House | 23 Whitney St | Northborough | c 1840 | SR |  |
| NBO.79 | Bush, Wilder Barn | 25 Whitney St | Northborough | c 1850 | SR |  |
| NBO.80 | Bush, Wilder House | 27-29 Whitney St | Northborough | c 1850 | SR |  |
| NBO.81 | Bush, Wilder M. House | 35 Whitney St | Northborough | c 1750 | SR |  |
| NBO.213 | Bush, Warren T. House | 61-63 Whitney St | Northborough | c 1855 | |  |
| NBO.30 | Whitney, Peter Parsonage | 62 Whitney St | Northborough | c 1780 | SR |  |
| NBO.214 | Maynard, J. House | 89 Whitney St | Northborough | c 1855 | |  |
| NBO.215 | Fairbanks, Joseph House | 96 Whitney St | Northborough | c 1831 | |  |
| NBO.216 | Gallop, J. B. House | 102 Whitney St | Northborough | c 1855 | |  |
| NBO.217 | Sever, J. M. House | 109 Whitney St | Northborough | c 1816 | |  |
| NBO.218 | Sever, J. F. House | 113 Whitney St | Northborough | c 1770 | |  |
| NBO.219 | Carruth, Horatio T. House | 154 Whitney St | Northborough | c 1837 | |  |

Page 22 of 23

[Previous 15](#)
[Next 15](#)

340 Properties Found

[New Search](#)
[New Search — Same Town\(s\)](#)
[Previous](#)
[MHC Home](#) | [MACRIS Home](#)

Massachusetts Cultural Resource Information Sys

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| Inv. No. | Property Name | Street | Town | Year | SR |
|-------------------------|---|----------------|--------------|--------|---|
| NBO.220 | North District #2 Schoolhouse | 192 Whitney St | Northborough | 1792 |  |
| NBO.327 | Corey, Edwin S. House | 220 Whitney St | Northborough | 1884 |  |
| NBO.328 | Corey, Theodore F. House | 234 Whitney St | Northborough | c 1875 |  |
| NBO.34 | North District #3 Schoolhouse | 310 Whitney St | Northborough | c 1841 |  |
| NBO.329 | Goddard, Solomon House - Maplewood Farm | 347 Whitney St | Northborough | c 1750 |  |
| NBO.56 | Goddard, William House | 450 Whitney St | Northborough | 1726 | |
| NBO.330 | Cook, Elizabeth Maria House | 10 Winn St | Northborough | c 1890 |  |
| NBO.221 | Potter, J. House | 41 Winter St | Northborough | c 1816 |  |
| NBO.222 | Mahan House | 46 Winter St | Northborough | c 1855 |  |
| NBO.223 | Cutter, Silas A. House | 55 Winter St | Northborough | c 1760 |  |

 Page of 23

[Previous 15](#)

340 Properties Found

[New Search](#)
[New Search — Same Town\(s\)](#)
[Previous](#)
[MHC Home](#) | [MACRIS Home](#)