Groundwater & Environmental Services, Inc.
1 Park Drive, Suite 8
Westford, MA 01886
T. 800.221.6119

July 31, 2020

Via Electronic Mail: NPDES.Generalpermits@epa.gov; Little.Shauna@epa.gov

Ms. Shauna Little
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
Former Ginn Oil
57 Winn Street
Woburn, Massachusetts 01801
MADEP RTN 3-19134

Dear Ms. Little:

Groundwater & Environmental Services, Inc. (GES), on behalf of the Former Ginn Oil Company (Former Ginn Oil), has prepared this EPA Remediation General Permit (RGP) Notice of Intent (NOI) submittal for the above-referenced location (the Site). The RGP NOI submittal is provided as **Attachment A**. The Site is currently a vacant parcel in a commercial/residential area. It is bordered to the south/southwest by Winn Street, to the east/southeast by Bill's Auto Service, and to the northeast by a residential property.

Soil and groundwater beneath the Site have been impacted by a historic release of petroleum. The Site property has historically been occupied by an automotive repair facility and/or petroleum service station since the 1930s. Environmental investigations performed in accordance with the Massachusetts Contingency Plan (MCP) regulations were first initiated for the former Ginn Oil property in 1999, following the detection of petroleum constituents in soil exceeding the applicable Reportable Concentrations (RCs). Notification of a 120-day reporting condition was provided to the Massachusetts Department of Environmental Protection (MassDEP) on December 31, 1999, and MassDEP Release Tracking Number (RTN) 3-19134 was assigned. Subsequently, MassDEP RTN 3-19909 was assigned by MassDEP on September 7, 2000 following the detection of a non-aqueous phase liquid (NAPL) exceeding one-half inch in thickness at a monitoring well located on the Site. MassDEP RTN 3-19909 was linked to the main MassDEP RTN 3-19134 in June 2001 after approximately 500 cubic yards of soil was removed from the Site under an Immediate Response Action (IRA) associated with RTN 3-19909. Additionally, MassDEP RTN 3-20811 was assigned to the site by MassDEP on April 6, 2001 following the exceedances of applicable RCs for petroleum-related constituents in soil at the Site. RTN 3-20811 was also linked to the main MassDEP RTN 3-19134 in June 2001.

In addition to the former Ginn Oil property, the Disposal Site includes portions of the following properties where petroleum-related compounds are present, or are likely to be present:

- A portion of the commercial property at 41 Winn Street occupied by Bill's Auto Service which abuts the 57 Winn Street property to the southeast;
- A portion of Winn Street to the south (City of Woburn);
- A portion of the commercial property at 40 Winn Street occupied by Lannan Chevrolet which is immediately across Winn Street from the Site to the south; and,
- The edge of the residential property located at 50 Park Street, which abuts the former Ginn Oil property to the northeast.

The Disposal Site is currently classified as Tier 1, and a Class C-1 Response Action Outcome (RAO) (now known as a Temporary Solution [infeasible to achieve a Permanent Solution]) was filed for the Site on September 9, 2008. A 5-Year Period Review Opinion was filed in April 2020, and Post-Temporary Solution Status Reports have been filed on a periodic basis to document Response Actions conducted at the Disposal Site.

A targeted remedial excavation is proposed to address residual soil and groundwater impacts underlying the former station building. It is anticipated that proposed excavation and temporary dewatering and groundwater treatment activities will be initiated at the Site in November 2020 upon receipt of Authorization of the RGP. Proposed remediation activities are being performed at the Site under a Release Abatement Measure (RAM) Plan, in accordance with the Massachusetts Contingency Plan (MCP) 310 CMR 40.0000.

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 3 feet to 6 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 Location Map is provided as **Figure 1** and a Site Layout is provided as **Figure 2**. The attached Site Location Map (**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 fractionation (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 (LGAC) 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 adjacent to the site along Winn Street.

Information provided by the City of Woburn Engineering Department indicates that the storm drain catch basin located along Winn Street is connected to the underground stormwater drainage system beneath Winn Street and discharges to the Horn Pond freshwater surface water, located approximately 0.6 miles south-southwest of the Site.

A process flow diagram of the proposed groundwater treatment system is provided as **Figure 4**. The proposed treated water discharge location to catch basins adjacent to the Site is shown on **Figure 2**.

The average flow rate of the treated water discharge from the system to the storm drain system is anticipated to be between 50 and 100 gallons per minute (gpm). The pumping capacity of the groundwater treatment system is 100 gpm based upon the capacity of the submersible pumps. The groundwater treatment system shall be inspected, monitored, and sampled by or under the direction of 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 AND SURFACE WATER PRE-CHARACTERIZATION ANALYSIS

Groundwater samples were collected on March 16, 2020 from on-Site monitoring wells MW-302 and MW-305 for RGP parameters. The March 2020 samples were submitted to SGS North America, Inc. (SGS) of Dayton, New Jersey under chain-of-custody protocol and analyzed for select RGP parameters including ammonia, chloride, total suspended solids (TSS), total residual chlorine (TRC), hardness, total metals, cyanide, volatile organic compounds (VOCs), semi-VOCs (SVOCs)/ polycyclic aromatic hydrocarbons (PAHs), polychlorinated biphenyls (PCBs), and total petroleum hydrocarbons (TPH) via the corresponding EPA methodologies. Refer to the laboratory analytical report included in **Attachment B** for details of the RGP parameters, EPA methodologies and groundwater analytical results. The temperature of groundwater sample MW-302 was field measured at 8.01 degrees Celsius, and the pH of groundwater sample MW-302 was field measured at 6.94 standard units (SU). The temperature of groundwater sample MW-305 was field measured at 9.28 degrees Celsius, and the pH of groundwater sample MW-305 was field measured at 6.76 SU.

In addition, a surface water sample identified as OUTFALL was collected from the receiving water in Horn Pond at the storm drain outfall on June 16, 2020. The surface water sample OUTFALL was submitted to SGS under chain-of-custody for select RGP parameters including total metals, ammonia, and hardness. The temperature of the surface water was field measured at 23.66 degrees Celsius, and pH was field measured at 8.05 SU.

The groundwater analytical results for untreated/ unfiltered groundwater samples collected from monitoring wells MW-302 and MW-305 on March 16, 2020 for RGP parameters are summarized in the enclosed RGP NOI data summary section (**Attachment A**). The March 2020 laboratory analytical results 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://www.epa.gov/npdes-permits/remediation-general-permit-rgp-massachusetts-new-hampshire). The surface water sample OUTFALL analytical results are presented in the laboratory analytical report (**Attachment B**).

Referring to the NOI data summary included in **Attachment A**, the analytical results for MW-302 and/or MW-305 detected TSS, total iron, zinc, cadmium, lead, and benzene 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 groundwater monitoring wells MW-302 and MW-305 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 iron, cadmium, lead, and zinc below available RGP effluent limitations in treated groundwater prior to discharge. Based on available information, TSS, benzene, and total metals (iron and zinc) should be subject to monitoring requirements.

RECEIVING WATERS INFORMATION

The actual local stormwater pipe outfall is a small freshwater pond located on the library field, southwest of the Site across Winn Street and Abbott Streets. However, this small unnamed pond is located in the Horn Pond basin. Therefore, the overall receiving water for the treated groundwater discharge is the Horn Pond freshwater surface water, located approximately 0.6 miles south-southwest of the Site. GES consulted the United States Geological Survey (USGS) StreamStats program (https://streamstats.usgs.gov/ss/) and USGS to determine the 7Q10 flow rate at the discharge location. USGS provided the enclosed StreamStats Report for the proposed Horn Pond basin discharge (located at 42.47053N, -71.15713W) located to the south-southeast of the Site in Woburn, MA. Data obtained from the StreamStats Flow Statistics Report indicates that the calculated 7Q10 flow rate for this area basin is 0.315 cubic feet per second (cfs). A copy of the USGS StreamStats Report is provided in **Attachment C**. The approximate location of the discharge outfall into Horn Pond is shown on **Figure 5**.

RECEIVING WATER CLASSIFICATION

According to 314 CMR 4.06, the Horn Pond surface water and associated basin area (part of the Boston Harbor drainage area) where the proposed drainage system outfall is located is designated as Class B warm water surface water. The Horn Pond basin is an Outstanding Resource Water according information provided by the MassDEP.

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 (https://docs.digital.mass.gov/dataset/massgis-data-nhesp-priority-habitats-rare-species), 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 map does not depict any Areas of Critical Environmental Concern on the Site or within one-half mile of the Site. Copies of the MADEP Phase 1 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, GES 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 (https://ecos.fws.gov/ipac/). The FWS provided the requested list which indicates that one (1) threatened species was identified – the Northern Long-eared Bat *Myotis septentrionalis*. GES completed the IPaC key to determine whether a non-Federal action may cause "take" of the northern long-eared bat that is prohibited under the Endangered Species Act of 1973. The result of the IPaC submission indicates that the proposed action is *not likely to results in unauthorized take of the northern long-eared bat**.*** Therefore, the proposed project discharge meets FWS Criterion B. A copy of the FWS Species List letter and Consistency letter dated March 5, 2020 are included in **Attachment E**.

REVIEW OF NATIONAL REGISTER OF HISTORIC PLACES

A listing of all Historic Places within the town of Woburn was obtained from the Massachusetts Cultural Resources Information System (MACRIS) online database (http://mhc-macris.net/) on March 5, 2020. 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 Woburn. Referring to **Attachment F**, the 56 Winn Street property located adjacent to the Site is a historic property. However, 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.

Should you have any questions regarding this application, please contact Ed Kontos at 800-221-6119, extension 3245.

Sincerely,

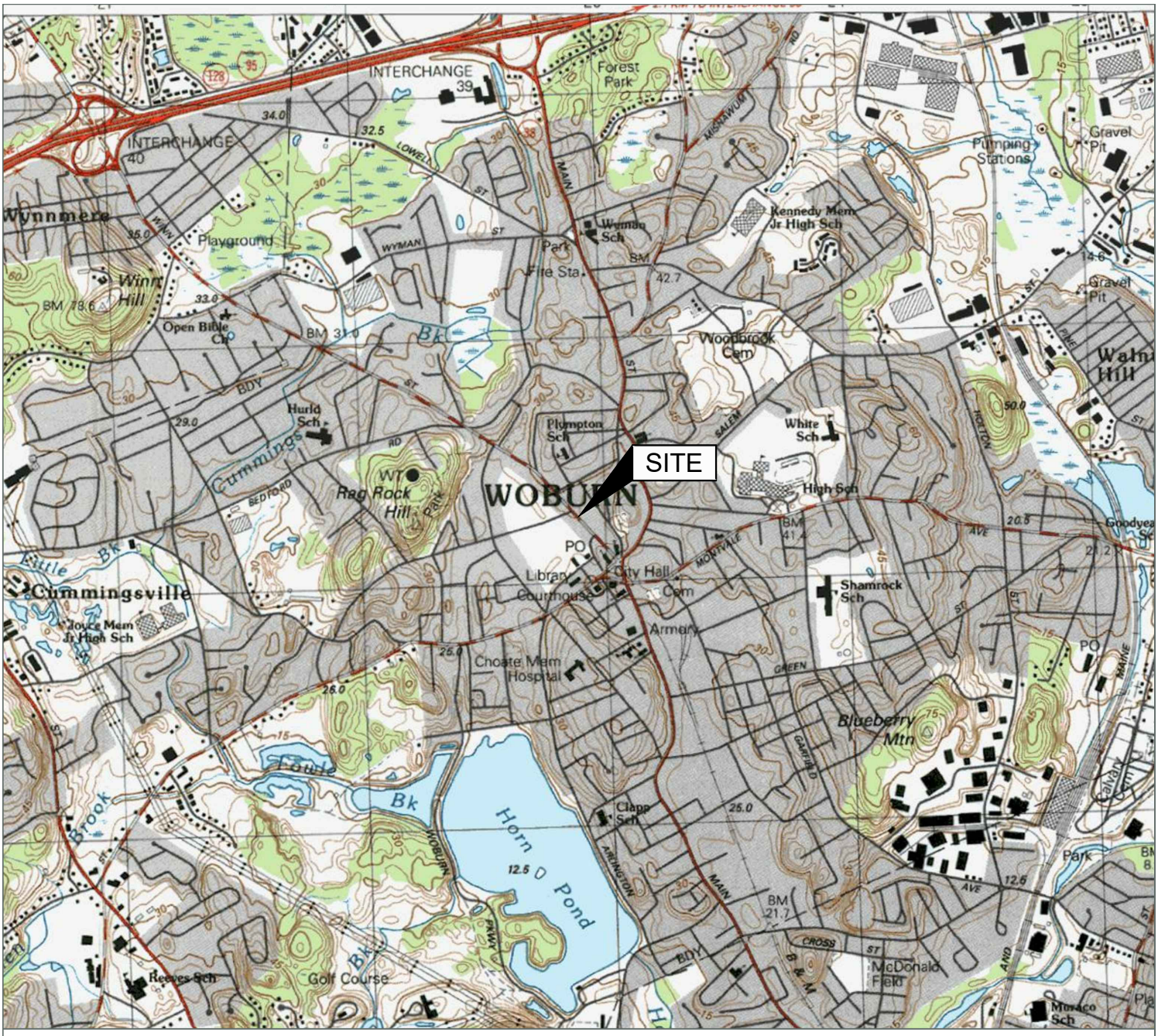
Groundwater & Environmental Services, Inc.

Digitally signed
by Edward Kontos
Date: 2020.07.31
15:34:01 -04'00'

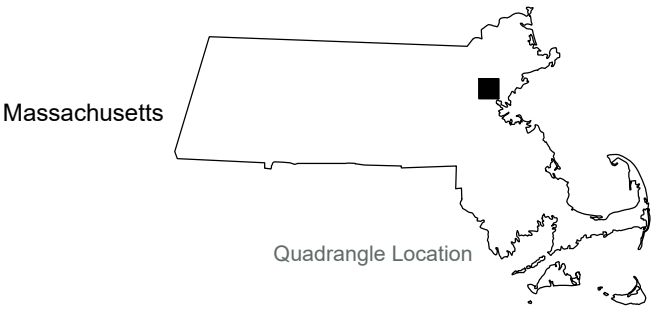
Edward G. Kontos III, LSP
Principal Environmental Scientist

Meghan D. Proia, P.E.
Senior Engineer

Figures



Source:
USGS 7.5 Minute Series
Topographic Quadrangle, 1985
Boston North, Massachusetts
Contour Interval = 3 Meters



Site Location Map

Ginn Oil Company
Former Ginn Oil Facility
57 Winn Street
Woburn, Massachusetts

Drawn
W.G.S.
Designed

Approved

Date
12/19/19
Figure
1

N

Scale In Feet
0 2000

Groundwater & Environmental Services, Inc.

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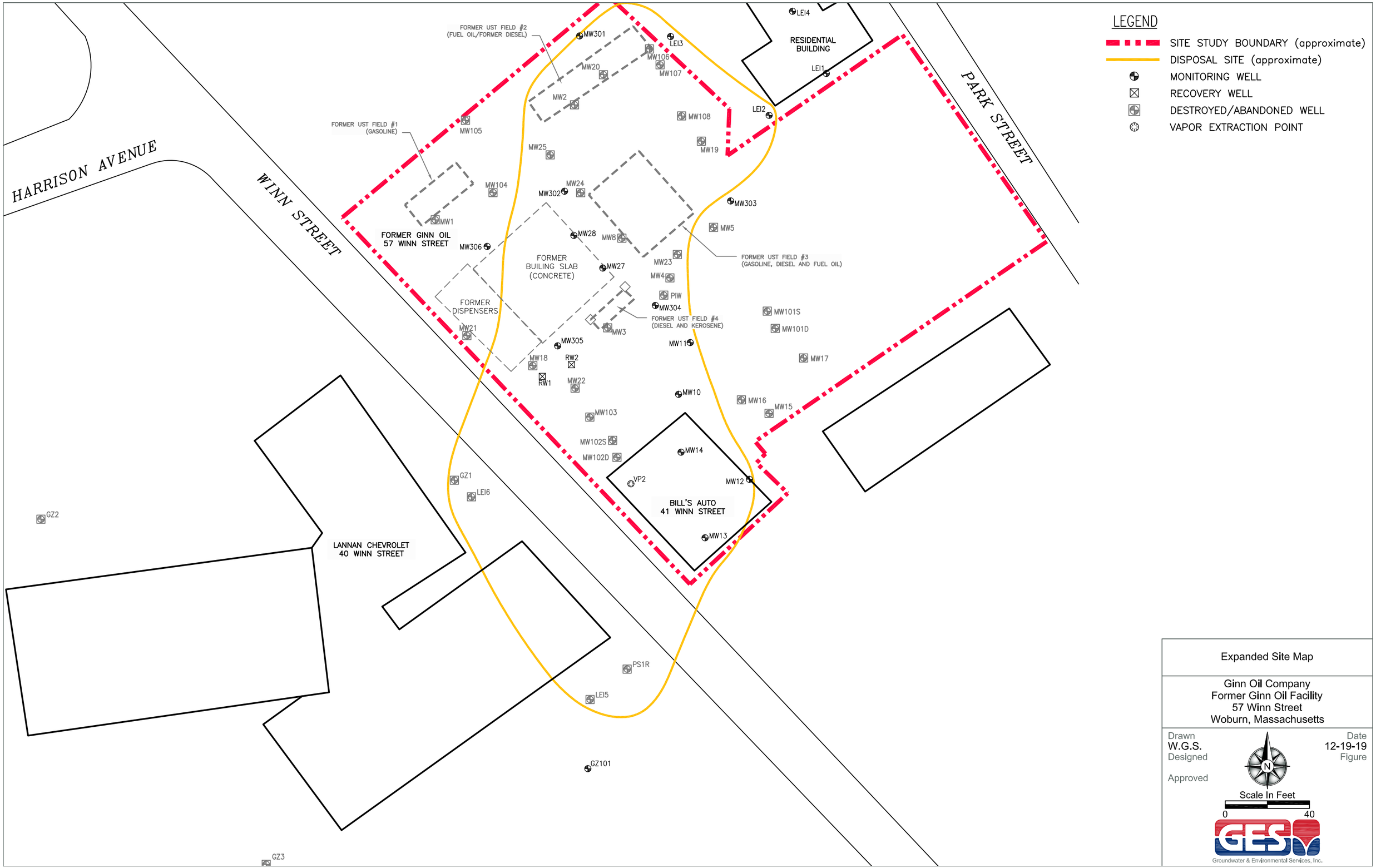

LEGEND

- SITE STUDY BOUNDARY (approximate)
- DISPOSAL SITE (approximate)
- MONITORING WELL
- RECOVERY WELL
- DESTROYED/ABANDONED WELL
- VAPOR EXTRACTION POINT

Expanded Site Map

Ginn Oil Company
Former Ginn Oil Facility
57 Winn Street
Woburn, Massachusetts

Drawn: W.G.S.
Designed:
Approved:
Date: 12-19-19
Figure:

Scale In Feet
0 40

Groundwater & Environmental Services, Inc.

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MassDEP - Bureau of Waste Site Cleanup

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

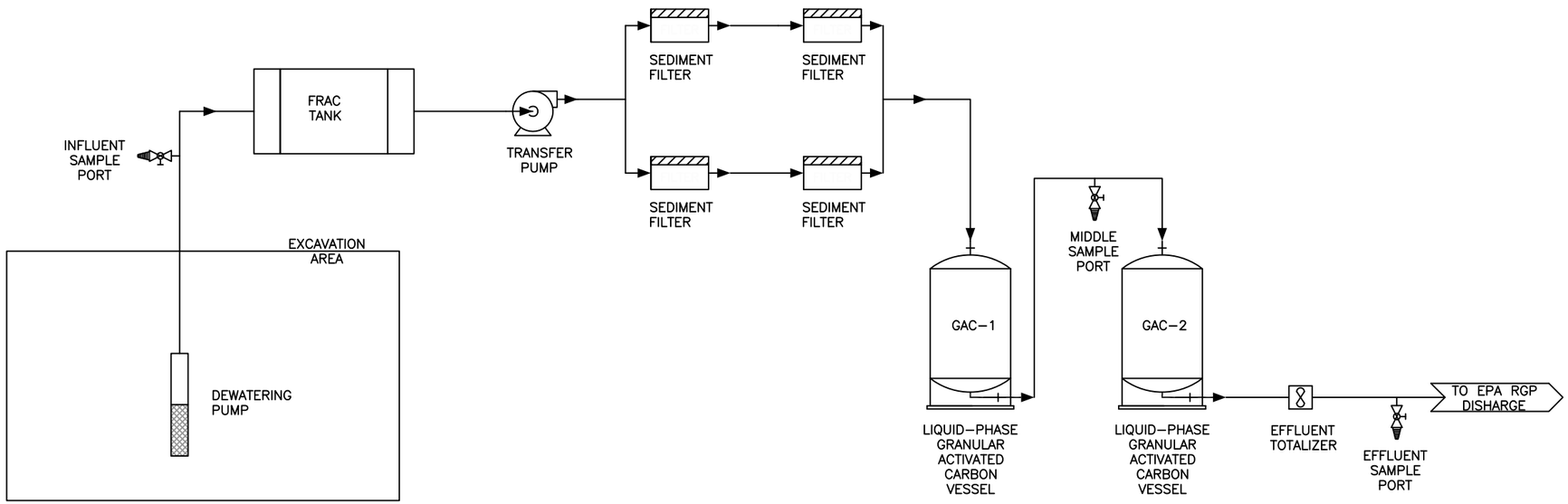
Site Information:

57 WINN STREET WOBURN, MA
3-000019134
NAD83 UTM Meters:
4705490mN , 322969mE (Zone: 19)
March 5, 2020

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: https://www.mass.gov/orgs/massgis-bureau-of-geographic-information.

MassDEP
Commonwealth of Massachusetts
Department of Environmental Protection

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



Process Flow Diagram

Former Ginn Oil
57 Winn Street
Woburn, MA

Drawn W.G.S.
Date 10/29/19
Designed
Figure 5
Approved

Not to Scale

Groundwater & Environmental Services, Inc.


STURGIS ST
Outfall Location
HORN POND
© 2020 Google
Google Earth

Tables

Enter number values in green boxes below

Enter values in the units specified

↓

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

Enter a dilution factor, if other than zero

↓

0	

Enter values in the units specified

↓

250	C_d = Enter influent hardness in **mg/L** $CaCO_3$
56	C_s = Enter receiving water hardness in **mg/L** $CaCO_3$

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

↓

8.05	pH in **Standard Units**
23.66	Temperature in **°C**
0	Ammonia in **mg/L**
56	Hardness in **mg/L** $CaCO_3$
0	Salinity in **ppt**
0	Antimony in **µg/L**
0	Arsenic in **µg/L**
0	Cadmium in **µg/L**
0	Chromium III in **µg/L**
0	Chromium VI in **µg/L**
0	Copper in **µg/L**
202	Iron in **µg/L**
0	Lead in **µg/L**
0	Mercury in **µg/L**
0	Nickel in **µg/L**
0	Selenium in **µg/L**
0	Silver in **µg/L**
0	Zinc in **µg/L**

Enter **influent** concentrations in the units specified

↓

50	TRC in **µg/L**
1.6	Ammonia in **mg/L**
0	Antimony in **µg/L**
21.2	Arsenic in **µg/L**
5.3	Cadmium in **µg/L**
0	Chromium III in **µg/L**
0	Chromium VI in **µg/L**
20.6	Copper in **µg/L**
32100	Iron in **µg/L**
17.6	Lead in **µg/L**
0	Mercury in **µg/L**
7.2	Nickel in **µg/L**
1	Selenium in **µg/L**
0	Silver in **µg/L**
492	Zinc in **µg/L**
0	Cyanide in **µg/L**
0	Phenol in **µg/L**
0	Carbon Tetrachloride in **µg/L**
0	Tetrachloroethylene in **µg/L**
0	Total Phthalates in **µg/L**
0	Diethylhexylphthalate in **µg/L**
0	Benzo(a)anthracene in **µg/L**
0	Benzo(a)pyrene in **µg/L**
0	Benzo(b)fluoranthene in **µg/L**
0	Benzo(k)fluoranthene in **µg/L**
0	Chrysene in **µg/L**
0	Dibenzo(a,h)anthracene in **µg/L**
0	Indeno(1,2,3-cd)pyrene in **µg/L**
2.9	Methyl-tert butyl ether in **µg/L**

Notes:

Freshwater: Q_R equal to the 7Q10; enter alternate Q_R if approved by the State; enter 0 if no dilution factor approved
Saltwater (estuarine and marine): enter Q_R if approved by the State; enter 0 if no entry
Discharge flow is equal to the design flow or 1 MGD, whichever is less
Only if approved by State as the entry for Q_R; leave 0 if no entry

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

Freshwater only

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

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

I. Dilution Factor Calculation Method

A. 7Q10

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

B. Dilution Factor

Calculated as follows:

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

Q_R = 7Q10 in MGD

Q_P = Discharge flow, in MGD

II. Effluent Limitation Calculation Method

A. Calculate Water Quality Criterion:

Step 1. Downstream hardness, calculated as follows:

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

C_r = Downstream hardness in mg/L

Q_d = Discharge flow in MGD

C_d = Discharge hardness in mg/L

Q_s = Upstream flow (7Q10) in MGD

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

Q_r = Downstream receiving water flow in MGD

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

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

m_c = Pollutant-specific coefficient (m_a for silver)

b_c = Pollutant-specific coefficient (b_a for silver)

ln = Natural logarithm

h = Hardness calculated in Step 1

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

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

B. Calculate WQBEL:

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

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

C_r = Water quality criterion in µg/L
Q_d = Discharge flow in MGD
C_d = WQBEL in µg/L
Q_s = Upstream flow (7Q10) in MGD
C_s = Ustream (receiving water) concentration in µg/L
Q_r = Downstream receiving water flow in MGD

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

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

C_r = Water quality criterion in µg/L
Q_d = Discharge flow in MGD
Q_r = Downstream receiving water flow in MGD

C. Determine if a WQBEL applies:

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

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

C_r = Downstream concentration in µg/L
Q_d = Discharge flow in MGD
C_d = Influent concentration in µg/L
Q_s = Upstream flow (7Q10) in MGD
C_s = Upstream (receiving water) concentration in µg/L
Q_r = Downstream receiving water flow in MGD

The WQBEL applies if:

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

AND

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

of the RGP for that parameter applies.

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

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

AND

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

Part 2.1.1 of the RGP for that parameter applies.

Dilution Factor	2.4					
A. Inorganics	TBEL applies if bolded		WQBEL applies if bolded		Compliance Level applies if shown	
Ammonia	**Report**	mg/L	---			
Chloride	**Report**	µg/L	---			
Total Residual Chlorine	0.2	mg/L	**27**	µg/L	50	µg/L
Total Suspended Solids	**30**	mg/L	---			
Antimony	**206**	µg/L	1542	µg/L		
Arsenic	**104**	µg/L	24	µg/L		
Cadmium	10.2	µg/L	**0.8212**	µg/L		
Chromium III	**323**	µg/L	268.0	µg/L		
Chromium VI	**323**	µg/L	27.6	µg/L		
Copper	**242**	µg/L	29.3	µg/L		
Iron	5000	µg/L	**2125**	µg/L		
Lead	160	µg/L	**11.39**	µg/L		
Mercury	**0.739**	µg/L	2.18	µg/L		
Nickel	**1450**	µg/L	163.6	µg/L		
Selenium	**235.8**	µg/L	12.0	µg/L		
Silver	**35.1**	µg/L	15.6	µg/L		
Zinc	420	µg/L	**375.8**	µg/L		
Cyanide	**178**	mg/L	12.5	µg/L	---	µg/L
B. Non-Halogenated VOCs						
Total BTEX	**100**	µg/L	---			
Benzene	**5.0**	µg/L	---			
1,4 Dioxane	**200**	µg/L	---			
Acetone	**7970**	µg/L	---			
Phenol	**1,080**	µg/L	723	µg/L		
C. Halogenated VOCs						
Carbon Tetrachloride	**4.4**	µg/L	3.9	µg/L		
1,2 Dichlorobenzene	**600**	µg/L	---			
1,3 Dichlorobenzene	**320**	µg/L	---			
1,4 Dichlorobenzene	**5.0**	µg/L	---			
Total dichlorobenzene	**---**	µg/L	---			
1,1 Dichloroethane	**70**	µg/L	---			
1,2 Dichloroethane	**5.0**	µg/L	---			
1,1 Dichloroethylene	**3.2**	µg/L	---			
Ethylene Dibromide	**0.05**	µg/L	---			
Methylene Chloride	**4.6**	µg/L	---			
1,1,1 Trichloroethane	**200**	µg/L	---			
1,1,2 Trichloroethane	**5.0**	µg/L	---			
Trichloroethylene	**5.0**	µg/L	---			
Tetrachloroethylene	**5.0**	µg/L	8.0	µg/L		
cis-1,2 Dichloroethylene	**70**	µg/L	---			
Vinyl Chloride	**2.0**	µg/L	---			

D. Non-Halogenated SVOCs						
Total Phthalates	**190**	µg/L	---	µg/L		
Diethylhexyl phthalate	**101**	µg/L	5.3	µg/L		
Total Group I Polycyclic Aromatic Hydrocarbons	**1.0**	µg/L	---			
Benzo(a)anthracene	**1.0**	µg/L	0.0092	µg/L	---	µg/L
Benzo(a)pyrene	**1.0**	µg/L	0.0092	µg/L	---	µg/L
Benzo(b)fluoranthene	**1.0**	µg/L	0.0092	µg/L	---	µg/L
Benzo(k)fluoranthene	**1.0**	µg/L	0.0092	µg/L	---	µg/L
Chrysene	**1.0**	µg/L	0.0092	µg/L	---	µg/L
Dibenzo(a,h)anthracene	**1.0**	µg/L	0.0092	µg/L	---	µg/L
Indeno(1,2,3-cd)pyrene	**1.0**	µg/L	0.0092	µg/L	---	µg/L
Total Group II Polycyclic Aromatic Hydrocarbons	**100**	µg/L	---			
Naphthalene	**20**	µg/L	---			
E. Halogenated SVOCs						
Total Polychlorinated Biphenyls	**0.000064**	µg/L	---		0.5	µg/L
Pentachlorophenol	**1.0**	µg/L	---			
F. Fuels Parameters						
Total Petroleum Hydrocarbons	**5.0**	mg/L	---			
Ethanol	**Report**	mg/L	---			
Methyl-tert-Butyl Ether	**70**	µg/L	48	µg/L		
tert-Butyl Alcohol	**120**	µg/L	---			
tert-Amyl Methyl Ether	**90**	µg/L	---			

Attachment A – RGP NOI Form

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

A. General site information:

<table>
<tr><td rowspan="4">1. Name of site:
Former Ginn Oil</td><td colspan="3">Site address: 57 Winn St
Street:</td></tr>
<tr><td colspan="2">City: Woburn</td><td>State: MA</td><td>Zip: 01801</td></tr>
<tr><td colspan="3">Contact Person: William Gelormini</td></tr>
<tr><td colspan="2">Telephone: 781-933-9761</td><td>Email: d_gelormini@yahoo.com</td></tr>
<tr><td rowspan="4">2. Site owner
Winn Street LLC

Owner is (check one): ☐ Federal ☐ State/Tribal ■ Private
☐ Other; if so, specify:</td><td colspan="3">Mailing address: 47 Winn Street
Street:</td></tr>
<tr><td colspan="2">City: Woburn</td><td>State: MA</td><td>Zip: 01801</td></tr>
<tr><td colspan="3">Contact Person: Meghan Proia, PE</td></tr>
<tr><td colspan="2">Telephone: 800-220-6119 x3589</td><td>Email: mproia@gesonline.com</td></tr>
<tr><td rowspan="3">3. Site operator, if different than owner
Groundwater & Environmental Services, Inc.</td><td colspan="3">Mailing address:
Street: 1 Park Dr, Suite 8</td></tr>
<tr><td colspan="2">City: Westford</td><td>State: MA</td><td>Zip: 01886</td></tr>
<tr><td colspan="3">4. NPDES permit number assigned by EPA:
(previous 2006 authorization #MAG910265)

NPDES permit is (check all that apply: ■ RGP ☐ DGP ☐ CGP
☐ MSGP ☐ Individual NPDES permit ☐ Other; if so, specify:</td><td colspan="3">5. Other regulatory program(s) that apply to the site (check all that apply):
■ MA Chapter 21e; list RTN(s):
MassDEP RTN 3-19134
☐ NH Groundwater Management Permit or Groundwater Release Detection Permit:
☐ CERCLA
☐ UIC Program
☐ POTW Pretreatment
☐ CWA Section 404</td></tr>
</table>

B. Receiving water information:

1. Name of receiving water(s):	Waterbody identification of receiving water(s):	Classification of receiving water(s):
Horn Pond	MA71019	Class B Surface Water

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

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

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

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

4. Indicate the seven day-ten-year low flow (7Q10) of the receiving water determined in accordance with the instructions in Appendix V for sites located in Massachusetts and Appendix VI for sites located in New Hampshire.	0.203 MGD
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.	2.4

6. Has the operator received confirmation from the appropriate State for the 7Q10and dilution factor indicated? (check one): ☐ Yes ■ No
If yes, indicate date confirmation received:

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

C. Source water information:

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

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

2. Source water contaminants: Historic releases of petroleum from the former underground storage tank (UST) system	
a. For source waters that are contaminated groundwater or contaminated surface water, indicate are any contaminants present that are not included in the RGP? (check one): ☐ Yes ■ No If yes, indicate the contaminant(s) and the maximum concentration present in accordance with the instructions in Appendix VIII.	b. For a source water that is a surface water other than the receiving water, potable water or other, indicate any contaminants present at the maximum concentration in accordance with the instructions in Appendix VIII? (check one): ☐ Yes ☐ No
3. Has the source water been previously chlorinated or otherwise contains residual chlorine? (check one): ☐ Yes ■ No	

D. Discharge information

1.The discharge(s) is a(n) (check any that apply): ☐ Existing discharge ■ New discharge ☐ New source	
Outfall(s): Proposed discharge to a catch basin drains into Horn Pond located south-southwestof the site. See attached figure for approximate outfall location.	Outfall location(s): (Latitude, Longitude) 42.47053N, -71.15713W
Discharges enter the receiving water(s) via (check any that apply): ☐ Direct discharge to the receiving water ■ Indirect discharge, if so, specify: Discharge to a storm drain catch basin south of the Site that discharges to a small unnamed pond and ultimately to Horn Pond located west of the Site. ☐ A private storm sewer system ■ A municipal storm sewer system If the discharge enters the receiving water via a private or municipal storm sewer system: Has notification been provided to the owner of this system? (check one): ■ Yes ☐ No Has the operator has received permission from the owner to use such system for discharges? (check one): ☐ Yes ■ No, if so, explain, with an estimated timeframe for obtaining permission: Authorization to be obtained from the City of Woburn DPW pending RGP approval. Discussed with DPW on-Site on 4/17/2020. Has the operator attached a summary of any additional requirements the owner of this system has specified? (check one): ☐ Yes ☐ No City of Woburn DPW permit will be obtained once the RGP is approved.	
Provide the expected start and end dates of discharge(s) (month/year): 11/2020 Indicate if the discharge is expected to occur over a duration of: ■ less than 12 months ☐ 12 months or more ☐ is an emergency discharge	
Has the operator attached a site plan in accordance with the instructions in D, above? (check one): ■ Yes ☐ No	

<table>
<tr><td>2. Activity Category: (check all that apply)</td><td colspan="2">3. Contamination Type Category: (check all that apply)</td></tr>
<tr><td rowspan="5">■ I – Petroleum-Related Site Remediation
☐ II – Non-Petroleum-Related Site Remediation
☐ III – Contaminated Site Dewatering
☐ IV – Dewatering of Pipelines and Tanks
☐ V – Aquifer Pump Testing
☐ VI – Well Development/Rehabilitation
☐ VII – Collection Structure Dewatering/Remediation
☐ VIII – Dredge-Related Dewatering</td><td colspan="2">a. If Activity Category I or II: (check all that apply)

■ A. Inorganics
■ B. Non-Halogenated Volatile Organic Compounds
■ C. Halogenated Volatile Organic Compounds
■ D. Non-Halogenated Semi-Volatile Organic Compounds
■ E. Halogenated Semi-Volatile Organic Compounds
■ F. Fuels Parameters</td></tr>
<tr><td colspan="2">b. If Activity Category III, IV, V, VI, VII or VIII: (check either G or H)</td></tr>
<tr><td>☐ G. Sites with Known Contamination</td><td>☐ H. Sites with Unknown Contamination</td></tr>
<tr><td>c. If Category III-G, IV-G, V-G, VI-G, VII-G or VIII-G: (check all that apply)

☐ A. Inorganics
☐ B. Non-Halogenated Volatile Organic Compounds
☐ C. Halogenated Volatile Organic Compounds
☐ D. Non-Halogenated Semi-Volatile Organic Compounds
☐ E. Halogenated Semi-Volatile Organic Compounds
☐ F. Fuels Parameters</td><td>d. If Category III-H, IV-H, V-H, VI-H, VII-H or VIII-H Contamination Type Categories A through F apply</td></tr>
</table>

See influent groundwater analytical results for sample "MW-302" and "MW-305" on pages 11 through 26 of the attached laboratory report.

4. Influent and Effluent Characteristics

Parameter	Known or believed absent	Known or believed present	# of samples	Test method (#)	Detection limit (µg/l)	Influent		Effluent Limitations	
						Daily maximum (µg/l)	Daily average (µg/l)	TBEL	WQBEL
A. Inorganics									
Ammonia		✔	2	SM4500B	0.2 mg/L	1.6 mg/L	1.050 mg/L	Report mg/L	---
Chloride		✔	2	300	2,000 ug/L	198,000 ug/L	144,100 ug/L	Report µg/l	---
Total Residual Chlorine	✔		2	SM4500	0.050 mg/L	0.050 mg/L	0.025 mg/L	0.2 mg/L	27 ug/L
Total Suspended Solids		✔	2	SM2540D	4.0 mg/L	233 mg/L	187.5 mg/L	30 mg/L	---
Antimony	✔		2	200.8	2.0 ug/L	<2.0 ug/L	<2.0 ug/L	206 µg/L	1542 ug/L
Arsenic		✔	2	200.8	1.0 ug/L	21.2 ug/L	16.2 ug/L	104 µg/L	24 ug/L
Cadmium		✔	2	200.8	0.50 ug/L	5.3 ug/L	2.9 ug/L	10.2 µg/L	0.8212 ug/L
Chromium III	✔		2	7196A/cal	14 ug/L	<14 ug/L	<14 ug/L	323 µg/L	268.0 ug/L
Chromium VI	✔		2	7196A	10 ug/L	<10 ug/L	<10 ug/L	323 µg/L	27.6 ug/L
Copper		✔	2	200.8	4.0 ug/L	20.6 ug/L	17.3 ug/L	242 µg/L	29.3 ug/L
Iron		✔	2	200.8	500 ug/L	32,100 ug/L	24,850 ug/L	5,000 µg/L	2125 ug/L
Lead		✔	2	200.8	0.5 ug/L	17.6 ug/L	16.4 ug/L	160 µg/L	11.39 ug/L
Mercury	✔		2	245.1	0.20 ug/L	<0.20 ug/L	<0.20 ug/L	0.739 µg/L	2.18 ug/L
Nickel		✔	2	200.8	4.0 ug/L	7.2 ug/L	7.15 ug/L	1,450 µg/L	163.6 ug/L
Selenium		✔	2	200.8	1.0 ug/L	1.0 ug/L	1.0 ug/L	235.8 µg/L	12.0 ug/L
Silver	✔		2	200.8	2.0 ug/L	<2.0 ug/L	<2.0 ug/L	35.1 µg/L	15.6 ug/L
Zinc		✔	2	200.8	100 ug/L	492 ug/L	270.3 ug/L	420 µg/L	375.8 ug/L
Cyanide	✔		2	335.4	0.001 mg/L	<0.001 mg/L	<0.001 mg/L	178 mg/L	12.5 ug/L
B. Non-Halogenated VOCs									
Total BTEX		✔	2	8260C	1.0 ug/L	25.9 ug/L	12.95 ug/L	100 µg/L	---
Benzene		✔	2	8260C	0.5 ug/L	25.9 ug/L	12.95 ug/L	5.0 µg/L	---
1,4 Dioxane	✔		2	8260C	0.40 ug/L	<0.40 ug/L	<0.40 ug/L	200 µg/L	---
Acetone	✔		2	8260C	10 ug/L	<10 ug/L	<10 ug/L	7.97 mg/L	---
Phenol	✔		2	420.4	200 ug/L	<2000 ug/L	<200 ug/L	1,080 µg/L	723 ug/L

Parameter	Known or believed absent	Known or believed present	# of samples	Test method (#)	Detection limit (µg/l)	Influent		Effluent Limitations	
						Daily maximum (µg/l)	Daily average (µg/l)	TBEL	WQBEL
C. Halogenated VOCs									
Carbon Tetrachloride	✔		2	8260C	1.0 ug/L	<1.0 ug/L	<1.0 ug/L	4.4 µg/L	3.9 ug/L
1,2 Dichlorobenzene	✔		2	8260C	1.0 ug/L	<1.0 ug/L	<1.0 ug/L	600 µg/L	---
1,3 Dichlorobenzene	✔		2	8260C	1.0 ug/L	<1.0 ug/L	<1.0 ug/L	320 µg/L	---
1,4 Dichlorobenzene	✔		2	8260C	1.0 ug/L	<1.0 ug/L	<1.0 ug/L	5.0 µg/L	---
Total dichlorobenzene	✔		2	Calculated	1.0 ug/L	<1.0 ug/L	<1.0 ug/L	763 µg/L in NH	---
1,1 Dichloroethane	✔		2	8260C	1.0 ug/L	<1.0 ug/L	<1.0 ug/L	70 µg/L	---
1,2 Dichloroethane	✔		2	8260C	1.0 ug/L	<1.0 ug/L	<1.0 ug/L	5.0 µg/L	---
1,1 Dichloroethylene	✔		2	8260C	1.0 ug/L	<1.0 ug/L	<1.0 ug/L	3.2 µg/L	---
Ethylene Dibromide	✔		2	8011	0.019 ug/L	<0.019 ug/L	<0.019 ug/L	0.05 µg/L	---
Methylene Chloride	✔		2	8260C	2.0 ug/L	<2.0 ug/L	<2.0 ug/L	4.6 µg/L	---
1,1,1 Trichloroethane	✔		2	8260C	1.0 ug/L	<1.0 ug/L	<1.0 ug/L	200 µg/L	---
1,1,2 Trichloroethane	✔		2	8620C	1.0 ug/L	<1.0 ug/L	<1.0 ug/L	5.0 µg/L	---
Trichloroethylene	✔		2	8260C	1.0 ug/L	<1.0 ug/L	<1.0 ug/L	5.0 µg/L	---
Tetrachloroethylene	✔		2	8260C	1.0 ug/L	<1.0 ug/L	<1.0 ug/L	5.0 µg/L	8.0 ug/L
cis-1,2 Dichloroethylene	✔		2	8260C	1.0 ug/L	<1.0 ug/L	<1.0 ug/L	70 µg/L	---
Vinyl Chloride	✔		2	8620C	1.0 ug/L	<1.0 ug/L	<1.0 ug/L	2.0 µg/L	---
D. Non-Halogenated SVOCs									
Total Phthalates	✔		2	8720D	1.9 ug/L	<1.9 ug/L	<1.9 ug/L	190 µg/L	--
Diethylhexyl phthalate	✔		2	8270D	1.9 ug/L	<1.9 ug/L	<1.9 ug/L	101 µg/L	5.3 ug/L
Total Group I PAHs	✔		2	8270D	0.095 ug/L	<0.095 ug/L	<0.095 ug/L	1.0 µg/L	---
Benzo(a)anthracene	✔		2	8270D	0.048 ug/L	<0.048 ug/L	<0.048 ug/L	As Total PAHs	0.0092 ug/L
Benzo(a)pyrene	✔		2	8270D	0.048 ug/L	<0.048 ug/L	<0.048 ug/L		0.0092 ug/L
Benzo(b)fluoranthene	✔		2	8270D	0.048 ug/L	<0.048 ug/L	<0.048 ug/L		0.0092 ug/L
Benzo(k)fluoranthene	✔		2	8270D	0.095 ug/L	<0.095 ug/L	<0.095 ug/L		0.0092 ug/L
Chrysene	✔		2	8270D	0.095 ug/L	<0.095 ug/L	<0.095 ug/L		0.0092 ug/L
Dibenzo(a,h)anthracene	✔		2	8270D	0.095 ug/L	<0.095 ug/L	<0.095 ug/L		0.0092 ug/L
Indeno(1,2,3-cd)pyrene	✔		2	8270D	0.095 ug/L	<0.095 ug/L	<0.095 ug/L		0.0092 ug/L

Parameter	Known or believed absent	Known or believed present	# of samples	Test method (#)	Detection limit (µg/l)	Influent		Effluent Limitations	
						Daily maximum (µg/l)	Daily average (µg/l)	TBEL	WQBEL
Total Group II PAHs		✔	2	8270D	0.097 ug/L	1.141 ug/L	1.264 ug/L	100 µg/L	---
Naphthalene		✔	2	8270D	0.097 ug/L	0.246 ug/L	0.232 ug/L	20 µg/L	---
E. Halogenated SVOCs									
Total PCBs	✔		2	608	0.37 ug/L	<0.37 ug/L	<0.31 ug/L	0.000064 µg/L	---
Pentachlorophenol	✔		2	8270D	0.24 ug/L	<0.24 ug/L	<0.24 ug/L	1.0 µg/L	---
F. Fuels Parameters									
Total Petroleum Hydrocarbons	✔		1	1664A	5.0 mg/L	<5.0 mg/L	<5.0 mg/L	5.0 mg/L	---
Ethanol	✔		2	8260C	0.1 mg/L	<0.1 mg/L	<0.1 mg/L	Report mg/L	---
Methyl-tert-Butyl Ether		✔	2	8260C	1.0 ug/L	3.4 ug/L	3.15 ug/L	70 µg/L	48 ug/L
tert-Butyl Alcohol		✔	2	8260C	10 ug/L	120 ug/L	60 ug/L	120 µg/L in MA 40 µg/L in NH	---
tert-Amyl Methyl Ether	✔		2	8260C	2.0 ug/L	<2.0 ug/L	<2.0 ug/L	90 µg/L in MA 140 µg/L in NH	---
Other (i.e., pH, temperature, hardness, salinity, LC_{50}, additional pollutants present); if so, specify:									
Hardness		✔	2	2340C	5.0 mg/L	260 mg/L	255 mg/L		
Field measured pH		✔	2	Field		6.94 SU	6.85 SU		
Field measured Temperature		✔	2	Field		9.28 C	8.68 C		

E. Treatment system information

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

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

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

See below written description of the proposed treatment system.

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

An electric submersible pump will pump groundwater from a temporary excavation dewatering sump to a 21,000-gallon fractionation (frac) tank. Recovered groundwater shall pass through bag filters to remove particulates and two 2,000-lb liquid phase granular activated carbon (LGAC) units plumbed in series. The treated groundwater shall be discharged into a nearby storm drain catch basin located in Winn Street, in front of the site property. The storm drain discharges to Horn Pond freshwater surface water located approximately 0.6 miles to the southwest.

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

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

☐ Chemical feed tank ☐ Air stripping unit ■ Bag filter ■ Other; if so, specify: The proposed treatment system will also include liquid phase granular activated carbon (LGAC) units and a flow meter/totalizer.

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

☐ Chlorination ☐ De-chlorination

3. Provide the **design flow capacity** in gallons per minute (gpm) of the most limiting component. Indicate the most limiting component: Liquid phase granular activated carbon (LGAC) design flow rate of 75 gallons per minute (gpm) & max rate of 100 gpm. Is use of a flow meter feasible? (check one): ■ Yes ☐ No, if so, provide justification:	
Provide the proposed maximum effluent flow in gpm.	100
Provide the average effluent flow in gpm.	50
If Activity Category IV applies, indicate the estimated total volume of water that will be discharged:	

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

F. Chemical and additive information

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

☐ Algaecides/biocides ☐ Antifoams ☐ Coagulants ☐ Corrosion/scale inhibitors ☐ Disinfectants ☐ Flocculants ☐ Neutralizing agents ☐ Oxidants ☐ Oxygen ☐ scavengers ☐ pH conditioners ☐ Bioremedial agents, including microbes ☐ Chlorine or chemicals containing chlorine ☐ Other; if so, specify:
Not applicable

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

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

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

G. Endangered Species Act eligibility determination

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

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

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

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

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

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

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

H. National Historic Preservation Act eligibility determination

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

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

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

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

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

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

I. Supplemental information

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

Please see attached figures, data tables, laboratory analytical reports and supporting documentation for supplemental information.

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

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

J. Certification requirement

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

BMPP certification statement: A Best Management Practices Plan (BMPP) has been prepared for the dewatering system/discharge and a copy will be maintained on-site.	
Notification provided to the appropriate State, including a copy of this NOI, if required.	Check one: Yes ■ No ☐
Notification provided to the municipality in which the discharge is located, including a copy of this NOI, if requested.	Check one: Yes ■ No ☐
Notification provided to the owner of a private or municipal storm sewer system, if such system is used for site discharges, including a copy of this NOI, if requested.	Check one: Yes ■ No ☐ NA ☐
Permission obtained from the owner of a private or municipal storm sewer system, if such system is used for site discharges. If yes, attach additional conditions. If no, attach explanation and timeframe for obtaining permission.	Check one: Yes ☐ No ■ NA ☐
Notification provided to the owner/operator of the area associated with activities covered by an additional discharge permit(s). Additional discharge permit is (check one): ☐ RGP ☐ DGP ☐ CGP ☐ MSGP ☐ Individual NPDES permit ☐ Other; if so, specify:	Check one: Yes ☐ No ☐ NA ■
Signature: Meghan D. Proia	Date: 7/31/2020
Print Name and Title: Meghan D. Proia, PE , Senior Engineer	

Attachment B – Laboratory Analytical Report

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

e-Hardcopy 2.0
Automated Report

Technical Report for

Groundwater & Environmental Services

Ginn Oil, 57 Winn St, Woburn, MA

PSID#834511

SGS Job Number: JD4892

Sampling Date: 03/16/20

Report to:

Groundwater & Environmental Services
One Park Drive, Suite 8
Westford, MA 01886
ekontos@gesonline.com; neregion@gesonline.com

ATTN: Edward Kontos

Total number of pages in report: 90

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

Laura Degenhardt
General Manager

Client Service contact: Beth Wasserman 732-329-0200

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

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Test results relate only to samples analyzed.

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how we can serve you better at:
EHS.US.CustomerCare@sgs.com

Sections: 1 2 3 4 5 6 7 8 9 10 11

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SGS North America Inc.

Sample Summary

Groundwater & Environmental Services

Job No: JD4892

Ginn Oil, 57 Winn St, Woburn, MA
Project No: PSID#834511

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
This report contains results reported as ND = Not detected. The following applies:							
Organics ND = Not detected above the RL							
JD4892-1	03/16/20	10:40	JDW	03/18/20	AQ	Ground Water	MW-302
JD4892-2	03/16/20	16:30	JDW	03/18/20	AQ	Ground Water	MW-305

CASE NARRATIVE / CONFORMANCE SUMMARY

Client:	Groundwater & Environmental Services	**Job No**	JD4892
Site:	Ginn Oil, 57 Winn St, Woburn, MA	**Report Date**	4/6/2020 5:00:19 PM

On 03/18/2020, 2 Sample(s), 0 Trip Blank(s) and 0 Field Blank(s) were received at SGS North America Inc. at a maximum corrected temperature of 1.9 C. Samples were intact and chemically preserved, unless noted below. A SGS North America Inc. Job Number of JD4892 was assigned to the project. Laboratory sample ID, client sample ID and dates of sample collection are detailed in the report's Results Summary Section.Specified quality control criteria were achieved for this job except as noted below. For more information, please refer to the analytical results and QC summary pages.

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

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

MS Volatiles By Method SW846 8260C

Matrix: AQ **Batch ID:** VL9472

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- JD4892-2: Sample analyzed with head-space vial due to limited vials provided.
- Not all MCP compounds are reported.

MS Volatiles By Method SW846 8260C BY SIM

Matrix: AQ **Batch ID:** V3A7110

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Only report 1,4-Dioxane

MS Semi-volatiles By Method SW846 8270D

Matrix: AQ **Batch ID:** OP26660

- All method blanks for this batch meet method specific criteria.
- JD4892-2: Sample extracted outside the holding time.
- JD4892-1: Sample extracted outside the holding time.
- Not all MCP compounds are reported.

MS Semi-volatiles By Method SW846 8270D BY SIM

Matrix: AQ **Batch ID:** OP26614A

- All samples were extracted within the recommended method holding time.
- Sample(s) JD4892-1 have compound(s) reported with a "B" qualifier, indicating analyte is found in the associated method blank.
- JD4892-1 for Phenol-d5: Outside of program requirements.
- JD4892-1 for Pentachlorophenol: Associated CCV outside of control limits high, sample was ND.
- OP26614A-BSD12 for Pyrene: Outside of in house control limits.
- OP26614A-BSD12 for Chrysene: Outside of in house control limits.
- JD4892-1 for Naphthalene: Sample reextracted outside of the holding time for confirmation.
- OP26614A-BS12 for Pentachlorophenol: High percent recoveries and no associated positive found in the QC batch.
- OP26614A-BSD12 for Benzo(a)anthracene: Outside of in house control limits.

Matrix: AQ **Batch ID:** OP26660A

- All method blanks for this batch meet method specific criteria.
- JD4892-2: Sample extracted outside the holding time.
- JD4892-1: Sample extracted outside the holding time. Confirmation run.
- JD4892-1 for Phenol-d5: Outside of program requirements.
- Not all MCP compounds are reported.

GC Volatiles By Method SW846-8011

Matrix: AQ **Batch ID:** OP26659

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

GC/LC Semi-volatiles By Method EPA 608.3

Matrix: AQ **Batch ID:** OP26716

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

Matrix: AQ **Batch ID:** OP26849

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

Metals Analysis By Method EPA 200.7

Matrix: AQ **Batch ID:** MP20430

- All samples were digested within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JD4979-1SDL were used as the QC samples for metals.

Metals Analysis By Method EPA 200.8

Matrix: AQ **Batch ID:** MP20472

- All samples were digested within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- : Only report requested metals.

Metals Analysis By Method EPA 245.1

Matrix: AQ	Batch ID: MP20363

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

General Chemistry By Method EPA 1664A

Matrix: AQ	Batch ID: GP27364

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

General Chemistry By Method EPA 300/SW846 9056A

Matrix: AQ	Batch ID: GP27373

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

General Chemistry By Method EPA 335.4/LACHAT

Matrix: AQ	Batch ID: GP27356

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

General Chemistry By Method EPA 420.4/LACHAT

Matrix: AQ	Batch ID: GP27412

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

General Chemistry By Method SM2340 C-11

Matrix: AQ	Batch ID: GN6668

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

General Chemistry By Method SM2540 D-11

Matrix: AQ	Batch ID: GN6480

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

General Chemistry By Method SM4500CL F-11

Matrix: AQ	Batch ID: GN6576

- All method blanks for this batch meet method specific criteria.
- JD4892-1 for Total Residual Chlorine: Field analysis required. Received out of hold time and analyzed by request.
- JD4892-2 for Total Residual Chlorine: Field analysis required. Received out of hold time and analyzed by request.

General Chemistry By Method SM4500NH3 H-11LACHAT

Matrix: AQ	Batch ID: GP27428

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

General Chemistry By Method SW846 6010/7196A M

Matrix: AQ	Batch ID: R184623

- The data for SW846 6010/7196A M meets quality control requirements.
- JD4892-1 for Chromium, Trivalent: Calculated as: (Chromium) - (Chromium, Hexavalent)

Matrix: AQ	Batch ID: R184624

- The data for SW846 6010/7196A M meets quality control requirements.
- JD4892-2 for Chromium, Trivalent: Calculated as: (Chromium) - (Chromium, Hexavalent)

General Chemistry By Method SW846 7196A

Matrix: AQ	Batch ID: GN6474

- All method blanks for this batch meet method specific criteria.
- The following samples were run outside of holding time for method SW846 7196A: JD4892-1, JD4892-2 Sample received outside the holding time.

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

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

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

Summary of Hits

Job Number: JD4892
Account: Groundwater & Environmental Services
Project: Ginn Oil, 57 Winn St, Woburn, MA
Collected: 03/16/20

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
JD4892-1	**MW-302**					
Benzene		25.9	0.50		ug/l	SW846 8260C
Methyl Tert Butyl Ether		2.9	1.0		ug/l	SW846 8260C
Naphthalene [a]		0.246 B	0.095		ug/l	SW846 8270D BY SIM
Arsenic		11.1	1.0		ug/l	EPA 200.8
Calcium		102000	5000		ug/l	EPA 200.7
Chromium		11.6	4.0		ug/l	EPA 200.8
Copper		20.6	4.0		ug/l	EPA 200.8
Iron		17600	250		ug/l	EPA 200.8
Lead		17.6	0.50		ug/l	EPA 200.8
Magnesium		5700	5000		ug/l	EPA 200.7
Nickel		7.2	4.0		ug/l	EPA 200.8
Selenium		1.0	1.0		ug/l	EPA 200.8
Zinc		48.6	10		ug/l	EPA 200.8
Chloride		90.2	2.0		mg/l	EPA 300/SW846 9056A
Hardness, Total as CaCO3		250	5.0		mg/l	SM2340 C-11
Nitrogen, Ammonia		0.50	0.20		mg/l	SM4500NH3 H-11LACHAT
Solids, Total Suspended		233	4.0		mg/l	SM2540 D-11
JD4892-2	**MW-305**					
Methyl Tert Butyl Ether [b]		3.4	1.0		ug/l	SW846 8260C
Tert Butyl Alcohol [b]		120	10		ug/l	SW846 8260C
Acenaphthene [c]		0.178	0.097		ug/l	SW846 8270D BY SIM
Fluorene [c]		0.378	0.097		ug/l	SW846 8270D BY SIM
Naphthalene [c]		0.217	0.097		ug/l	SW846 8270D BY SIM
Phenanthrene [c]		0.368	0.049		ug/l	SW846 8270D BY SIM
Arsenic		21.2	1.0		ug/l	EPA 200.8
Cadmium		5.3	0.50		ug/l	EPA 200.8
Calcium		81500	5000		ug/l	EPA 200.7
Chromium		6.4	4.0		ug/l	EPA 200.8
Copper		14.0	4.0		ug/l	EPA 200.8
Iron		32100	500		ug/l	EPA 200.8
Lead		15.1	0.50		ug/l	EPA 200.8
Magnesium		12500	5000		ug/l	EPA 200.7
Nickel		7.1	4.0		ug/l	EPA 200.8
Selenium		1.0	1.0		ug/l	EPA 200.8
Zinc		492	100		ug/l	EPA 200.8
Chloride		198	2.0		mg/l	EPA 300/SW846 9056A
Hardness, Total as CaCO3		260	5.0		mg/l	SM2340 C-11
Nitrogen, Ammonia		1.6	0.20		mg/l	SM4500NH3 H-11LACHAT
Solids, Total Suspended		142	4.0		mg/l	SM2540 D-11
Total Residual Chlorine [d]		0.050	0.050		mg/l	SM4500CL F-11

Summary of Hits

Job Number: JD4892
Account: Groundwater & Environmental Services
Project: Ginn Oil, 57 Winn St, Woburn, MA
Collected: 03/16/20

Lab Sample ID	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
Analyte						

(a) Sample reextracted outside of the holding time for confirmation.
(b) Sample analyzed with head-space vial due to limited vials provided.
(c) Sample extracted outside the holding time.
(d) Field analysis required. Received out of hold time and analyzed by request.

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID: MW-302
Lab Sample ID: JD4892-1
Matrix: AQ - Ground Water
Method: SW846 8260C BY SIM
Project: Ginn Oil, 57 Winn St, Woburn, MA

Date Sampled: 03/16/20
Date Received: 03/18/20
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3A163893.D	1	03/23/20 10:59	RS	n/a	n/a	V3A7110
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	RL	Units	Q
123-91-1	1,4-Dioxane	ND	0.40	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17647-74-4	1,4-Dioxane-d8	117%		25-195%

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-302		
Lab Sample ID:	JD4892-1	**Date Sampled:**	03/16/20
Matrix:	AQ - Ground Water	**Date Received:**	03/18/20
Method:	SW846 8260C	**Percent Solids:**	n/a
Project:	Ginn Oil, 57 Winn St, Woburn, MA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	L320814.D	1	03/27/20 10:39	MD	n/a	n/a	VL9472
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA Special List

CAS No.	Compound	Result	RL	Units	Q
64-17-5	Ethanol	ND	100	ug/l	
67-64-1	Acetone	ND	10	ug/l	
71-43-2	Benzene	25.9	0.50	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	ug/l	
100-41-4	Ethylbenzene	ND	1.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	2.9	1.0	ug/l	
75-09-2	Methylene chloride	ND	2.0	ug/l	
75-65-0	Tert Butyl Alcohol	ND	10	ug/l	
994-05-8	tert-Amyl Methyl Ether	ND	2.0	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	ug/l	
108-88-3	Toluene	ND	1.0	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	ug/l	
79-01-6	Trichloroethene	ND	1.0	ug/l	
75-01-4	Vinyl chloride	ND	1.0	ug/l	
1330-20-7	Xylene (total)	ND	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	99%		80-120%
17060-07-0	1,2-Dichloroethane-D4	93%		81-124%
2037-26-5	Toluene-D8	97%		80-120%
460-00-4	4-Bromofluorobenzene	93%		80-120%

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-302		
Lab Sample ID:	JD4892-1	**Date Sampled:**	03/16/20
Matrix:	AQ - Ground Water	**Date Received:**	03/18/20
Method:	SW846 8270D SW846 3510C	**Percent Solids:**	n/a
Project:	Ginn Oil, 57 Winn St, Woburn, MA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 [a]	M164740.D	1	03/26/20 07:10	CS	03/25/20 12:30	OP26660	EM6974
Run #2							

	Initial Volume	Final Volume
Run #1	1040 ml	1.0 ml
Run #2		

ABN Special List

CAS No.	Compound	Result	RL	Units	Q
85-68-7	Butyl benzyl phthalate	ND	1.9	ug/l	
84-74-2	Di-n-butyl phthalate	ND	1.9	ug/l	
117-84-0	Di-n-octyl phthalate	ND	1.9	ug/l	
84-66-2	Diethyl phthalate	ND	1.9	ug/l	
131-11-3	Dimethyl phthalate	ND	1.9	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	ND	1.9	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	33%		10-73%
4165-62-2	Phenol-d5	26%		10-64%
118-79-6	2,4,6-Tribromophenol	93%		31-130%
4165-60-0	Nitrobenzene-d5	85%		28-126%
321-60-8	2-Fluorobiphenyl	82%		26-114%
1718-51-0	Terphenyl-d14	78%		16-122%

(a) Sample extracted outside the holding time.

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: MW-302
Lab Sample ID: JD4892-1
Matrix: AQ - Ground Water
Method: SW846 8270D BY SIM SW846 3510C
Project: Ginn Oil, 57 Winn St, Woburn, MA

Date Sampled: 03/16/20
Date Received: 03/18/20
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4M91801.D	1	04/03/20 18:33	HSS	03/23/20 09:30	OP26614A	E4M4237
Run #2 [a]	3P83840.D	1	03/26/20 05:00	CS	03/25/20 12:30	OP26660A	E3P3927

	Initial Volume	Final Volume
Run #1	1050 ml	1.0 ml
Run #2	1040 ml	1.0 ml

ABSIM Special List

CAS No.	Compound	Result	RL	Units	Q
87-86-5	Pentachlorophenol [b]	ND	0.24	ug/l	
83-32-9	Acenaphthene	ND	0.095	ug/l	
208-96-8	Acenaphthylene	ND	0.095	ug/l	
120-12-7	Anthracene	ND	0.095	ug/l	
56-55-3	Benzo(a)anthracene	ND	0.048	ug/l	
50-32-8	Benzo(a)pyrene	ND	0.048	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	0.048	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	0.095	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	0.095	ug/l	
218-01-9	Chrysene	ND	0.095	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	0.095	ug/l	
206-44-0	Fluoranthene	ND	0.095	ug/l	
86-73-7	Fluorene	ND	0.095	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.095	ug/l	
91-20-3	Naphthalene [c]	0.246	0.095	ug/l	B
85-01-8	Phenanthrene	ND	0.048	ug/l	
129-00-0	Pyrene	ND	0.095	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	41%	37%	15-110%
4165-62-2	Phenol-d5	29% [d]	26% [d]	12-110%
118-79-6	2,4,6-Tribromophenol	87%	84%	32-143%
4165-60-0	Nitrobenzene-d5	77%	78%	29-124%
321-60-8	2-Fluorobiphenyl	75%	72%	23-122%
1718-51-0	Terphenyl-d14	79%	79%	22-130%

(a) Sample extracted outside the holding time. Confirmation run.
(b) Associated CCV outside of control limits high, sample was ND.
(c) Sample reextracted outside of the holding time for confirmation.
(d) Outside of program requirements.

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: MW-302
Lab Sample ID: JD4892-1
Matrix: AQ - Ground Water
Method: SW846-8011 SW846 8011
Project: Ginn Oil, 57 Winn St, Woburn, MA

Date Sampled: 03/16/20
Date Received: 03/18/20
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	7G36498.D	1	03/30/20 15:23	TL	03/24/20 08:15	OP26659	G7G1296
Run #2							

	Initial Volume	Final Volume
Run #1	36 ml	2.0 ml
Run #2		

CAS No.	Compound	Result	RL	Units	Q
106-93-4	1,2-Dibromoethane	ND	0.019	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
3017-95-6	2-Bromo-1-chloropropane	110%		20-144%
3017-95-6	2-Bromo-1-chloropropane	118%		20-144%

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-302		
Lab Sample ID:	JD4892-1	**Date Sampled:**	03/16/20
Matrix:	AQ - Ground Water	**Date Received:**	03/18/20
Method:	EPA 608.3 EPA 608	**Percent Solids:**	n/a
Project:	Ginn Oil, 57 Winn St, Woburn, MA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	XX2447975.D	1	03/31/20 17:03	TR	03/31/20 06:30	OP26716	GXX6976
Run #2							

	Initial Volume	Final Volume
Run #1	1050 ml	5.0 ml
Run #2		

PCB List

CAS No.	Compound	Result	RL	Units	Q
12674-11-2	Aroclor 1016	ND	0.24	ug/l	
11104-28-2	Aroclor 1221	ND	0.24	ug/l	
11141-16-5	Aroclor 1232	ND	0.24	ug/l	
53469-21-9	Aroclor 1242	ND	0.24	ug/l	
12672-29-6	Aroclor 1248	ND	0.24	ug/l	
11097-69-1	Aroclor 1254	ND	0.24	ug/l	
11096-82-5	Aroclor 1260	ND	0.24	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	75%		10-159%
877-09-8	Tetrachloro-m-xylene	75%		10-159%
2051-24-3	Decachlorobiphenyl	73%		10-135%
2051-24-3	Decachlorobiphenyl	82%		10-135%

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: MW-302
Lab Sample ID: JD4892-1
Matrix: AQ - Ground Water
Project: Ginn Oil, 57 Winn St, Woburn, MA

Date Sampled: 03/16/20
Date Received: 03/18/20
Percent Solids: n/a

Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Antimony	< 2.0	2.0	ug/l	1	03/30/20	04/01/20	NV	EPA 200.8 [3]	EPA 200.8 [7]
Arsenic	11.1	1.0	ug/l	1	03/30/20	04/01/20	NV	EPA 200.8 [3]	EPA 200.8 [7]
Cadmium	< 0.50	0.50	ug/l	1	03/30/20	04/01/20	NV	EPA 200.8 [3]	EPA 200.8 [7]
Calcium	102000	5000	ug/l	1	03/25/20	03/30/20	ND	EPA 200.7 [2]	EPA 200.7 [6]
Chromium	11.6	4.0	ug/l	1	03/30/20	04/01/20	NV	EPA 200.8 [3]	EPA 200.8 [7]
Copper	20.6	4.0	ug/l	1	03/30/20	04/01/20	NV	EPA 200.8 [3]	EPA 200.8 [7]
Iron	17600	250	ug/l	5	03/30/20	04/02/20	GT	EPA 200.8 [4]	EPA 200.8 [7]
Lead	17.6	0.50	ug/l	1	03/30/20	04/01/20	NV	EPA 200.8 [3]	EPA 200.8 [7]
Magnesium	5700	5000	ug/l	1	03/25/20	03/30/20	ND	EPA 200.7 [2]	EPA 200.7 [6]
Mercury	< 0.20	0.20	ug/l	1	03/20/20	03/20/20	LL	EPA 245.1 [1]	EPA 245.1 [5]
Nickel	7.2	4.0	ug/l	1	03/30/20	04/01/20	NV	EPA 200.8 [3]	EPA 200.8 [7]
Selenium	1.0	1.0	ug/l	1	03/30/20	04/01/20	NV	EPA 200.8 [3]	EPA 200.8 [7]
Silver	< 2.0	2.0	ug/l	1	03/30/20	04/02/20	GT	EPA 200.8 [4]	EPA 200.8 [7]
Zinc	48.6	10	ug/l	1	03/30/20	04/01/20	NV	EPA 200.8 [3]	EPA 200.8 [7]

(1) Instrument QC Batch: MA48443
(2) Instrument QC Batch: MA48470
(3) Instrument QC Batch: MA48481
(4) Instrument QC Batch: MA48493
(5) Prep QC Batch: MP20363
(6) Prep QC Batch: MP20430
(7) Prep QC Batch: MP20472

RL = Reporting Limit

Report of Analysis

Client Sample ID: MW-302
Lab Sample ID: JD4892-1
Matrix: AQ - Ground Water
Project: Ginn Oil, 57 Winn St, Woburn, MA

Date Sampled: 03/16/20
Date Received: 03/18/20
Percent Solids: n/a

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Chloride	90.2	2.0	mg/l	1	03/31/20 03:11	JW	EPA 300/SW846 9056A
Chromium, Hexavalent [a]	< 0.010	0.010	mg/l	1	03/19/20 22:30	EB	SW846 7196A
Chromium, Trivalent [b]	< 0.014	0.014	mg/l	1	04/01/20 01:49	NV	SW846 6010/7196A M
Cyanide	< 0.010	0.010	mg/l	1	03/30/20 09:32	KI	EPA 335.4/LACHAT
HEM Petroleum Hydrocarbons	< 5.0	5.0	mg/l	1	03/30/20 13:00	LX	EPA 1664A
Hardness, Total as CaCO3	250	5.0	mg/l	1	03/26/20 13:41	MP	SM2340 C-11
Nitrogen, Ammonia	0.50	0.20	mg/l	1	04/01/20 15:59	KI	SM4500NH3 H-11LACHAT
Phenols	< 0.20	0.20	mg/l	1	04/02/20 12:04	KI	EPA 420.4/LACHAT
Solids, Total Suspended	233	4.0	mg/l	1	03/20/20 16:08	BM	SM2540 D-11
Total Residual Chlorine [c]	< 0.050	0.050	mg/l	1	03/23/20 22:00	EB	SM4500CL F-11

(a) Sample received outside the holding time.
(b) Calculated as: (Chromium) - (Chromium, Hexavalent)
(c) Field analysis required. Received out of hold time and analyzed by request.

RL = Reporting Limit

Report of Analysis

Client Sample ID: MW-305
Lab Sample ID: JD4892-2
Matrix: AQ - Ground Water
Method: SW846 8260C BY SIM
Project: Ginn Oil, 57 Winn St, Woburn, MA

Date Sampled: 03/16/20
Date Received: 03/18/20
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3A163892.D	1	03/23/20 10:31	RS	n/a	n/a	V3A7110
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	RL	Units	Q
123-91-1	1,4-Dioxane	ND	0.40	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17647-74-4	1,4-Dioxane-d8	125%		25-195%

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-305		
Lab Sample ID:	JD4892-2	**Date Sampled:**	03/16/20
Matrix:	AQ - Ground Water	**Date Received:**	03/18/20
Method:	SW846 8260C	**Percent Solids:**	n/a
Project:	Ginn Oil, 57 Winn St, Woburn, MA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 [a]	L320813.D	1	03/27/20 10:12	MD	n/a	n/a	VL9472
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA Special List

CAS No.	Compound	Result	RL	Units	Q
64-17-5	Ethanol	ND	100	ug/l	
67-64-1	Acetone	ND	10	ug/l	
71-43-2	Benzene	ND	0.50	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	ug/l	
100-41-4	Ethylbenzene	ND	1.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	3.4	1.0	ug/l	
75-09-2	Methylene chloride	ND	2.0	ug/l	
75-65-0	Tert Butyl Alcohol	120	10	ug/l	
994-05-8	tert-Amyl Methyl Ether	ND	2.0	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	ug/l	
108-88-3	Toluene	ND	1.0	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	ug/l	
79-01-6	Trichloroethene	ND	1.0	ug/l	
75-01-4	Vinyl chloride	ND	1.0	ug/l	
1330-20-7	Xylene (total)	ND	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	101%		80-120%
17060-07-0	1,2-Dichloroethane-D4	95%		81-124%
2037-26-5	Toluene-D8	97%		80-120%
460-00-4	4-Bromofluorobenzene	94%		80-120%

(a) Sample analyzed with head-space vial due to limited vials provided.

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-305		
Lab Sample ID:	JD4892-2	**Date Sampled:**	03/16/20
Matrix:	AQ - Ground Water	**Date Received:**	03/18/20
Method:	SW846 8270D SW846 3510C	**Percent Solids:**	n/a
Project:	Ginn Oil, 57 Winn St, Woburn, MA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 [a]	M164741.D	1	03/26/20 07:38	CS	03/25/20 12:30	OP26660	EM6974
Run #2							

	Initial Volume	Final Volume
Run #1	1030 ml	1.0 ml
Run #2		

ABN Special List

CAS No.	Compound	Result	RL	Units	Q
85-68-7	Butyl benzyl phthalate	ND	1.9	ug/l	
84-74-2	Di-n-butyl phthalate	ND	1.9	ug/l	
117-84-0	Di-n-octyl phthalate	ND	1.9	ug/l	
84-66-2	Diethyl phthalate	ND	1.9	ug/l	
131-11-3	Dimethyl phthalate	ND	1.9	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	ND	1.9	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	31%		10-73%
4165-62-2	Phenol-d5	25%		10-64%
118-79-6	2,4,6-Tribromophenol	88%		31-130%
4165-60-0	Nitrobenzene-d5	83%		28-126%
321-60-8	2-Fluorobiphenyl	80%		26-114%
1718-51-0	Terphenyl-d14	65%		16-122%

(a) Sample extracted outside the holding time.

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-305		
Lab Sample ID:	JD4892-2	**Date Sampled:**	03/16/20
Matrix:	AQ - Ground Water	**Date Received:**	03/18/20
Method:	SW846 8270D BY SIM SW846 3510C	**Percent Solids:**	n/a
Project:	Ginn Oil, 57 Winn St, Woburn, MA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 [a]	3P83841.D	1	03/26/20 05:19	CS	03/25/20 12:30	OP26660A	E3P3927
Run #2							

	Initial Volume	Final Volume
Run #1	1030 ml	1.0 ml
Run #2		

ABSIM Special List

CAS No.	Compound	Result	RL	Units	Q
87-86-5	Pentachlorophenol	ND	0.24	ug/l	
83-32-9	Acenaphthene	0.178	0.097	ug/l	
208-96-8	Acenaphthylene	ND	0.097	ug/l	
120-12-7	Anthracene	ND	0.097	ug/l	
56-55-3	Benzo(a)anthracene [b]	ND	0.049	ug/l	
50-32-8	Benzo(a)pyrene	ND	0.049	ug/l	
205-99-2	Benzo(b)fluoranthene [b]	ND	0.049	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	0.097	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	0.097	ug/l	
218-01-9	Chrysene	ND	0.097	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	0.097	ug/l	
206-44-0	Fluoranthene	ND	0.097	ug/l	
86-73-7	Fluorene	0.378	0.097	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.097	ug/l	
91-20-3	Naphthalene	0.217	0.097	ug/l	
85-01-8	Phenanthrene	0.368	0.049	ug/l	
129-00-0	Pyrene	ND	0.097	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	33%		15-110%
4165-62-2	Phenol-d5	23%		12-110%
118-79-6	2,4,6-Tribromophenol	80%		32-143%
4165-60-0	Nitrobenzene-d5	68%		29-124%
321-60-8	2-Fluorobiphenyl	69%		23-122%
1718-51-0	Terphenyl-d14	68%		22-130%

(a) Sample extracted outside the holding time.
(b) Associated CCV outside of control limits high, sample was ND.

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: MW-305
Lab Sample ID: JD4892-2
Matrix: AQ - Ground Water
Method: SW846-8011 SW846 8011
Project: Ginn Oil, 57 Winn St, Woburn, MA

Date Sampled: 03/16/20
Date Received: 03/18/20
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	7G36499.D	1	03/30/20 15:42	TL	03/24/20 08:15	OP26659	G7G1296
Run #2							

	Initial Volume	Final Volume
Run #1	37 ml	2.0 ml
Run #2		

CAS No.	Compound	Result	RL	Units	Q
106-93-4	1,2-Dibromoethane	ND	0.019	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
3017-95-6	2-Bromo-1-chloropropane	103%		20-144%
3017-95-6	2-Bromo-1-chloropropane	109%		20-144%

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW-305		
Lab Sample ID:	JD4892-2	**Date Sampled:**	03/16/20
Matrix:	AQ - Ground Water	**Date Received:**	03/18/20
Method:	EPA 608.3 EPA 608	**Percent Solids:**	n/a
Project:	Ginn Oil, 57 Winn St, Woburn, MA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	5G96229.D	1	04/06/20 04:20	CP	04/03/20 12:30	OP26849	G5G2345
Run #2							

	Initial Volume	Final Volume
Run #1	680 ml	5.0 ml
Run #2		

PCB List

CAS No.	Compound	Result	RL	Units	Q
12674-11-2	Aroclor 1016	ND	0.37	ug/l	
11104-28-2	Aroclor 1221	ND	0.37	ug/l	
11141-16-5	Aroclor 1232	ND	0.37	ug/l	
53469-21-9	Aroclor 1242	ND	0.37	ug/l	
12672-29-6	Aroclor 1248	ND	0.37	ug/l	
11097-69-1	Aroclor 1254	ND	0.37	ug/l	
11096-82-5	Aroclor 1260	ND	0.37	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	57%		10-159%
877-09-8	Tetrachloro-m-xylene	66%		10-159%
2051-24-3	Decachlorobiphenyl	57%		10-135%
2051-24-3	Decachlorobiphenyl	64%		10-135%

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: MW-305
Lab Sample ID: JD4892-2
Matrix: AQ - Ground Water
Project: Ginn Oil, 57 Winn St, Woburn, MA

Date Sampled: 03/16/20
Date Received: 03/18/20
Percent Solids: n/a

Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Antimony	< 2.0	2.0	ug/l	1	03/30/20	04/01/20	NV	EPA 200.8 [3]	EPA 200.8 [7]
Arsenic	21.2	1.0	ug/l	1	03/30/20	04/01/20	NV	EPA 200.8 [3]	EPA 200.8 [7]
Cadmium	5.3	0.50	ug/l	1	03/30/20	04/01/20	NV	EPA 200.8 [3]	EPA 200.8 [7]
Calcium	81500	5000	ug/l	1	03/25/20	03/30/20	ND	EPA 200.7 [2]	EPA 200.7 [6]
Chromium	6.4	4.0	ug/l	1	03/30/20	04/01/20	NV	EPA 200.8 [3]	EPA 200.8 [7]
Copper	14.0	4.0	ug/l	1	03/30/20	04/01/20	NV	EPA 200.8 [3]	EPA 200.8 [7]
Iron	32100	500	ug/l	10	03/30/20	04/02/20	GT	EPA 200.8 [4]	EPA 200.8 [7]
Lead	15.1	0.50	ug/l	1	03/30/20	04/01/20	NV	EPA 200.8 [3]	EPA 200.8 [7]
Magnesium	12500	5000	ug/l	1	03/25/20	03/30/20	ND	EPA 200.7 [2]	EPA 200.7 [6]
Mercury	< 0.20	0.20	ug/l	1	03/20/20	03/20/20	LL	EPA 245.1 [1]	EPA 245.1 [5]
Nickel	7.1	4.0	ug/l	1	03/30/20	04/01/20	NV	EPA 200.8 [3]	EPA 200.8 [7]
Selenium	1.0	1.0	ug/l	1	03/30/20	04/01/20	NV	EPA 200.8 [3]	EPA 200.8 [7]
Silver	< 2.0	2.0	ug/l	1	03/30/20	04/02/20	GT	EPA 200.8 [4]	EPA 200.8 [7]
Zinc	492	100	ug/l	10	03/30/20	04/02/20	GT	EPA 200.8 [4]	EPA 200.8 [7]

(1) Instrument QC Batch: MA48443
(2) Instrument QC Batch: MA48470
(3) Instrument QC Batch: MA48481
(4) Instrument QC Batch: MA48493
(5) Prep QC Batch: MP20363
(6) Prep QC Batch: MP20430
(7) Prep QC Batch: MP20472

RL = Reporting Limit

Report of Analysis

Client Sample ID: MW-305
Lab Sample ID: JD4892-2
Matrix: AQ - Ground Water
Project: Ginn Oil, 57 Winn St, Woburn, MA

Date Sampled: 03/16/20
Date Received: 03/18/20
Percent Solids: n/a

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Chloride	198	2.0	mg/l	1	03/31/20 03:35	JW	EPA 300/SW846 9056A
Chromium, Hexavalent [a]	< 0.010	0.010	mg/l	1	03/19/20 22:30	EB	SW846 7196A
Chromium, Trivalent [b]	< 0.014	0.014	mg/l	1	04/01/20 01:54	NV	SW846 6010/7196A M
Cyanide	< 0.010	0.010	mg/l	1	03/30/20 09:33	KI	EPA 335.4/LACHAT
Hardness, Total as CaCO3	260	5.0	mg/l	1	03/26/20 13:44	MP	SM2340 C-11
Nitrogen, Ammonia	1.6	0.20	mg/l	1	04/01/20 16:01	KI	SM4500NH3 H-11LACHAT
Phenols	< 0.20	0.20	mg/l	1	04/02/20 12:05	KI	EPA 420.4/LACHAT
Solids, Total Suspended	142	4.0	mg/l	1	03/20/20 16:08	BM	SM2540 D-11
Total Residual Chlorine [c]	0.050	0.050	mg/l	1	03/23/20 22:00	EB	SM4500CL F-11

(a) Sample received outside the holding time.
(b) Calculated as: (Chromium) - (Chromium, Hexavalent)
(c) Field analysis required. Received out of hold time and analyzed by request.

RL = Reporting Limit

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

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

Parameter Certification Exceptions

Job Number: JD4892
Account: GESMAW Groundwater & Environmental Services
Project: Ginn Oil, 57 Winn St, Woburn, MA

The following parameters included in this report are exceptions to NELAC certification.
The certification status of each is indicated below.

Parameter	CAS#	Method	Mat	Certification Status
Chromium, Trivalent		**SW846 6010/7196A M**	AQ	SGS is not certified for this parameter.[a]
Total Residual Chlorine		**SM4500CL F-11**	AQ	SGS is not certified for this parameter.[b]

(a) Lab cert for analyte not supported by NJDEP, OQA. Only methods/analytes required for reporting by the State of NJ can be certified in NJ. Use of this analyte for compliance must be verified through the appropriate regulatory office.
(b) Field analysis required within 15 minute holding time. Received out of holding time and analyzed by request.

Certification exceptions shown are based on the New Jersey DEP certifications. Applicability in other states may vary. Please contact your laboratory representative if additional information is required for a specific regulatory program.

GW GW

TF-031020-116

E/PN

GES

CHAIN OF CUSTODY

Client: Ginn Oil Company

RGP Samples

PAGE 1 OF 1

FED-EX Tracking #	Bottle Order Control #
132543111689	
Lab Quote #	Lab Job # JD4892

CLIENT/REPORTING INFORMATION	PROJECT INFORMATION	BILLING INFORMATION
Groundwater & Environmental Services, Inc. 1 Park Drive, Westford, MA 01886 **Project Manager:** Edward Kontos **Phone #:** 800-221-6119 PM Email: NERegion@gesonline.com fax **866-902-2187**	**Project Name:** Former Ginn Oil Facility **Project Address:** 57 Winn Street, Woburn, MA **Project PSID #:** 834511	Groundwater & Environmental Services, Inc. ges-invoices@gesonline.com ATTN: Accounts Payable **Invoice Instructions (Project #/ Phase / Task / Altorg)** 1605353///1116

Sampler(s) Name: James Wolcott

Sampler(s) Name:

REQUESTED ANALYSIS (see Test Code sheet)

number of preserved bottles

Lab Sample #	Field ID / Point of Collection (Sys_loc_code)	Depth Interval (ft)	Date Sampled	Time Sampled	Sampler	Matrix	Total # Bottles	HCl	NaOH	HNO3	H2SO4	NONE	DI Water	MEOH	ENCORE ZnS	Amber	EPA RGP Parameters (see attached list)								LAB USE ONLY
1	MW-302		3/16/20	10:40	DW	GW	24	8	1	2	2	10			1		X								
2	MW-305		3/16/20	16:30	DW	GW	11	4	1	1	2	3					X								
																									E7
																									1310
																									A3
																									V83

Turnaround Time (Business Days) Approved By (Lab PM) / Date

- Standard 14 Days ____/
- day RUSH ____/
- Other ____ ____/

Laboratory Information

Lab:
Address:
Phone:
Lab PM:
Lab PM Email:

Data Deliverable Information

- Commercial 'A' (Level 1) = Results Only
- Commercial 'B' (Level 2) = Results + QC Summary
- FULLT1 (Level 3 & 4)
- NJ Reduced = Results + QC Summary + Partial Raw Data
- Commercial 'C'
- *NJ Data of Known Quality Protocol Reporting*
- NYASP Category A
- NYASP Category B
- State Forms
- ~~EDD Format~~ (CW) 3/18/20
- Other ____

SGS-ACCUTEST MARLBOR 3/18

ALL SAMPLES RECEIVED PRESERVED AS APPLICABLE

Please Email the EQ EDD Package to ges@equisonline.com

EQEDD Name: Former Ginn Oil Facility_LabReport#.31293.EQEDD.zip

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

Relinquished By Sampler:	Date / Time:	Received By:
1 [signature]	1 3/16/2020 18:30	1 GES Stock
Relinquished By: 2 [signature]	2 3/18/2020 12:20	Received By: 2 [signature]
Relinquished By: 3 [signature]	3 3/18/20 1730	Received By: 3 [signature]
Custody Seal Number: 01904 01905 01906	Intact / Not Intact	Preserved where applicable; On Ice; Cooler Temp 1.8, 2.2, 2.1 °C IR-4

[signature] 3/18/20 1830 FedEx

Relinquished: FedEx 3/19/20 09:25 Rec'd by: [signature]

NOTE: Limited sample collected from MW305. Please call PM to determine what analysis can be run.

- Run Hex Cr + out of Hold time

JD4892: Chain of Custody

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5.2

5

SGS Sample Receipt Summary

Job Number: JD4892 **Client:** GROUNDWATER & ENVIRONMENTAL SE **Project:** GINN OIL, 57 WINN ST, WOBURN, MA

Date / Time Received: 3/18/2020 6:30:00 PM **Delivery Method:** **Airbill #'s:**

Cooler Temps (Raw Measured) °C: Cooler 1: (1.8); Cooler 2: (2.2); Cooler 3: (2.1);

Cooler Temps (Corrected) °C: Cooler 1: (1.5); Cooler 2: (1.9); Cooler 3: (1.8);

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

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

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

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

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

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

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

Comments

SM089-02 Rev. Date 12/1/16

JD4892: Chain of Custody
Page 3 of 6

SGS Sample Receipt Summary

Job Number: JD4892 **Client:** GES **Project:** Former Ginn Oil Facility

Date / Time Received: 3/18/2020 **Delivery Method:** FedEx **Airbill #'s:** 1325 4311 1689

Cooler Temps (Raw Measured) °C:

Cooler Temps (Corrected) °C:

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

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

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

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

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

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

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

Comments
-1: Received XCR and TRC volumes outside of hold time.
-2: Limited volume for all analyes except VOC. Please confirm if XCR and TRC are needed. Lab will not run as immediate analysis until confirmation.

SM089-02 Rev. Date 12/1/16

Responded to by: Beth Wasserman Response Date: 3/19/20

-1: OK to run out of HT.
-2: XCR and TRC are needed, OK to run out of HT. Proceed with limited volumes.

Job Change Order: JD4892

Requested Date:	4/3/2020	**Received Date:**	3/18/2020
Account Name:	Groundwater & Environmental Ser	**Due Date:**	4/1/2020
Project Description:	Ginn Oil, 57 Winn St, Woburn, MA	**Deliverable:**	MAMCP
C/O Initiated By:	BW **PM:** BW	**TAT (Days):**	14

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Sample #: JD4892-2 **Change:**

Dept: Cancel PHC1664

TAT: 14

MW-305

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Above Changes Per: CSR **Date/Time:** 4/3/2020 8:28:39 AM

To Client: This Change Order is confirmation of the revisions, previously discussed with the Client Service Representative.

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JD4892: Chain of Custody
Page 6 of 6

Massachusetts Department of Environmental Protection Bureau of Waste Site Cleanup	WSC-CAM	Exhibit VII A
	July 1, 2010	Revision No. 1
	Final	

Exhibit VII A-2: MassDEP Analytical Protocol Certification Form

MassDEP Analytical Protocol Certification Form

Laboratory Name:	SGS North America Inc. - Dayton	Project #:	JD4892
Project Location:	Ginn Oil, 57 Winn St, Woburn, MA	MADEP RTN	None

This form provides certifications for the following data set: list Laboratory Sample ID Numbers(s)
JD4892-1,JD4892-2

Test method: Refer to case narrative.

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

CAM Protocol (check all that apply below):

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

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

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

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

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

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

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

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

Printed Name: **Laura Degenhardt** **Date:** **06-Apr-20**

Internal Sample Tracking Chronicle

Groundwater & Environmental Services

Job No: JD4892

Ginn Oil, 57 Winn St, Woburn, MA
Project No: PSID#834511

Sample Number	Method	Analyzed	By	Prepped	By	Test Codes
JD4892-1 MW-302	Collected: 16-MAR-20 10:40 By: JDW		Received: 18-MAR-20 By: DG			
JD4892-1	SW846 7196A	19-MAR-20 22:30	EB			XCR
JD4892-1	EPA 245.1	20-MAR-20 09:58	LL	20-MAR-20	LL	HG
JD4892-1	SM2540 D-11	20-MAR-20 16:08	BM			TSS
JD4892-1	SW846 8260C BY SIM	23-MAR-20 10:59	RS			V8260SIMDIOX
JD4892-1	SM4500CL F-11	23-MAR-20 22:00	EB			TRC
JD4892-1	SW846 8270D BY SIM	26-MAR-20 05:00	CS	25-MAR-20	HW	AB8270SIMSL
JD4892-1	SW846 8270D	26-MAR-20 07:10	CS	25-MAR-20	HW	AB8270SL
JD4892-1	SM2340 C-11	26-MAR-20 13:41	MP			HRD
JD4892-1	SW846 8260C	27-MAR-20 10:39	MD			V8260SL
JD4892-1	EPA 200.7	30-MAR-20 02:58	ND	25-MAR-20	TG	CA,MG
JD4892-1	EPA 335.4/LACHAT	30-MAR-20 09:32	KI	27-MAR-20	JW	CN
JD4892-1	EPA 1664A	30-MAR-20 13:00	LX	30-MAR-20	LX	PHC1664
JD4892-1	SW846-8011	30-MAR-20 15:23	TL	24-MAR-20	NT	V8011EDB
JD4892-1	EPA 300/SW846 9056A	31-MAR-20 03:11	JW	30-MAR-20	JW	CHL
JD4892-1	EPA 608.3	31-MAR-20 17:03	TR	31-MAR-20	JF	P608PCB
JD4892-1	EPA 200.8	01-APR-20 01:49	NV	30-MAR-20	TG	ASMS,CDMS,CRMS,CUMS,NIMS, PBMS,SBMS,SEMS,ZNMS
JD4892-1	SW846 6010/7196A M	01-APR-20 01:49	NV			CR3
JD4892-1	SM4500NH3 H-11LACHAT	01-APR-20 15:59	KI	01-APR-20	KI	AMN
JD4892-1	EPA 420.4/LACHAT	02-APR-20 12:04	KI	31-MAR-20	KH	PN
JD4892-1	EPA 200.8	02-APR-20 17:49	GT	30-MAR-20	TG	FEMS
JD4892-1	EPA 200.8	02-APR-20 17:59	GT	30-MAR-20	TG	AGMS
JD4892-1	SW846 8270D BY SIM	03-APR-20 18:33	HSS	23-MAR-20	JF	AB8270SIMSL
JD4892-2 MW-305	Collected: 16-MAR-20 16:30 By: JDW		Received: 18-MAR-20 By: DG			
JD4892-2	SW846 7196A	19-MAR-20 22:30	EB			XCR
JD4892-2	EPA 245.1	20-MAR-20 10:00	LL	20-MAR-20	LL	HG
JD4892-2	SM2540 D-11	20-MAR-20 16:08	BM			TSS
JD4892-2	SW846 8260C BY SIM	23-MAR-20 10:31	RS			V8260SIMDIOX
JD4892-2	SM4500CL F-11	23-MAR-20 22:00	EB			TRC
JD4892-2	SW846 8270D BY SIM	26-MAR-20 05:19	CS	25-MAR-20	HW	AB8270SIMSL
JD4892-2	SW846 8270D	26-MAR-20 07:38	CS	25-MAR-20	HW	AB8270SL
JD4892-2	SM2340 C-11	26-MAR-20 13:44	MP			HRD
JD4892-2	SW846 8260C	27-MAR-20 10:12	MD			V8260SL
JD4892-2	EPA 200.7	30-MAR-20 03:03	ND	25-MAR-20	TG	CA,MG

Internal Sample Tracking Chronicle

Groundwater & Environmental Services

Job No: JD4892

Ginn Oil, 57 Winn St, Woburn, MA
Project No: PSID#834511

Sample Number	Method	Analyzed	By	Prepped	By	Test Codes
JD4892-2	EPA 335.4/LACHAT	30-MAR-20 09:33	KI	27-MAR-20	JW	CN
JD4892-2	SW846-8011	30-MAR-20 15:42	TL	24-MAR-20	NT	V8011EDB
JD4892-2	EPA 300/SW846 9056A	31-MAR-20 03:35	JW	30-MAR-20	JW	CHL
JD4892-2	EPA 200.8	01-APR-20 01:54	NV	30-MAR-20	TG	ASMS,CDMS,CRMS,CUMS,NIMS, PBMS,SBMS,SEMS
JD4892-2	SW846 6010/7196A M	01-APR-20 01:54	NV			CR3
JD4892-2	SM4500NH3 H-11LACHAT	01-APR-20 16:01	KI	01-APR-20	KI	AMN
JD4892-2	EPA 420.4/LACHAT	02-APR-20 12:05	KI	31-MAR-20	KH	PN
JD4892-2	EPA 200.8	02-APR-20 16:51	GT	30-MAR-20	TG	AGMS
JD4892-2	EPA 200.8	02-APR-20 17:54	GT	30-MAR-20	TG	FEMS,ZNMS
JD4892-2	EPA 608.3	06-APR-20 04:20	CP	03-APR-20	HW	P608PCB

QC Evaluation: MA MCP Limits

Job Number: JD4892
Account: Groundwater & Environmental Services
Project: Ginn Oil, 57 Winn St, Woburn, MA
Collected: 03/16/20

QC Sample ID	CAS#	Analyte	Sample Type	Result Type	Result	Units	Limits
VL9472	SW846 8260C						
VL9472-BS	64-17-5	Ethanol	BSP	REC	99	%	70-130
VL9472-BS	67-64-1	Acetone	BSP	REC	109	%	70-130
VL9472-BS	71-43-2	Benzene	BSP	REC	103	%	70-130
VL9472-BS	56-23-5	Carbon tetrachloride	BSP	REC	106	%	70-130
VL9472-BS	95-50-1	1,2-Dichlorobenzene	BSP	REC	99	%	70-130
VL9472-BS	541-73-1	1,3-Dichlorobenzene	BSP	REC	97	%	70-130
VL9472-BS	106-46-7	1,4-Dichlorobenzene	BSP	REC	96	%	70-130
VL9472-BS	75-34-3	1,1-Dichloroethane	BSP	REC	109	%	70-130
VL9472-BS	107-06-2	1,2-Dichloroethane	BSP	REC	96	%	70-130
VL9472-BS	75-35-4	1,1-Dichloroethene	BSP	REC	105	%	70-130
VL9472-BS	156-59-2	cis-1,2-Dichloroethene	BSP	REC	102	%	70-130
VL9472-BS	100-41-4	Ethylbenzene	BSP	REC	94	%	70-130
VL9472-BS	1634-04-4	Methyl Tert Butyl Ether	BSP	REC	113	%	70-130
VL9472-BS	75-09-2	Methylene chloride	BSP	REC	108	%	70-130
VL9472-BS	75-65-0	Tert Butyl Alcohol	BSP	REC	92	%	70-130
VL9472-BS	994-05-8	tert-Amyl Methyl Ether	BSP	REC	104	%	70-130
VL9472-BS	127-18-4	Tetrachloroethene	BSP	REC	97	%	70-130
VL9472-BS	108-88-3	Toluene	BSP	REC	94	%	70-130
VL9472-BS	71-55-6	1,1,1-Trichloroethane	BSP	REC	111	%	70-130
VL9472-BS	79-00-5	1,1,2-Trichloroethane	BSP	REC	97	%	70-130
VL9472-BS	79-01-6	Trichloroethene	BSP	REC	106	%	70-130
VL9472-BS	75-01-4	Vinyl chloride	BSP	REC	104	%	70-130
VL9472-BS	1330-20-7	Xylene (total)	BSP	REC	94	%	70-130
VL9472-BS	1868-53-7	Dibromofluoromethane	BSP	SURR	103	%	70-130
VL9472-BS	2037-26-5	Toluene-D8	BSP	SURR	89	%	70-130
VL9472-BS	460-00-4	4-Bromofluorobenzene	BSP	SURR	98	%	70-130
VL9472-BSD	64-17-5	Ethanol	BSD	REC	101	%	70-130
VL9472-BSD	67-64-1	Acetone	BSD	REC	111	%	70-130
VL9472-BSD	67-64-1	Acetone	BSD	RPD	2	%	20
VL9472-BSD	71-43-2	Benzene	BSD	REC	103	%	70-130
VL9472-BSD	71-43-2	Benzene	BSD	RPD	0	%	20
VL9472-BSD	56-23-5	Carbon tetrachloride	BSD	REC	106	%	70-130
VL9472-BSD	56-23-5	Carbon tetrachloride	BSD	RPD	1	%	20
VL9472-BSD	95-50-1	1,2-Dichlorobenzene	BSD	REC	104	%	70-130
VL9472-BSD	95-50-1	1,2-Dichlorobenzene	BSD	RPD	6	%	20
VL9472-BSD	541-73-1	1,3-Dichlorobenzene	BSD	REC	102	%	70-130
VL9472-BSD	541-73-1	1,3-Dichlorobenzene	BSD	RPD	5	%	20
VL9472-BSD	106-46-7	1,4-Dichlorobenzene	BSD	REC	98	%	70-130
VL9472-BSD	106-46-7	1,4-Dichlorobenzene	BSD	RPD	2	%	20
VL9472-BSD	75-34-3	1,1-Dichloroethane	BSD	REC	108	%	70-130
VL9472-BSD	75-34-3	1,1-Dichloroethane	BSD	RPD	2	%	20
VL9472-BSD	107-06-2	1,2-Dichloroethane	BSD	REC	99	%	70-130

* Sample used for QC is not from job JD4892

QC Evaluation: MA MCP Limits

Job Number: JD4892
Account: Groundwater & Environmental Services
Project: Ginn Oil, 57 Winn St, Woburn, MA
Collected: 03/16/20

QC Sample ID	CAS#	Analyte	Sample Type	Result Type	Result	Units	Limits
VL9472-BSD	107-06-2	1,2-Dichloroethane	BSD	RPD	3	%	20
VL9472-BSD	75-35-4	1,1-Dichloroethene	BSD	REC	102	%	70-130
VL9472-BSD	75-35-4	1,1-Dichloroethene	BSD	RPD	3	%	20
VL9472-BSD	156-59-2	cis-1,2-Dichloroethene	BSD	REC	100	%	70-130
VL9472-BSD	156-59-2	cis-1,2-Dichloroethene	BSD	RPD	1	%	20
VL9472-BSD	100-41-4	Ethylbenzene	BSD	REC	96	%	70-130
VL9472-BSD	100-41-4	Ethylbenzene	BSD	RPD	2	%	20
VL9472-BSD	1634-04-4	Methyl Tert Butyl Ether	BSD	REC	112	%	70-130
VL9472-BSD	1634-04-4	Methyl Tert Butyl Ether	BSD	RPD	1	%	20
VL9472-BSD	75-09-2	Methylene chloride	BSD	REC	104	%	70-130
VL9472-BSD	75-09-2	Methylene chloride	BSD	RPD	4	%	20
VL9472-BSD	75-65-0	Tert Butyl Alcohol	BSD	REC	96	%	70-130
VL9472-BSD	75-65-0	Tert Butyl Alcohol	BSD	RPD	4	%	20
VL9472-BSD	994-05-8	tert-Amyl Methyl Ether	BSD	REC	105	%	70-130
VL9472-BSD	994-05-8	tert-Amyl Methyl Ether	BSD	RPD	1	%	20
VL9472-BSD	127-18-4	Tetrachloroethene	BSD	REC	97	%	70-130
VL9472-BSD	127-18-4	Tetrachloroethene	BSD	RPD	0	%	20
VL9472-BSD	108-88-3	Toluene	BSD	REC	97	%	70-130
VL9472-BSD	108-88-3	Toluene	BSD	RPD	2	%	20
VL9472-BSD	71-55-6	1,1,1-Trichloroethane	BSD	REC	109	%	70-130
VL9472-BSD	71-55-6	1,1,1-Trichloroethane	BSD	RPD	1	%	20
VL9472-BSD	79-00-5	1,1,2-Trichloroethane	BSD	REC	100	%	70-130
VL9472-BSD	79-00-5	1,1,2-Trichloroethane	BSD	RPD	3	%	20
VL9472-BSD	79-01-6	Trichloroethene	BSD	REC	105	%	70-130
VL9472-BSD	79-01-6	Trichloroethene	BSD	RPD	1	%	20
VL9472-BSD	75-01-4	Vinyl chloride	BSD	REC	101	%	70-130
VL9472-BSD	75-01-4	Vinyl chloride	BSD	RPD	2	%	20
VL9472-BSD	1330-20-7	Xylene (total)	BSD	REC	96	%	70-130
VL9472-BSD	1330-20-7	Xylene (total)	BSD	RPD	2	%	20
VL9472-BSD	1868-53-7	Dibromofluoromethane	BSD	SURR	101	%	70-130
VL9472-BSD	2037-26-5	Toluene-D8	BSD	SURR	90	%	70-130
VL9472-BSD	460-00-4	4-Bromofluorobenzene	BSD	SURR	98	%	70-130
VL9472-MB	1868-53-7	Dibromofluoromethane	MB	SURR	99	%	70-130
VL9472-MB	2037-26-5	Toluene-D8	MB	SURR	97	%	70-130
VL9472-MB	460-00-4	4-Bromofluorobenzene	MB	SURR	96	%	70-130
JD4892-1	1868-53-7	Dibromofluoromethane	SAMP	SURR	99	%	70-130
JD4892-1	2037-26-5	Toluene-D8	SAMP	SURR	97	%	70-130
JD4892-1	460-00-4	4-Bromofluorobenzene	SAMP	SURR	93	%	70-130
JD4892-2	1868-53-7	Dibromofluoromethane	SAMP	SURR	101	%	70-130
JD4892-2	2037-26-5	Toluene-D8	SAMP	SURR	97	%	70-130
JD4892-2	460-00-4	4-Bromofluorobenzene	SAMP	SURR	94	%	70-130
OP26614A	SW846 8270D BY SIM						
OP26614A-BS12	87-86-5	Pentachlorophenol	BSP	REC	173 [a]	%	30-130

* Sample used for QC is not from job JD4892

QC Evaluation: MA MCP Limits

Job Number: JD4892
Account: Groundwater & Environmental Services
Project: Ginn Oil, 57 Winn St, Woburn, MA
Collected: 03/16/20

QC Sample ID	CAS#	Analyte	Sample Type	Result Type	Result	Units	Limits
OP26614A-BS12	83-32-9	Acenaphthene	BSP	REC	71	%	40-140
OP26614A-BS12	208-96-8	Acenaphthylene	BSP	REC	73	%	40-140
OP26614A-BS12	120-12-7	Anthracene	BSP	REC	71	%	40-140
OP26614A-BS12	56-55-3	Benzo(a)anthracene	BSP	REC	73	%	40-140
OP26614A-BS12	50-32-8	Benzo(a)pyrene	BSP	REC	56	%	40-140
OP26614A-BS12	205-99-2	Benzo(b)fluoranthene	BSP	REC	64	%	40-140
OP26614A-BS12	191-24-2	Benzo(g,h,i)perylene	BSP	REC	59	%	40-140
OP26614A-BS12	207-08-9	Benzo(k)fluoranthene	BSP	REC	72	%	40-140
OP26614A-BS12	218-01-9	Chrysene	BSP	REC	82	%	40-140
OP26614A-BS12	53-70-3	Dibenzo(a,h)anthracene	BSP	REC	57	%	40-140
OP26614A-BS12	206-44-0	Fluoranthene	BSP	REC	83	%	40-140
OP26614A-BS12	86-73-7	Fluorene	BSP	REC	80	%	40-140
OP26614A-BS12	193-39-5	Indeno(1,2,3-cd)pyrene	BSP	REC	58	%	40-140
OP26614A-BS12	91-20-3	Naphthalene	BSP	REC	77	%	40-140
OP26614A-BS12	85-01-8	Phenanthrene	BSP	REC	82	%	40-140
OP26614A-BS12	129-00-0	Pyrene	BSP	REC	78	%	40-140
OP26614A-BS12	367-12-4	2-Fluorophenol	BSP	SURR	43	%	30-130
OP26614A-BS12	4165-62-2	Phenol-d5	BSP	SURR	28	%	30-130
OP26614A-BS12	118-79-6	2,4,6-Tribromophenol	BSP	SURR	92	%	30-130
OP26614A-BS12	4165-60-0	Nitrobenzene-d5	BSP	SURR	74	%	30-130
OP26614A-BS12	321-60-8	2-Fluorobiphenyl	BSP	SURR	76	%	30-130
OP26614A-BS12	1718-51-0	Terphenyl-d14	BSP	SURR	100	%	30-130
OP26614A-BSD12	87-86-5	Pentachlorophenol	BSD	REC	146	%	30-130
OP26614A-BSD12	87-86-5	Pentachlorophenol	BSD	RPD	17	%	30
OP26614A-BSD12	83-32-9	Acenaphthene	BSD	REC	66	%	40-140
OP26614A-BSD12	83-32-9	Acenaphthene	BSD	RPD	7	%	30
OP26614A-BSD12	208-96-8	Acenaphthylene	BSD	REC	68	%	40-140
OP26614A-BSD12	208-96-8	Acenaphthylene	BSD	RPD	8	%	30
OP26614A-BSD12	120-12-7	Anthracene	BSD	REC	67	%	40-140
OP26614A-BSD12	120-12-7	Anthracene	BSD	RPD	6	%	30
OP26614A-BSD12	56-55-3	Benzo(a)anthracene	BSD	REC	51	%	40-140
OP26614A-BSD12	56-55-3	Benzo(a)anthracene	BSD	RPD	36 [b]	%	30
OP26614A-BSD12	50-32-8	Benzo(a)pyrene	BSD	REC	46	%	40-140
OP26614A-BSD12	50-32-8	Benzo(a)pyrene	BSD	RPD	19	%	30
OP26614A-BSD12	205-99-2	Benzo(b)fluoranthene	BSD	REC	48	%	40-140
OP26614A-BSD12	205-99-2	Benzo(b)fluoranthene	BSD	RPD	28	%	30
OP26614A-BSD12	191-24-2	Benzo(g,h,i)perylene	BSD	REC	43	%	40-140
OP26614A-BSD12	191-24-2	Benzo(g,h,i)perylene	BSD	RPD	31	%	30
OP26614A-BSD12	207-08-9	Benzo(k)fluoranthene	BSD	REC	54	%	40-140
OP26614A-BSD12	207-08-9	Benzo(k)fluoranthene	BSD	RPD	28	%	30
OP26614A-BSD12	218-01-9	Chrysene	BSD	REC	54	%	40-140
OP26614A-BSD12	218-01-9	Chrysene	BSD	RPD	41 [b]	%	30
OP26614A-BSD12	53-70-3	Dibenzo(a,h)anthracene	BSD	REC	39	%	40-140
OP26614A-BSD12	53-70-3	Dibenzo(a,h)anthracene	BSD	RPD	38	%	30
OP26614A-BSD12	206-44-0	Fluoranthene	BSD	REC	64	%	40-140

* Sample used for QC is not from job JD4892

QC Evaluation: MA MCP Limits

Job Number: JD4892
Account: Groundwater & Environmental Services
Project: Ginn Oil, 57 Winn St, Woburn, MA
Collected: 03/16/20

QC Sample ID	CAS#	Analyte	Sample Type	Result Type	Result	Units	Limits
OP26614A-BSD12	206-44-0	Fluoranthene	BSD	RPD	25	%	30
OP26614A-BSD12	86-73-7	Fluorene	BSD	REC	74	%	40-140
OP26614A-BSD12	86-73-7	Fluorene	BSD	RPD	8	%	30
OP26614A-BSD12	193-39-5	Indeno(1,2,3-cd)pyrene	BSD	REC	40	%	40-140
OP26614A-BSD12	193-39-5	Indeno(1,2,3-cd)pyrene	BSD	RPD	38	%	30
OP26614A-BSD12	91-20-3	Naphthalene	BSD	REC	68	%	40-140
OP26614A-BSD12	91-20-3	Naphthalene	BSD	RPD	13	%	30
OP26614A-BSD12	85-01-8	Phenanthrene	BSD	REC	79	%	40-140
OP26614A-BSD12	85-01-8	Phenanthrene	BSD	RPD	4	%	30
OP26614A-BSD12	129-00-0	Pyrene	BSD	REC	57	%	40-140
OP26614A-BSD12	129-00-0	Pyrene	BSD	RPD	32 [b]	%	30
OP26614A-BSD12	367-12-4	2-Fluorophenol	BSD	SURR	52	%	30-130
OP26614A-BSD12	4165-62-2	Phenol-d5	BSD	SURR	26	%	30-130
OP26614A-BSD12	118-79-6	2,4,6-Tribromophenol	BSD	SURR	90	%	30-130
OP26614A-BSD12	4165-60-0	Nitrobenzene-d5	BSD	SURR	64	%	30-130
OP26614A-BSD12	321-60-8	2-Fluorobiphenyl	BSD	SURR	67	%	30-130
OP26614A-BSD12	1718-51-0	Terphenyl-d14	BSD	SURR	73	%	30-130
OP26614A-MB1	367-12-4	2-Fluorophenol	MB	SURR	37	%	30-130
OP26614A-MB1	4165-62-2	Phenol-d5	MB	SURR	24	%	30-130
OP26614A-MB1	118-79-6	2,4,6-Tribromophenol	MB	SURR	86	%	30-130
OP26614A-MB1	4165-60-0	Nitrobenzene-d5	MB	SURR	68	%	30-130
OP26614A-MB1	321-60-8	2-Fluorobiphenyl	MB	SURR	70	%	30-130
OP26614A-MB1	1718-51-0	Terphenyl-d14	MB	SURR	102	%	30-130
JD4892-1	367-12-4	2-Fluorophenol	SAMP	SURR	41	%	30-130
JD4892-1	4165-62-2	Phenol-d5	SAMP	SURR	29 [c]	%	30-130
JD4892-1	118-79-6	2,4,6-Tribromophenol	SAMP	SURR	87	%	30-130
JD4892-1	4165-60-0	Nitrobenzene-d5	SAMP	SURR	77	%	30-130
JD4892-1	321-60-8	2-Fluorobiphenyl	SAMP	SURR	75	%	30-130
JD4892-1	1718-51-0	Terphenyl-d14	SAMP	SURR	79	%	30-130
OP26660	SW846 8270D						
OP26660-BS1	85-68-7	Butyl benzyl phthalate	BSP	REC	94	%	40-140
OP26660-BS1	84-74-2	Di-n-butyl phthalate	BSP	REC	88	%	40-140
OP26660-BS1	117-84-0	Di-n-octyl phthalate	BSP	REC	98	%	40-140
OP26660-BS1	84-66-2	Diethyl phthalate	BSP	REC	91	%	40-140
OP26660-BS1	131-11-3	Dimethyl phthalate	BSP	REC	89	%	40-140
OP26660-BS1	117-81-7	bis(2-Ethylhexyl)phthalate	BSP	REC	103	%	40-140
OP26660-BS1	367-12-4	2-Fluorophenol	BSP	SURR	57	%	15-110
OP26660-BS1	4165-62-2	Phenol-d5	BSP	SURR	42	%	15-110
OP26660-BS1	118-79-6	2,4,6-Tribromophenol	BSP	SURR	90	%	15-110
OP26660-BS1	4165-60-0	Nitrobenzene-d5	BSP	SURR	90	%	30-130
OP26660-BS1	321-60-8	2-Fluorobiphenyl	BSP	SURR	77	%	30-130
OP26660-BS1	1718-51-0	Terphenyl-d14	BSP	SURR	103	%	30-130
OP26660-BSD	85-68-7	Butyl benzyl phthalate	BSD	REC	80	%	40-140

* Sample used for QC is not from job JD4892

QC Evaluation: MA MCP Limits

Job Number: JD4892
Account: Groundwater & Environmental Services
Project: Ginn Oil, 57 Winn St, Woburn, MA
Collected: 03/16/20

QC Sample ID	CAS#	Analyte	Sample Type	Result Type	Result	Units	Limits
OP26660-BSD	85-68-7	Butyl benzyl phthalate	BSD	RPD	17	%	20
OP26660-BSD	84-74-2	Di-n-butyl phthalate	BSD	REC	76	%	40-140
OP26660-BSD	84-74-2	Di-n-butyl phthalate	BSD	RPD	15	%	20
OP26660-BSD	117-84-0	Di-n-octyl phthalate	BSD	REC	82	%	40-140
OP26660-BSD	117-84-0	Di-n-octyl phthalate	BSD	RPD	17	%	20
OP26660-BSD	84-66-2	Diethyl phthalate	BSD	REC	79	%	40-140
OP26660-BSD	84-66-2	Diethyl phthalate	BSD	RPD	15	%	20
OP26660-BSD	131-11-3	Dimethyl phthalate	BSD	REC	75	%	40-140
OP26660-BSD	131-11-3	Dimethyl phthalate	BSD	RPD	17	%	20
OP26660-BSD	117-81-7	bis(2-Ethylhexyl)phthalate	BSD	REC	84	%	40-140
OP26660-BSD	117-81-7	bis(2-Ethylhexyl)phthalate	BSD	RPD	21	%	20
OP26660-BSD	367-12-4	2-Fluorophenol	BSD	SURR	46	%	15-110
OP26660-BSD	4165-62-2	Phenol-d5	BSD	SURR	34	%	15-110
OP26660-BSD	118-79-6	2,4,6-Tribromophenol	BSD	SURR	78	%	15-110
OP26660-BSD	4165-60-0	Nitrobenzene-d5	BSD	SURR	78	%	30-130
OP26660-BSD	321-60-8	2-Fluorobiphenyl	BSD	SURR	69	%	30-130
OP26660-BSD	1718-51-0	Terphenyl-d14	BSD	SURR	88	%	30-130
OP26660-MB1	367-12-4	2-Fluorophenol	MB	SURR	36	%	15-110
OP26660-MB1	4165-62-2	Phenol-d5	MB	SURR	27	%	15-110
OP26660-MB1	118-79-6	2,4,6-Tribromophenol	MB	SURR	82	%	15-110
OP26660-MB1	4165-60-0	Nitrobenzene-d5	MB	SURR	82	%	30-130
OP26660-MB1	321-60-8	2-Fluorobiphenyl	MB	SURR	81	%	30-130
OP26660-MB1	1718-51-0	Terphenyl-d14	MB	SURR	83	%	30-130
JD4892-1	367-12-4	2-Fluorophenol	SAMP	SURR	33	%	15-110
JD4892-1	4165-62-2	Phenol-d5	SAMP	SURR	26	%	15-110
JD4892-1	118-79-6	2,4,6-Tribromophenol	SAMP	SURR	93	%	15-110
JD4892-1	4165-60-0	Nitrobenzene-d5	SAMP	SURR	85	%	30-130
JD4892-1	321-60-8	2-Fluorobiphenyl	SAMP	SURR	82	%	30-130
JD4892-1	1718-51-0	Terphenyl-d14	SAMP	SURR	78	%	30-130
JD4892-2	367-12-4	2-Fluorophenol	SAMP	SURR	31	%	15-110
JD4892-2	4165-62-2	Phenol-d5	SAMP	SURR	25	%	15-110
JD4892-2	118-79-6	2,4,6-Tribromophenol	SAMP	SURR	88	%	15-110
JD4892-2	4165-60-0	Nitrobenzene-d5	SAMP	SURR	83	%	30-130
JD4892-2	321-60-8	2-Fluorobiphenyl	SAMP	SURR	80	%	30-130
JD4892-2	1718-51-0	Terphenyl-d14	SAMP	SURR	65	%	30-130
OP26660A	SW846 8270D BY SIM						
OP26660A-BS12	87-86-5	Pentachlorophenol	BSP	REC	94	%	30-130
OP26660A-BS12	83-32-9	Acenaphthene	BSP	REC	76	%	40-140
OP26660A-BS12	208-96-8	Acenaphthylene	BSP	REC	76	%	40-140
OP26660A-BS12	120-12-7	Anthracene	BSP	REC	83	%	40-140
OP26660A-BS12	56-55-3	Benzo(a)anthracene	BSP	REC	93	%	40-140
OP26660A-BS12	50-32-8	Benzo(a)pyrene	BSP	REC	58	%	40-140
OP26660A-BS12	205-99-2	Benzo(b)fluoranthene	BSP	REC	72	%	40-140

* Sample used for QC is not from job JD4892

QC Evaluation: MA MCP Limits

Job Number: JD4892
Account: Groundwater & Environmental Services
Project: Ginn Oil, 57 Winn St, Woburn, MA
Collected: 03/16/20

QC Sample ID	CAS#	Analyte	Sample Type	Result Type	Result	Units	Limits
OP26660A-BS12	191-24-2	Benzo(g,h,i)perylene	BSP	REC	51	%	40-140
OP26660A-BS12	207-08-9	Benzo(k)fluoranthene	BSP	REC	66	%	40-140
OP26660A-BS12	218-01-9	Chrysene	BSP	REC	79	%	40-140
OP26660A-BS12	53-70-3	Dibenzo(a,h)anthracene	BSP	REC	45	%	40-140
OP26660A-BS12	206-44-0	Fluoranthene	BSP	REC	77	%	40-140
OP26660A-BS12	86-73-7	Fluorene	BSP	REC	79	%	40-140
OP26660A-BS12	193-39-5	Indeno(1,2,3-cd)pyrene	BSP	REC	49	%	40-140
OP26660A-BS12	91-20-3	Naphthalene	BSP	REC	76	%	40-140
OP26660A-BS12	85-01-8	Phenanthrene	BSP	REC	81	%	40-140
OP26660A-BS12	129-00-0	Pyrene	BSP	REC	83	%	40-140
OP26660A-BS12	367-12-4	2-Fluorophenol	BSP	SURR	46	%	30-130
OP26660A-BS12	4165-62-2	Phenol-d5	BSP	SURR	35	%	30-130
OP26660A-BS12	118-79-6	2,4,6-Tribromophenol	BSP	SURR	90	%	30-130
OP26660A-BS12	4165-60-0	Nitrobenzene-d5	BSP	SURR	85	%	30-130
OP26660A-BS12	321-60-8	2-Fluorobiphenyl	BSP	SURR	77	%	30-130
OP26660A-BS12	1718-51-0	Terphenyl-d14	BSP	SURR	87	%	30-130
OP26660A-BSD12	87-86-5	Pentachlorophenol	BSD	REC	85	%	30-130
OP26660A-BSD12	87-86-5	Pentachlorophenol	BSD	RPD	10	%	30
OP26660A-BSD12	83-32-9	Acenaphthene	BSD	REC	73	%	40-140
OP26660A-BSD12	83-32-9	Acenaphthene	BSD	RPD	4	%	30
OP26660A-BSD12	208-96-8	Acenaphthylene	BSD	REC	73	%	40-140
OP26660A-BSD12	208-96-8	Acenaphthylene	BSD	RPD	3	%	30
OP26660A-BSD12	120-12-7	Anthracene	BSD	REC	80	%	40-140
OP26660A-BSD12	120-12-7	Anthracene	BSD	RPD	4	%	30
OP26660A-BSD12	56-55-3	Benzo(a)anthracene	BSD	REC	100	%	40-140
OP26660A-BSD12	56-55-3	Benzo(a)anthracene	BSD	RPD	7	%	30
OP26660A-BSD12	50-32-8	Benzo(a)pyrene	BSD	REC	60	%	40-140
OP26660A-BSD12	50-32-8	Benzo(a)pyrene	BSD	RPD	5	%	30
OP26660A-BSD12	205-99-2	Benzo(b)fluoranthene	BSD	REC	75	%	40-140
OP26660A-BSD12	205-99-2	Benzo(b)fluoranthene	BSD	RPD	4	%	30
OP26660A-BSD12	191-24-2	Benzo(g,h,i)perylene	BSD	REC	53	%	40-140
OP26660A-BSD12	191-24-2	Benzo(g,h,i)perylene	BSD	RPD	4	%	30
OP26660A-BSD12	207-08-9	Benzo(k)fluoranthene	BSD	REC	72	%	40-140
OP26660A-BSD12	207-08-9	Benzo(k)fluoranthene	BSD	RPD	9	%	30
OP26660A-BSD12	218-01-9	Chrysene	BSD	REC	84	%	40-140
OP26660A-BSD12	218-01-9	Chrysene	BSD	RPD	6	%	30
OP26660A-BSD12	53-70-3	Dibenzo(a,h)anthracene	BSD	REC	47	%	40-140
OP26660A-BSD12	53-70-3	Dibenzo(a,h)anthracene	BSD	RPD	4	%	30
OP26660A-BSD12	206-44-0	Fluoranthene	BSD	REC	79	%	40-140
OP26660A-BSD12	206-44-0	Fluoranthene	BSD	RPD	2	%	30
OP26660A-BSD12	86-73-7	Fluorene	BSD	REC	81	%	40-140
OP26660A-BSD12	86-73-7	Fluorene	BSD	RPD	2	%	30
OP26660A-BSD12	193-39-5	Indeno(1,2,3-cd)pyrene	BSD	REC	51	%	40-140
OP26660A-BSD12	193-39-5	Indeno(1,2,3-cd)pyrene	BSD	RPD	2	%	30
OP26660A-BSD12	91-20-3	Naphthalene	BSD	REC	73	%	40-140

* Sample used for QC is not from job JD4892

QC Evaluation: MA MCP Limits

Job Number: JD4892
Account: Groundwater & Environmental Services
Project: Ginn Oil, 57 Winn St, Woburn, MA
Collected: 03/16/20

QC Sample ID	CAS#	Analyte	Sample Type	Result Type	Result	Units	Limits
OP26660A-BSD12	91-20-3	Naphthalene	BSD	RPD	4	%	30
OP26660A-BSD12	85-01-8	Phenanthrene	BSD	REC	80	%	40-140
OP26660A-BSD12	85-01-8	Phenanthrene	BSD	RPD	1	%	30
OP26660A-BSD12	129-00-0	Pyrene	BSD	REC	86	%	40-140
OP26660A-BSD12	129-00-0	Pyrene	BSD	RPD	4	%	30
OP26660A-BSD12	367-12-4	2-Fluorophenol	BSD	SURR	45	%	30-130
OP26660A-BSD12	4165-62-2	Phenol-d5	BSD	SURR	33	%	30-130
OP26660A-BSD12	118-79-6	2,4,6-Tribromophenol	BSD	SURR	93	%	30-130
OP26660A-BSD12	4165-60-0	Nitrobenzene-d5	BSD	SURR	82	%	30-130
OP26660A-BSD12	321-60-8	2-Fluorobiphenyl	BSD	SURR	76	%	30-130
OP26660A-BSD12	1718-51-0	Terphenyl-d14	BSD	SURR	94	%	30-130
OP26660A-MB1	367-12-4	2-Fluorophenol	MB	SURR	41	%	30-130
OP26660A-MB1	4165-62-2	Phenol-d5	MB	SURR	29	%	30-130
OP26660A-MB1	118-79-6	2,4,6-Tribromophenol	MB	SURR	91	%	30-130
OP26660A-MB1	4165-60-0	Nitrobenzene-d5	MB	SURR	82	%	30-130
OP26660A-MB1	321-60-8	2-Fluorobiphenyl	MB	SURR	73	%	30-130
OP26660A-MB1	1718-51-0	Terphenyl-d14	MB	SURR	89	%	30-130
JD4892-1	367-12-4	2-Fluorophenol	SAMP	SURR	37	%	30-130
JD4892-1	4165-62-2	Phenol-d5	SAMP	SURR	26 [c]	%	30-130
JD4892-1	118-79-6	2,4,6-Tribromophenol	SAMP	SURR	84	%	30-130
JD4892-1	4165-60-0	Nitrobenzene-d5	SAMP	SURR	78	%	30-130
JD4892-1	321-60-8	2-Fluorobiphenyl	SAMP	SURR	72	%	30-130
JD4892-1	1718-51-0	Terphenyl-d14	SAMP	SURR	79	%	30-130
JD4892-2	367-12-4	2-Fluorophenol	SAMP	SURR	33	%	30-130
JD4892-2	4165-62-2	Phenol-d5	SAMP	SURR	23	%	30-130
JD4892-2	118-79-6	2,4,6-Tribromophenol	SAMP	SURR	80	%	30-130
JD4892-2	4165-60-0	Nitrobenzene-d5	SAMP	SURR	68	%	30-130
JD4892-2	321-60-8	2-Fluorobiphenyl	SAMP	SURR	69	%	30-130
JD4892-2	1718-51-0	Terphenyl-d14	SAMP	SURR	68	%	30-130

(a) High percent recoveries and no associated positive found in the QC batch.
(b) Outside of in house control limits.
(c) Outside of program requirements.

* Sample used for QC is not from job JD4892

MS Volatiles

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QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries
- Internal Standard Area Summaries
- Surrogate Recovery Summaries

Method Blank Summary

Job Number: JD4892
Account: GESMAW Groundwater & Environmental Services
Project: Ginn Oil, 57 Winn St, Woburn, MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V3A7110-MB	3A163891.D	1	03/23/20	RS	n/a	n/a	V3A7110

The QC reported here applies to the following samples: **Method:** SW846 8260C BY SIM

JD4892-1, JD4892-2

CAS No.	Compound	Result	RL	Units	Q
123-91-1	1,4-Dioxane	ND	0.40	ug/l	

CAS No.	Surrogate Recoveries		Limits
17647-74-4	1,4-Dioxane-d8	112%	25-195%

Method Blank Summary

Job Number: JD4892
Account: GESMAW Groundwater & Environmental Services
Project: Ginn Oil, 57 Winn St, Woburn, MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VL9472-MB	L320812.D	1	03/27/20	MD	n/a	n/a	VL9472

The QC reported here applies to the following samples: **Method:** SW846 8260C

JD4892-1, JD4892-2

CAS No.	Compound	Result	RL	Units	Q
64-17-5	Ethanol	ND	100	ug/l	
67-64-1	Acetone	ND	10	ug/l	
71-43-2	Benzene	ND	0.50	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	ug/l	
100-41-4	Ethylbenzene	ND	1.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	ug/l	
75-09-2	Methylene chloride	ND	2.0	ug/l	
75-65-0	Tert Butyl Alcohol	ND	10	ug/l	
994-05-8	tert-Amyl Methyl Ether	ND	2.0	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	ug/l	
108-88-3	Toluene	ND	1.0	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	ug/l	
79-01-6	Trichloroethene	ND	1.0	ug/l	
75-01-4	Vinyl chloride	ND	1.0	ug/l	
1330-20-7	Xylene (total)	ND	1.0	ug/l	

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	99%	80-120%
17060-07-0	1,2-Dichloroethane-D4	91%	81-124%
2037-26-5	Toluene-D8	97%	80-120%
460-00-4	4-Bromofluorobenzene	96%	80-120%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/l	

Blank Spike/Blank Spike Duplicate Summary

Job Number: JD4892
Account: GESMAW Groundwater & Environmental Services
Project: Ginn Oil, 57 Winn St, Woburn, MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V3A7110-BS	3A163888.D	1	03/23/20	RS	n/a	n/a	V3A7110
V3A7110-BSD	3A163889.D	1	03/23/20	RS	n/a	n/a	V3A7110

The QC reported here applies to the following samples: **Method:** SW846 8260C BY SIM

JD4892-1, JD4892-2

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	BSD ug/l	BSD %	RPD	Limits Rec/RPD
123-91-1	1,4-Dioxane	20	17.4	87	19.9	100	13	48-137/32

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
17647-74-4	1,4-Dioxane-d8	93%	107%	25-195%

* = Outside of Control Limits.

Blank Spike/Blank Spike Duplicate Summary

Job Number: JD4892
Account: GESMAW Groundwater & Environmental Services
Project: Ginn Oil, 57 Winn St, Woburn, MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VL9472-BS	L320809.D	1	03/27/20	MD	n/a	n/a	VL9472
VL9472-BSD	L320810.D	1	03/27/20	MD	n/a	n/a	VL9472

The QC reported here applies to the following samples: **Method:** SW846 8260C

JD4892-1, JD4892-2

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	BSD ug/l	BSD %	RPD	Limits Rec/RPD
64-17-5	Ethanol	5000	4960	99	5060	101	2	54-155/20
67-64-1	Acetone	200	218	109	222	111	2	42-150/22
71-43-2	Benzene	50	51.4	103	51.3	103	0	80-120/20
56-23-5	Carbon tetrachloride	50	53.1	106	52.8	106	1	75-135/20
95-50-1	1,2-Dichlorobenzene	50	49.3	99	52.2	104	6	84-119/20
541-73-1	1,3-Dichlorobenzene	50	48.3	97	50.9	102	5	81-117/20
106-46-7	1,4-Dichlorobenzene	50	48.1	96	49.2	98	2	82-117/20
75-34-3	1,1-Dichloroethane	50	54.7	109	53.8	108	2	79-120/20
107-06-2	1,2-Dichloroethane	50	48.2	96	49.6	99	3	78-126/20
75-35-4	1,1-Dichloroethene	50	52.7	105	51.1	102	3	69-126/20
156-59-2	cis-1,2-Dichloroethene	50	50.8	102	50.2	100	1	80-120/20
100-41-4	Ethylbenzene	50	47.2	94	48.1	96	2	80-120/20
1634-04-4	Methyl Tert Butyl Ether	50	56.6	113	56.0	112	1	80-119/20
75-09-2	Methylene chloride	50	53.8	108	51.8	104	4	77-120/20
75-65-0	Tert Butyl Alcohol	250	231	92	240	96	4	78-126/20
994-05-8	tert-Amyl Methyl Ether	50	52.0	104	52.4	105	1	81-124/20
127-18-4	Tetrachloroethene	50	48.7	97	48.7	97	0	70-131/20
108-88-3	Toluene	50	47.2	94	48.3	97	2	80-120/20
71-55-6	1,1,1-Trichloroethane	50	55.3	111	54.6	109	1	81-128/20
79-00-5	1,1,2-Trichloroethane	50	48.5	97	49.8	100	3	83-118/20
79-01-6	Trichloroethene	50	53.2	106	52.7	105	1	80-120/20
75-01-4	Vinyl chloride	50	51.9	104	50.7	101	2	51-135/20
1330-20-7	Xylene (total)	150	141	94	144	96	2	80-120/20

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
1868-53-7	Dibromofluoromethane	103%	101%	80-120%
17060-07-0	1,2-Dichloroethane-D4	97%	95%	81-124%
2037-26-5	Toluene-D8	89%	90%	80-120%
460-00-4	4-Bromofluorobenzene	98%	98%	80-120%

* = Outside of Control Limits.

Internal Standard Area Summary

Job Number: JD4892
Account: GESMAW Groundwater & Environmental Services
Project: Ginn Oil, 57 Winn St, Woburn, MA

Check Std:	V3A7110-CC6923	**Injection Date:**	03/23/20
Lab File ID:	3A163887.D	**Injection Time:**	08:03
Instrument ID:	GCMS3A	**Method:**	SW846 8260C BY SIM

	IS 1 AREA	RT
Check Std	12451	15.77
Upper Limit [a]	24902	16.27
Lower Limit [b]	6226	15.27

Lab Sample ID	IS 1 AREA	RT
V3A7110-BS	11938	15.77
V3A7110-BSD	12003	15.77
V3A7110-MB	11653	15.77
JD4892-2	9418	15.77
JD4892-1	8949	15.77
JD4972-1	10549	15.77
ZZZZZZ	10730	15.77
ZZZZZZ	10375	15.77
ZZZZZZ	10353	15.77
ZZZZZZ	9841	15.77
ZZZZZZ	9292	15.77
JD4972-1MS	11050	15.78
JD4972-1MSD	11172	15.78

IS 1 = 4-Bromofluorobenzene

(a) Upper Limit = + 100% of check standard area; Retention time + 0.5 minutes.
(b) Lower Limit = -50% of check standard area; Retention time -0.5 minutes.

Internal Standard Area Summary

Job Number: JD4892
Account: GESMAW Groundwater & Environmental Services
Project: Ginn Oil, 57 Winn St, Woburn, MA

Check Std:	VL9472-CC9447	**Injection Date:**	03/27/20
Lab File ID:	L320808.D	**Injection Time:**	07:18
Instrument ID:	GCMSL	**Method:**	SW846 8260C

	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT	IS 5 AREA	RT
Check Std	135620	3.05	138387	4.27	212364	4.83	186662	7.22	78562	9.42
Upper Limit [a]	271240	3.55	276774	4.77	424728	5.33	373324	7.72	157124	9.92
Lower Limit [b]	67810	2.55	69194	3.77	106182	4.33	93331	6.72	39281	8.92

Lab Sample ID	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT	IS 5 AREA	RT
VL9472-BS	118995	3.05	127273	4.26	198120	4.83	181792	7.22	75447	9.41
VL9472-BSD	116678	3.05	126504	4.26	193928	4.83	177317	7.22	72648	9.41
VL9472-MB	144488	3.05	158918	4.26	237265	4.83	203836	7.22	88208	9.41
JD4892-2 [c]	154043	3.05	158904	4.26	239481	4.83	206306	7.22	91573	9.41
JD4892-1	141424	3.05	156364	4.26	229964	4.83	199522	7.22	89103	9.41
JD5012-2	138096	3.04	152551	4.26	228440	4.83	196956	7.22	87251	9.41
ZZZZZZ	136765	3.04	150542	4.26	222817	4.83	193750	7.22	86598	9.41
ZZZZZZ	147874	3.04	151553	4.26	230297	4.82	201140	7.22	89247	9.41
JD5012-2MS	117041	3.05	122235	4.26	190928	4.83	176541	7.22	73356	9.41
JD5012-2MSD	110859	3.04	121847	4.26	187482	4.82	175380	7.22	72357	9.41
ZZZZZZ	148041	3.04	158311	4.26	236419	4.83	205886	7.22	91543	9.41
ZZZZZZ	143906	3.04	156078	4.26	230370	4.83	199149	7.22	88011	9.41
ZZZZZZ	138188	3.04	151957	4.26	230152	4.83	202871	7.22	88652	9.41
ZZZZZZ	143819	3.05	151041	4.26	225657	4.83	196514	7.22	86429	9.41
ZZZZZZ	146301	3.04	151726	4.26	228660	4.83	197145	7.22	87652	9.41
ZZZZZZ	144313	3.05	138887	4.26	221245	4.83	192024	7.22	85748	9.41

IS 1 = Tert Butyl Alcohol-D9
IS 2 = Pentafluorobenzene
IS 3 = 1,4-Difluorobenzene
IS 4 = Chlorobenzene-D5
IS 5 = 1,4-Dichlorobenzene-d4

(a) Upper Limit = + 100% of check standard area; Retention time + 0.5 minutes.
(b) Lower Limit = -50% of check standard area; Retention time -0.5 minutes.
(c) Sample analyzed with head-space vial due to limited vials provided.

Surrogate Recovery Summary

Job Number: JD4892
Account: GESMAW Groundwater & Environmental Services
Project: Ginn Oil, 57 Winn St, Woburn, MA

Method: SW846 8260C BY SIM **Matrix:** AQ

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1
JD4892-1	3A163893.D	117
JD4892-2	3A163892.D	125
V3A7110-BS	3A163888.D	93
V3A7110-BSD	3A163889.D	107
V3A7110-MB	3A163891.D	112

Surrogate Compounds	Recovery Limits
S1 = 1,4-Dioxane-d8	25-195%

Surrogate Recovery Summary

Job Number: JD4892
Account: GESMAW Groundwater & Environmental Services
Project: Ginn Oil, 57 Winn St, Woburn, MA

Method: SW846 8260C **Matrix:** AQ

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1	S2	S3	S4
JD4892-1	L320814.D	99	93	97	93
JD4892-2	L320813.D	101	95	97	94
VL9472-BS	L320809.D	103	97	89	98
VL9472-BSD	L320810.D	101	95	90	98
VL9472-MB	L320812.D	99	91	97	96

Surrogate Compounds	Recovery Limits
S1 = Dibromofluoromethane	80-120%
S2 = 1,2-Dichloroethane-D4	81-124%
S3 = Toluene-D8	80-120%
S4 = 4-Bromofluorobenzene	80-120%

MS Semi-volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries
- Internal Standard Area Summaries
- Surrogate Recovery Summaries

Method Blank Summary

Job Number: JD4892
Account: GESMAW Groundwater & Environmental Services
Project: Ginn Oil, 57 Winn St, Woburn, MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP26660-MB1	M164729.D	1	03/26/20	CS	03/25/20	OP26660	EM6974

The QC reported here applies to the following samples: **Method:** SW846 8270D

JD4892-1, JD4892-2

CAS No.	Compound	Result	RL	Units	Q
85-68-7	Butyl benzyl phthalate	ND	2.0	ug/l	
84-74-2	Di-n-butyl phthalate	ND	2.0	ug/l	
117-84-0	Di-n-octyl phthalate	ND	2.0	ug/l	
84-66-2	Diethyl phthalate	ND	2.0	ug/l	
131-11-3	Dimethyl phthalate	ND	2.0	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	ND	2.0	ug/l	

CAS No.	Surrogate Recoveries		Limits
367-12-4	2-Fluorophenol	36%	10-73%
4165-62-2	Phenol-d5	27%	10-64%
118-79-6	2,4,6-Tribromophenol	82%	31-130%
4165-60-0	Nitrobenzene-d5	82%	28-126%
321-60-8	2-Fluorobiphenyl	81%	26-114%
1718-51-0	Terphenyl-d14	83%	16-122%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	System artifact/aldol-condensation	2.40	19	ug/l	J
	Internal standard added for SIM test	3.93	4.7	ug/l	J
	Internal standard added for SIM test	5.48	6	ug/l	J
	Internal standard added for SIM test	7.44	5.4	ug/l	J
	Internal standard added for SIM test	11.24	5.4	ug/l	J
	Internal standard added for SIM test	16.47	4.9	ug/l	J
	Total TIC, Semi-Volatile		0	ug/l	

Method Blank Summary

Job Number: JD4892
Account: GESMAW Groundwater & Environmental Services
Project: Ginn Oil, 57 Winn St, Woburn, MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP26614A-MB1	4M91428.D	1	03/25/20	CS	03/23/20	OP26614A	E4M4226

The QC reported here applies to the following samples: **Method:** SW846 8270D BY SIM

JD4892-1

CAS No.	Compound	Result	RL	Units	Q
87-86-5	Pentachlorophenol	ND	0.25	ug/l	
83-32-9	Acenaphthene	ND	0.10	ug/l	
208-96-8	Acenaphthylene	ND	0.10	ug/l	
120-12-7	Anthracene	ND	0.10	ug/l	
56-55-3	Benzo(a)anthracene	ND	0.050	ug/l	
50-32-8	Benzo(a)pyrene	ND	0.050	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	0.050	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	0.10	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	0.10	ug/l	
218-01-9	Chrysene	ND	0.10	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	0.10	ug/l	
206-44-0	Fluoranthene	ND	0.10	ug/l	
86-73-7	Fluorene	ND	0.10	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.10	ug/l	
91-20-3	Naphthalene	0.0624	0.10	ug/l	J
85-01-8	Phenanthrene	ND	0.050	ug/l	
129-00-0	Pyrene	ND	0.10	ug/l	

CAS No.	Surrogate Recoveries		Limits
367-12-4	2-Fluorophenol	37%	15-110%
4165-62-2	Phenol-d5	24%	12-110%
118-79-6	2,4,6-Tribromophenol	86%	32-143%
4165-60-0	Nitrobenzene-d5	68%	29-124%
321-60-8	2-Fluorobiphenyl	70%	23-122%
1718-51-0	Terphenyl-d14	102%	22-130%

Method Blank Summary

Job Number: JD4892
Account: GESMAW Groundwater & Environmental Services
Project: Ginn Oil, 57 Winn St, Woburn, MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP26660A-MB1	3P83824.D	1	03/25/20	CS	03/25/20	OP26660A	E3P3927

The QC reported here applies to the following samples: **Method:** SW846 8270D BY SIM

JD4892-2

CAS No.	Compound	Result	RL	Units	Q
87-86-5	Pentachlorophenol	ND	0.25	ug/l	
83-32-9	Acenaphthene	ND	0.10	ug/l	
208-96-8	Acenaphthylene	ND	0.10	ug/l	
120-12-7	Anthracene	ND	0.10	ug/l	
56-55-3	Benzo(a)anthracene	ND	0.050	ug/l	
50-32-8	Benzo(a)pyrene	ND	0.050	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	0.050	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	0.10	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	0.10	ug/l	
218-01-9	Chrysene	ND	0.10	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	0.10	ug/l	
206-44-0	Fluoranthene	ND	0.10	ug/l	
86-73-7	Fluorene	ND	0.10	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.10	ug/l	
91-20-3	Naphthalene	ND	0.10	ug/l	
85-01-8	Phenanthrene	ND	0.050	ug/l	
129-00-0	Pyrene	ND	0.10	ug/l	

CAS No.	Surrogate Recoveries		Limits
367-12-4	2-Fluorophenol	41%	15-110%
4165-62-2	Phenol-d5	29%	12-110%
118-79-6	2,4,6-Tribromophenol	91%	32-143%
4165-60-0	Nitrobenzene-d5	82%	29-124%
321-60-8	2-Fluorobiphenyl	73%	23-122%
1718-51-0	Terphenyl-d14	89%	22-130%

Blank Spike/Blank Spike Duplicate Summary

Job Number: JD4892
Account: GESMAW Groundwater & Environmental Services
Project: Ginn Oil, 57 Winn St, Woburn, MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP26660-BS1	M164730.D	1	03/26/20	CS	03/25/20	OP26660	EM6974
OP26660-BSD	M164731.D	1	03/26/20	CS	03/25/20	OP26660	EM6974

The QC reported here applies to the following samples: **Method:** SW846 8270D

JD4892-1, JD4892-2

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	BSD ug/l	BSD %	RPD	Limits Rec/RPD
85-68-7	Butyl benzyl phthalate	50	47.1	94	39.8	80	17	49-121/29
84-74-2	Di-n-butyl phthalate	50	43.9	88	37.9	76	15	50-122/29
117-84-0	Di-n-octyl phthalate	50	48.8	98	41.2	82	17	40-127/28
84-66-2	Diethyl phthalate	50	45.6	91	39.3	79	15	49-117/28
131-11-3	Dimethyl phthalate	50	44.4	89	37.5	75	17	49-114/28
117-81-7	bis(2-Ethylhexyl)phthalate	50	51.5	103	41.9	84	21	44-127/29

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
367-12-4	2-Fluorophenol	57%	46%	10-73%
4165-62-2	Phenol-d5	42%	34%	10-64%
118-79-6	2,4,6-Tribromophenol	90%	78%	31-130%
4165-60-0	Nitrobenzene-d5	90%	78%	28-126%
321-60-8	2-Fluorobiphenyl	77%	69%	26-114%
1718-51-0	Terphenyl-d14	103%	88%	16-122%

* = Outside of Control Limits.

Blank Spike/Blank Spike Duplicate Summary

Job Number: JD4892
Account: GESMAW Groundwater & Environmental Services
Project: Ginn Oil, 57 Winn St, Woburn, MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP26614A-BS12	4M91429.D	1	03/25/20	CS	03/23/20	OP26614A	E4M4226
OP26614A-BSD12	4M91430.D	1	03/25/20	CS	03/23/20	OP26614A	E4M4226

The QC reported here applies to the following samples: **Method:** SW846 8270D BY SIM

JD4892-1

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	BSD ug/l	BSD %	RPD	Limits Rec/RPD
87-86-5	Pentachlorophenol	5	8.65	173* [a]	7.29	146	17	10-169/37
83-32-9	Acenaphthene	1	0.707	71	0.660	66	7	31-135/38
208-96-8	Acenaphthylene	1	0.732	73	0.678	68	8	28-130/42
120-12-7	Anthracene	1	0.708	71	0.668	67	6	40-125/32
56-55-3	Benzo(a)anthracene	1	0.734	73	0.508	51	36* [b]	38-132/31
50-32-8	Benzo(a)pyrene	1	0.555	56	0.457	46	19	31-110/37
205-99-2	Benzo(b)fluoranthene	1	0.635	64	0.478	48	28	31-113/37
191-24-2	Benzo(g,h,i)perylene	1	0.593	59	0.434	43	31	18-110/54
207-08-9	Benzo(k)fluoranthene	1	0.719	72	0.543	54	28	31-119/43
218-01-9	Chrysene	1	0.815	82	0.536	54	41* [b]	43-119/33
53-70-3	Dibenzo(a,h)anthracene	1	0.572	57	0.390	39	38	20-112/50
206-44-0	Fluoranthene	1	0.825	83	0.644	64	25	48-118/27
86-73-7	Fluorene	1	0.795	80	0.737	74	8	42-123/34
193-39-5	Indeno(1,2,3-cd)pyrene	1	0.583	58	0.396	40	38	18-113/49
91-20-3	Naphthalene	1	0.767	77	0.676	68	13	30-114/40
85-01-8	Phenanthrene	1	0.818	82	0.789	79	4	45-125/31
129-00-0	Pyrene	1	0.778	78	0.565	57	32* [b]	48-125/29

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
367-12-4	2-Fluorophenol	43%	52%	15-110%
4165-62-2	Phenol-d5	28%	26%	12-110%
118-79-6	2,4,6-Tribromophenol	92%	90%	32-143%
4165-60-0	Nitrobenzene-d5	74%	64%	29-124%
321-60-8	2-Fluorobiphenyl	76%	67%	23-122%
1718-51-0	Terphenyl-d14	100%	73%	22-130%

(a) High percent recoveries and no associated positive found in the QC batch.
(b) Outside of in house control limits.

* = Outside of Control Limits.

Blank Spike/Blank Spike Duplicate Summary

Job Number: JD4892
Account: GESMAW Groundwater & Environmental Services
Project: Ginn Oil, 57 Winn St, Woburn, MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP26660A-BS12	3P83825.D	1	03/26/20	CS	03/25/20	OP26660A	E3P3927
OP26660A-BSD12	3P83826.D	1	03/26/20	CS	03/25/20	OP26660A	E3P3927

The QC reported here applies to the following samples: **Method:** SW846 8270D BY SIM

JD4892-2

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	BSD ug/l	BSD %	RPD	Limits Rec/RPD
87-86-5	Pentachlorophenol	5	4.68	94	4.24	85	10	10-169/37
83-32-9	Acenaphthene	1	0.763	76	0.731	73	4	31-135/38
208-96-8	Acenaphthylene	1	0.757	76	0.732	73	3	28-130/42
120-12-7	Anthracene	1	0.827	83	0.796	80	4	40-125/32
56-55-3	Benzo(a)anthracene	1	0.928	93	1.00	100	7	38-132/31
50-32-8	Benzo(a)pyrene	1	0.575	58	0.603	60	5	31-110/37
205-99-2	Benzo(b)fluoranthene	1	0.719	72	0.746	75	4	31-113/37
191-24-2	Benzo(g,h,i)perylene	1	0.506	51	0.527	53	4	18-110/54
207-08-9	Benzo(k)fluoranthene	1	0.659	66	0.719	72	9	31-119/43
218-01-9	Chrysene	1	0.794	79	0.843	84	6	43-119/33
53-70-3	Dibenzo(a,h)anthracene	1	0.453	45	0.471	47	4	20-112/50
206-44-0	Fluoranthene	1	0.774	77	0.788	79	2	48-118/27
86-73-7	Fluorene	1	0.788	79	0.807	81	2	42-123/34
193-39-5	Indeno(1,2,3-cd)pyrene	1	0.494	49	0.506	51	2	18-113/49
91-20-3	Naphthalene	1	0.757	76	0.727	73	4	30-114/40
85-01-8	Phenanthrene	1	0.811	81	0.804	80	1	45-125/31
129-00-0	Pyrene	1	0.826	83	0.857	86	4	48-125/29

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
367-12-4	2-Fluorophenol	46%	45%	15-110%
4165-62-2	Phenol-d5	35%	33%	12-110%
118-79-6	2,4,6-Tribromophenol	90%	93%	32-143%
4165-60-0	Nitrobenzene-d5	85%	82%	29-124%
321-60-8	2-Fluorobiphenyl	77%	76%	23-122%
1718-51-0	Terphenyl-d14	87%	94%	22-130%

* = Outside of Control Limits.

Internal Standard Area Summary

Job Number: JD4892
Account: GESMAW Groundwater & Environmental Services
Project: Ginn Oil, 57 Winn St, Woburn, MA

Check Std:	E3P3927-CC3913	**Injection Date:**	03/25/20
Lab File ID:	3P83816.D	**Injection Time:**	21:10
Instrument ID:	GCMS3P	**Method:**	SW846 8270D BY SIM

	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT
Check Std	61173	6.73	76457	8.18	110710	10.28	76431	12.92
Upper Limit [a]	122346	7.23	152914	8.68	221420	10.78	152862	13.42
Lower Limit [b]	30587	6.23	38229	7.68	55355	9.78	38216	12.42

Lab Sample ID	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT
OP26644A-MB1	49406	6.73	62936	8.18	90333	10.28	65958	12.93
OP26601A-MB1	59039	6.73	74738	8.18	108728	10.28	75882	12.92
ZZZZZZ	53821	6.73	66986	8.18	97381	10.28	63629	12.92
OP26644A-BS12	48750	6.73	62079	8.18	92917	10.28	64518	12.92
OP26644A-BSD12	54140	6.73	68896	8.18	98038	10.28	66051	12.92
OP26526-MB1	52987	6.73	66908	8.18	97903	10.28	66184	12.93
OP26452A-MB1	56842	6.73	73052	8.18	105296	10.28	76742	12.93
OP26660A-MB1	51350	6.73	65109	8.18	103182	10.28	71350	12.93
OP26660A-BS12	61120	6.73	77514	8.18	112233	10.28	74601	12.93
OP26660A-BSD12	57739	6.73	73693	8.18	111802	10.28	76488	12.93
ZZZZZZ	55471	6.73	70194	8.18	98120	10.28	66621	12.93
ZZZZZZ	57993	6.73	74222	8.18	108030	10.28	72875	12.93
ZZZZZZ	52887	6.73	67129	8.18	97156	10.28	66111	12.93
ZZZZZZ	51927	6.73	68038	8.18	96750	10.28	65635	12.93
ZZZZZZ	57878	6.73	69611	8.18	103812	10.28	73274	12.93
ZZZZZZ	56775	6.73	73471	8.18	103653	10.28	72664	12.93
ZZZZZZ	62218	6.73	75428	8.18	101648	10.28	70397	12.93
ZZZZZZ	50861	6.73	65035	8.18	96936	10.28	67219	12.93
ZZZZZZ	52535	6.73	65130	8.18	99464	10.28	65744	12.93
ZZZZZZ	49406	6.73	65319	8.18	91440	10.28	65329	12.93
ZZZZZZ	53719	6.73	62487	8.18	100905	10.28	66560	12.93
ZZZZZZ	46326	6.73	57333	8.18	86168	10.28	63203	12.93
ZZZZZZ	49374	6.73	62051	8.18	94514	10.28	64023	12.93
JD4892-1 [c]	48187	6.73	62702	8.18	86839	10.28	62650	12.93
JD4892-2 [d]	55870	6.73	65743	8.18	93529	10.29	70166	12.93
ZZZZZZ	63112	6.73	75769	8.18	117533	10.28	79848	12.93
ZZZZZZ	59033	6.73	69057	8.19	122560	10.29	74095	12.93
ZZZZZZ	50902	6.73	65866	8.19	118396	10.30	78841	12.94

IS 1 = 1-Methylnaphthalene-d10
IS 2 = Fluorene-d10
IS 3 = Fluoranthene-d10
IS 4 = Benzo(a)pyrene-d12

(a) Upper Limit = + 100% of check standard area; Retention time + 0.5 minutes.

Internal Standard Area Summary

Job Number: JD4892
Account: GESMAW Groundwater & Environmental Services
Project: Ginn Oil, 57 Winn St, Woburn, MA

Check Std:	E3P3927-CC3913	**Injection Date:**	03/25/20
Lab File ID:	3P83816.D	**Injection Time:**	21:10
Instrument ID:	GCMS3P	**Method:**	SW846 8270D BY SIM

Lab Sample ID	IS 1 AREA	IS 1 RT	IS 2 AREA	IS 2 RT	IS 3 AREA	IS 3 RT	IS 4 AREA	IS 4 RT

(b) Lower Limit = -50% of check standard area; Retention time -0.5 minutes.
(c) Sample extracted outside the holding time. Confirmation run.
(d) Sample extracted outside the holding time.

Internal Standard Area Summary

Job Number: JD4892
Account: GESMAW Groundwater & Environmental Services
Project: Ginn Oil, 57 Winn St, Woburn, MA

Check Std:	E4M4226-CC4206	**Injection Date:**	03/25/20
Lab File ID:	4M91426.D	**Injection Time:**	01:12
Instrument ID:	GCMS4M	**Method:**	SW846 8270D BY SIM

	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT
Check Std	91274	6.98	69935	8.44	113321	10.56	85996	13.23
Upper Limit [a]	182548	7.48	139870	8.94	226642	11.06	171992	13.73
Lower Limit [b]	45637	6.48	34968	7.94	56661	10.06	42998	12.73

Lab Sample ID	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT
OP26614A-MB1	55640	6.98	57702	8.45	92805	10.56	69309	13.25
OP26614A-BS12	56858	6.98	60341	8.45	134576	10.56	103252	13.25
OP26614A-BSD12	56901	6.98	55630	8.45	110616	10.56	70970	13.25
ZZZZZZ	50154	6.98	70065	8.45	90298	10.56	66895	13.25
ZZZZZZ	51071	6.98	56981	8.45	95841	10.56	73576	13.25
ZZZZZZ	56033	6.98	61147	8.45	99205	10.56	75966	13.25
ZZZZZZ	55991	6.99	57956	8.45	96002	10.57	77490	13.25
ZZZZZZ	56939	6.98	130531	8.45	106064	10.57	83362	13.26
ZZZZZZ	54786	6.98	64265	8.45	103257	10.57	82713	13.26
ZZZZZZ	84651	7.01	70079	8.42	100818	10.61	112228	13.27
ZZZZZZ	78157	6.99	86630	8.45	145345	10.57	112686	13.25
ZZZZZZ	50547	6.99	57776	8.45	94286	10.57	76699	13.26
ZZZZZZ	55872	6.99	61389	8.45	101584	10.57	80824	13.26
ZZZZZZ	50505	6.99	56999	8.45	95141	10.57	75807	13.26
ZZZZZZ	52329	6.99	67150	8.45	98039	10.57	78569	13.26
ZZZZZZ	54010	6.99	62181	8.45	104155	10.57	77619	13.26
ZZZZZZ	57377	6.99	60787	8.45	101727	10.57	79902	13.26
ZZZZZZ	50096	6.99	60022	8.45	98442	10.57	78212	13.26
ZZZZZZ	55262	6.99	62188	8.45	103658	10.57	81374	13.26
ZZZZZZ	57473	6.99	68422	8.46	117878	10.60	81428	13.27

IS 1 = 1-Methylnaphthalene-d10
IS 2 = Fluorene-d10
IS 3 = Fluoranthene-d10
IS 4 = Benzo(a)pyrene-d12

(a) Upper Limit = + 100% of check standard area; Retention time + 0.5 minutes.
(b) Lower Limit = -50% of check standard area; Retention time -0.5 minutes.

Internal Standard Area Summary

Job Number: JD4892
Account: GESMAW Groundwater & Environmental Services
Project: Ginn Oil, 57 Winn St, Woburn, MA

Check Std:	E4M4237-CC4206	**Injection Date:**	04/03/20
Lab File ID:	4M91779.D	**Injection Time:**	09:37
Instrument ID:	GCMS4M	**Method:**	SW846 8270D BY SIM

	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT
Check Std	41951	6.83	40930	8.29	63303	10.41	48049	13.07
Upper Limit [a]	83902	7.33	81860	8.79	126606	10.91	96098	13.57
Lower Limit [b]	20976	6.33	20465	7.79	31652	9.91	24025	12.57

Lab Sample ID	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT
OP26744A-MB1	64092	6.83	64560	8.29	96460	10.40	73228	13.07
OP26800A-MB1	58640	6.83	58092	8.29	90217	10.40	71055	13.06
ZZZZZZ	78186	6.84	90788*	8.30	152204*	10.42	87402	13.07
JD5173-3	47937	6.83	49824	8.29	74221	10.40	57913	13.07
ZZZZZZ	59140	6.83	59616	8.29	93223	10.40	71976	13.07
ZZZZZZ	60226	6.83	59665	8.29	94591	10.40	72357	13.07
ZZZZZZ	59290	6.83	59448	8.29	92745	10.40	71931	13.07
JD5173-3	61324	6.83	62213	8.29	97243	10.40	73385	13.07
ZZZZZZ	58796	6.83	59334	8.29	93123	10.40	69876	13.07
ZZZZZZ	55316	6.83	54782	8.29	86637	10.40	65415	13.06
ZZZZZZ	65128	6.83	64615	8.29	101656	10.40	76409	13.06
ZZZZZZ	62938	6.83	69819	8.29	98859	10.40	75453	13.07
ZZZZZZ	68008	6.83	72864	8.29	105059	10.40	80114	13.07
ZZZZZZ	68050	6.83	68431	8.29	111271	10.40	77944	13.07
JD5173-3	66550	6.83	67404	8.29	109220	10.40	76993	13.07
ZZZZZZ	77146	6.83	118417*	8.29	110902	10.40	76456	13.08
ZZZZZZ	68170	6.83	103261*	8.29	106073	10.41	78635	13.09
JD4892-1	70542	6.83	74610	8.30	113080	10.41	77451	13.09

IS 1 = 1-Methylnaphthalene-d10
IS 2 = Fluorene-d10
IS 3 = Fluoranthene-d10
IS 4 = Benzo(a)pyrene-d12

(a) Upper Limit = + 100% of check standard area; Retention time + 0.5 minutes.
(b) Lower Limit = -50% of check standard area; Retention time -0.5 minutes.

Internal Standard Area Summary

Job Number: JD4892
Account: GESMAW Groundwater & Environmental Services
Project: Ginn Oil, 57 Winn St, Woburn, MA

Check Std:	EM6974-CC6957	**Injection Date:**	03/26/20
Lab File ID:	M164726.D	**Injection Time:**	00:30
Instrument ID:	GCMSM	**Method:**	SW846 8270D

	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT	IS 5 AREA	RT	IS 6 AREA	RT
Check Std	369339	3.81	1250047	4.76	929048	6.66	1845091	9.04	1708833	14.04	1917709	16.61
Upper Limit [a]	738678	4.31	2500094	5.26	1858096	7.16	3690182	9.54	3417666	14.54	3835418	17.11
Lower Limit [b]	184670	3.31	625024	4.26	464524	6.16	922546	8.54	854417	13.54	958855	16.11

Lab Sample ID	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT	IS 5 AREA	RT	IS 6 AREA	RT
OP26660-MB1	383519	3.80	1312329	4.75	737303	6.66	1593696	9.04	1485538	14.04	1529593	16.61
OP26660-BS1	390736	3.81	1307308	4.76	850782	6.66	1765105	9.04	1474960	14.05	1576776	16.61
OP26660-BSD	343979	3.81	1150033	4.75	742866	6.66	1534528	9.04	1296026	14.04	1352640	16.60
OP26562-MB1	424303	3.81	1400740	4.76	739732	6.66	1522401	9.04	1526646	14.03	1513455	16.60
OP26470-MB1	450187	3.81	1553760	4.76	872826	6.66	1806477	9.04	1617581	14.04	1612155	16.60
OP26486-MB1	442945	3.81	1543956	4.75	860393	6.66	1753797	9.04	1576317	14.04	1550152	16.61
ZZZZZZ	469535	3.81	1645276	4.76	926165	6.66	1844642	9.04	1661107	14.03	1592320	16.60
ZZZZZZ	423466	3.81	1396658	4.75	811769	6.66	1655009	9.04	1564875	14.04	1552102	16.60
ZZZZZZ	407002	3.81	1348396	4.76	778409	6.66	1601860	9.04	1511855	14.04	1530395	16.60
ZZZZZZ	378045	3.82	1436368	4.76	852960	6.66	1744107	9.03	1633798	14.03	1671312	16.60
JD4892-1 [c]	408129	3.80	1238744	4.75	730945	6.66	1561428	9.03	1468445	14.04	1532361	16.60
JD4892-2 [c]	411553	3.81	1287771	4.76	693855	6.66	1393109	9.04	1402580	14.04	1439019	16.60
ZZZZZZ	510941	3.81	1413256	4.75	917125	6.66	1728718	9.04	1642043	14.04	1733892	16.61
ZZZZZZ	395092	3.81	1327211	4.76	745922	6.66	1525893	9.04	1399351	14.04	1405114	16.60
ZZZZZZ	490194	3.81	1657958	4.76	926773	6.66	1794567	9.04	1517499	14.03	1418922	16.60
ZZZZZZ	432498	3.81	1188789	4.76	779878	6.66	1620990	9.04	1544281	14.03	1547250	16.60

IS 1 = 1,4-Dichlorobenzene-d4
IS 2 = Naphthalene-d8
IS 3 = Acenaphthene-D10
IS 4 = Phenanthrene-d10
IS 5 = Chrysene-d12
IS 6 = Perylene-d12

(a) Upper Limit = + 100% of check standard area; Retention time + 0.5 minutes.
(b) Lower Limit = -50% of check standard area; Retention time -0.5 minutes.
(c) Sample extracted outside the holding time.

Surrogate Recovery Summary

Job Number: JD4892
Account: GESMAW Groundwater & Environmental Services
Project: Ginn Oil, 57 Winn St, Woburn, MA

Method: SW846 8270D **Matrix:** AQ

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1	S2	S3	S4	S5	S6
JD4892-1	M164740.D	33	26	93	85	82	78
JD4892-2	M164741.D	31	25	88	83	80	65
OP26660-BS1	M164730.D	57	42	90	90	77	103
OP26660-BSD	M164731.D	46	34	78	78	69	88
OP26660-MB1	M164729.D	36	27	82	82	81	83

Surrogate Compounds	Recovery Limits
S1 = 2-Fluorophenol	10-73%
S2 = Phenol-d5	10-64%
S3 = 2,4,6-Tribromophenol	31-130%
S4 = Nitrobenzene-d5	28-126%
S5 = 2-Fluorobiphenyl	26-114%
S6 = Terphenyl-d14	16-122%

Surrogate Recovery Summary

Job Number: JD4892
Account: GESMAW Groundwater & Environmental Services
Project: Ginn Oil, 57 Winn St, Woburn, MA

Method: SW846 8270D BY SIM **Matrix:** AQ

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1	S2	S3	S4	S5	S6
JD4892-1	3P83840.D	37	26 [a]	84	78	72	79
JD4892-1	4M91801.D	41	29 [a]	87	77	75	79
JD4892-2	3P83841.D	33	23	80	68	69	68
OP26614A-BS12	4M91429.D	43	28	92	74	76	100
OP26614A-BSD12	4M91430.D	52	26	90	64	67	73
OP26614A-MB1	4M91428.D	37	24	86	68	70	102
OP26660A-BS12	3P83825.D	46	35	90	85	77	87
OP26660A-BSD12	3P83826.D	45	33	93	82	76	94
OP26660A-MB1	3P83824.D	41	29	91	82	73	89

Surrogate Compounds	Recovery Limits
S1 = 2-Fluorophenol	15-110%
S2 = Phenol-d5	12-110%
S3 = 2,4,6-Tribromophenol	32-143%
S4 = Nitrobenzene-d5	29-124%
S5 = 2-Fluorobiphenyl	23-122%
S6 = Terphenyl-d14	22-130%

(a) Outside of program requirements.

GC Volatiles

QC Data Summaries

Includes the following where applicable:

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

Method Blank Summary

Job Number: JD4892
Account: GESMAW Groundwater & Environmental Services
Project: Ginn Oil, 57 Winn St, Woburn, MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP26659-MB1	7G36486.D	1	03/30/20	TL	03/24/20	OP26659	G7G1296

The QC reported here applies to the following samples: **Method:** SW846-8011

JD4892-1, JD4892-2

CAS No.	Compound	Result	RL	Units	Q
106-93-4	1,2-Dibromoethane	ND	0.020	ug/l	

CAS No.	Surrogate Recoveries		Limits
3017-95-6	2-Bromo-1-chloropropane	112%	20-144%
3017-95-6	2-Bromo-1-chloropropane	121%	20-144%

Blank Spike/Blank Spike Duplicate Summary

Job Number: JD4892
Account: GESMAW Groundwater & Environmental Services
Project: Ginn Oil, 57 Winn St, Woburn, MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP26659-BS1	7G36487.D	1	03/30/20	TL	03/24/20	OP26659	G7G1296
OP26659-BSD	7G36488.D	1	03/30/20	TL	03/25/20	OP26659	G7G1296

The QC reported here applies to the following samples: **Method:** SW846-8011

JD4892-1, JD4892-2

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	BSD ug/l	BSD %	RPD	Limits Rec/RPD
106-93-4	1,2-Dibromoethane	0.5	0.57	114	0.52	104	9	60-140/32

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
3017-95-6	2-Bromo-1-chloropropane	109%	99%	20-144%
3017-95-6	2-Bromo-1-chloropropane	117%	109%	20-144%

* = Outside of Control Limits.

Surrogate Recovery Summary

Job Number: JD4892
Account: GESMAW Groundwater & Environmental Services
Project: Ginn Oil, 57 Winn St, Woburn, MA

Method: SW846-8011 **Matrix:** AQ

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1 [a]	S1 [b]
JD4892-1	7G36498.D	110	118
JD4892-2	7G36499.D	103	109
OP26659-BS1	7G36487.D	109	117
OP26659-BSD	7G36488.D	99	109
OP26659-MB1	7G36486.D	112	121

Surrogate Compounds	Recovery Limits
S1 = 2-Bromo-1-chloropropane	20-144%

(a) Recovery from GC signal #2
(b) Recovery from GC signal #1

GC/LC Semi-volatiles

QC Data Summaries

Includes the following where applicable:

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

Method Blank Summary

Job Number: JD4892
Account: GESMAW Groundwater & Environmental Services
Project: Ginn Oil, 57 Winn St, Woburn, MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP26716-MB1	XX2447970.D	1	03/31/20	TR	03/31/20	OP26716	GXX6976

The QC reported here applies to the following samples: **Method:** EPA 608.3

JD4892-1

CAS No.	Compound	Result	RL	Units	Q
12674-11-2	Aroclor 1016	ND	0.25	ug/l	
11104-28-2	Aroclor 1221	ND	0.25	ug/l	
11141-16-5	Aroclor 1232	ND	0.25	ug/l	
53469-21-9	Aroclor 1242	ND	0.25	ug/l	
12672-29-6	Aroclor 1248	ND	0.25	ug/l	
11097-69-1	Aroclor 1254	ND	0.25	ug/l	
11096-82-5	Aroclor 1260	ND	0.25	ug/l	

CAS No.	Surrogate Recoveries		Limits
877-09-8	Tetrachloro-m-xylene	90%	10-159%
877-09-8	Tetrachloro-m-xylene	87%	10-159%
2051-24-3	Decachlorobiphenyl	88%	10-135%
2051-24-3	Decachlorobiphenyl	93%	10-135%

Method Blank Summary

Job Number: JD4892
Account: GESMAW Groundwater & Environmental Services
Project: Ginn Oil, 57 Winn St, Woburn, MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP26849-MB1	5G96223.D	1	04/06/20	CP	04/03/20	OP26849	G5G2345

The QC reported here applies to the following samples: **Method:** EPA 608.3

JD4892-2

CAS No.	Compound	Result	RL	Units	Q
12674-11-2	Aroclor 1016	ND	0.25	ug/l	
11104-28-2	Aroclor 1221	ND	0.25	ug/l	
11141-16-5	Aroclor 1232	ND	0.25	ug/l	
53469-21-9	Aroclor 1242	ND	0.25	ug/l	
12672-29-6	Aroclor 1248	ND	0.25	ug/l	
11097-69-1	Aroclor 1254	ND	0.25	ug/l	
11096-82-5	Aroclor 1260	ND	0.25	ug/l	

CAS No.	Surrogate Recoveries		Limits
877-09-8	Tetrachloro-m-xylene	78%	10-159%
877-09-8	Tetrachloro-m-xylene	83%	10-159%
2051-24-3	Decachlorobiphenyl	65%	10-135%
2051-24-3	Decachlorobiphenyl	68%	10-135%

Blank Spike/Blank Spike Duplicate Summary

Job Number: JD4892
Account: GESMAW Groundwater & Environmental Services
Project: Ginn Oil, 57 Winn St, Woburn, MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP26716-BS1	XX2447971.D	1	03/31/20	TR	03/31/20	OP26716	GXX6976
OP26716-BSD	XX2447972.D	1	03/31/20	TR	03/31/20	OP26716	GXX6976

The QC reported here applies to the following samples: **Method:** EPA 608.3

JD4892-1

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	BSD ug/l	BSD %	RPD	Limits Rec/RPD
12674-11-2	Aroclor 1016	2	1.9	95	1.9	95	0	50-140/34
11104-28-2	Aroclor 1221		ND		ND		nc	60-140/30
11141-16-5	Aroclor 1232		ND		ND		nc	60-140/30
53469-21-9	Aroclor 1242		ND		ND		nc	60-140/30
12672-29-6	Aroclor 1248		ND		ND		nc	70-130/30
11097-69-1	Aroclor 1254		ND		ND		nc	60-140/30
11096-82-5	Aroclor 1260	2	1.8	90	1.8	90	0	50-140/38

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
877-09-8	Tetrachloro-m-xylene	106%	105%	10-159%
877-09-8	Tetrachloro-m-xylene	99%	98%	10-159%
2051-24-3	Decachlorobiphenyl	96%	96%	10-135%
2051-24-3	Decachlorobiphenyl	101%	99%	10-135%

* = Outside of Control Limits.

Blank Spike/Blank Spike Duplicate Summary

Job Number: JD4892
Account: GESMAW Groundwater & Environmental Services
Project: Ginn Oil, 57 Winn St, Woburn, MA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP26849-BS1	5G96224.D	1	04/06/20	CP	04/03/20	OP26849	G5G2345
OP26849-BSD	5G96225.D	1	04/06/20	CP	04/03/20	OP26849	G5G2345

The QC reported here applies to the following samples: **Method:** EPA 608.3

JD4892-2

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	BSD ug/l	BSD %	RPD	Limits Rec/RPD
12674-11-2	Aroclor 1016	2	1.2	60	1.4	70	15	50-140/34
11104-28-2	Aroclor 1221		ND		ND		nc	60-140/30
11141-16-5	Aroclor 1232		ND		ND		nc	60-140/30
53469-21-9	Aroclor 1242		ND		ND		nc	60-140/30
12672-29-6	Aroclor 1248		ND		ND		nc	70-130/30
11097-69-1	Aroclor 1254		ND		ND		nc	60-140/30
11096-82-5	Aroclor 1260	2	1.4	70	1.5	75	7	50-140/38

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
877-09-8	Tetrachloro-m-xylene	72%	75%	10-159%
877-09-8	Tetrachloro-m-xylene	77%	78%	10-159%
2051-24-3	Decachlorobiphenyl	62%	63%	10-135%
2051-24-3	Decachlorobiphenyl	64%	69%	10-135%

* = Outside of Control Limits.

Surrogate Recovery Summary

Job Number: JD4892
Account: GESMAW Groundwater & Environmental Services
Project: Ginn Oil, 57 Winn St, Woburn, MA

Method: EPA 608.3 **Matrix:** AQ

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1 [a]	S1 [b]	S2 [a]	S2 [b]
JD4892-1	XX2447975.D	75	75	73	82
JD4892-2	5G96229.D	57	66	57	64
OP26716-BS1	XX2447971.D	106	99	96	101
OP26716-BSD	XX2447972.D	105	98	96	99
OP26716-MB1	XX2447970.D	90	87	88	93
OP26849-BS1	5G96224.D	72	77	62	64
OP26849-BSD	5G96225.D	75	78	63	69
OP26849-MB1	5G96223.D	78	83	65	68

Surrogate Compounds	Recovery Limits
S1 = Tetrachloro-m-xylene	10-159%
S2 = Decachlorobiphenyl	10-135%

(a) Recovery from GC signal #1
(b) Recovery from GC signal #2

Metals Analysis

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Matrix Spike and Duplicate Summaries
- Blank Spike and Lab Control Sample Summaries
- Serial Dilution Summaries

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: JD4892
Account: GESMAW - Groundwater & Environmental Services
Project: Ginn Oil, 57 Winn St, Woburn, MA

QC Batch ID: MP20363 Methods: EPA 245.1
Matrix Type: AQUEOUS Units: ug/l

Prep Date: 03/20/20

Metal	RL	IDL	MDL	MB raw	final
Mercury	0.20	.052	.092	0.0052	<0.20

Associated samples MP20363: JD4892-1, JD4892-2

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: JD4892
Account: GESMAW - Groundwater & Environmental Services
Project: Ginn Oil, 57 Winn St, Woburn, MA

QC Batch ID: MP20363
Matrix Type: AQUEOUS

Methods: EPA 245.1
Units: ug/l

Prep Date: 03/20/20 03/20/20

Metal	BSP Result	Spikelot HGPW3	% Rec	QC Limits	BSD Result	Spikelot HGPW3	% Rec	BSD RPD	QC Limit
Mercury	2.2	2	110.0	85-115	2.2	2	110.0	0.0	

Associated samples MP20363: JD4892-1, JD4892-2

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: JD4892
Account: GESMAW - Groundwater & Environmental Services
Project: Ginn Oil, 57 Winn St, Woburn, MA

QC Batch ID: MP20430
Matrix Type: AQUEOUS

Methods: EPA 200.7
Units: ug/l

Prep Date: 03/25/20

Metal	RL	IDL	MDL	MB raw	final
Aluminum	200	18	77		
Antimony	6.0	1.5	4.1		
Arsenic	3.0	1.9	2.5		
Barium	200	.5	17		
Beryllium	1.0	.1	.5		
Bismuth	20	2.5	4.8		
Boron	100	2	85		
Cadmium	3.0	.2	1.2		
Calcium	5000	4.2	130	7.6	<5000
Cerium	100				
Chromium	10	.3	1.5		
Cobalt	50	.3	2.5		
Copper	10	1.8	4.1		
Iron	100	2.6	30		
Lead	3.0	1.5	2.4		
Lithium	50	2.7	9.1		
Magnesium	5000	25	200	6.4	<5000
Manganese	15	.1	2		
Molybdenum	20	.3	4.5		
Nickel	10	.3	1.8		
Phosphorus	50	2.1	14		
Potassium	10000	71	200		
Selenium	10	1.7	5.5		
Silicon	200	1.3	130		
Silver	10	.9	2.4		
Sodium	10000	38	900		
Strontium	10	.1	1.6		
Sulfur	50	2.6	18		
Thallium	10	.9	1.9		
Tin	50	.5	4.7		
Titanium	10	.4	1.9		
Tungsten	50	.9	19		
Vanadium	50	.4	2.3		

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: JD4892
Account: GESMAW - Groundwater & Environmental Services
Project: Ginn Oil, 57 Winn St, Woburn, MA

QC Batch ID: MP20430
Matrix Type: AQUEOUS

Methods: EPA 200.7
Units: ug/l

Prep Date: 03/25/20

Metal	RL	IDL	MDL	MB raw	final
Zinc	20	.1	8.5		
Zirconium	10	.3	4.9		

Associated samples MP20430: JD4892-1, JD4892-2

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: JD4892
Account: GESMAW - Groundwater & Environmental Services
Project: Ginn Oil, 57 Winn St, Woburn, MA

QC Batch ID: MP20430
Matrix Type: AQUEOUS

Methods: EPA 200.7
Units: ug/l

Prep Date:		03/25/20				03/25/20			
Metal	BSP Result	Spikelot MPEPA200.7% Rec	QC Limits	BSD Result	Spikelot MPEPA200.7% Rec		BSD RPD	QC Limit	
Aluminum									
Antimony	anr								
Arsenic									
Barium									
Beryllium	anr								
Bismuth									
Boron									
Cadmium	anr								
Calcium	24900	25000	99.6	85-115	25100	25000	100.4	0.8	20
Cerium									
Chromium	anr								
Cobalt									
Copper	anr								
Iron	anr								
Lead	anr								
Lithium									
Magnesium	25400	25000	101.6	85-115	25300	25000	101.2	0.4	20
Manganese									
Molybdenum									
Nickel	anr								
Phosphorus									
Potassium									
Selenium	anr								
Silicon									
Silver	anr								
Sodium									
Strontium									
Sulfur									
Thallium									
Tin									
Titanium									
Tungsten									
Vanadium									

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: JD4892
Account: GESMAW - Groundwater & Environmental Services
Project: Ginn Oil, 57 Winn St, Woburn, MA

QC Batch ID: MP20430
Matrix Type: AQUEOUS

Methods: EPA 200.7
Units: ug/l

Prep Date: 03/25/20 03/25/20

Metal	BSP Result	Spikelot MPEPA200.7% Rec	QC Limits	BSD Result	Spikelot MPEPA200.7% Rec	BSD RPD	QC Limit
Zinc	anr						
Zirconium							

Associated samples MP20430: JD4892-1, JD4892-2

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

SERIAL DILUTION RESULTS SUMMARY

Login Number: JD4892
Account: GESMAW - Groundwater & Environmental Services
Project: Ginn Oil, 57 Winn St, Woburn, MA

QC Batch ID: MP20430
Matrix Type: AQUEOUS

Methods: EPA 200.7
Units: ug/l

Prep Date: 03/25/20

Metal	JD4979-1 Original	SDL 1:5	%DIF	QC Limits
Aluminum				
Antimony	anr			
Arsenic				
Barium				
Beryllium	anr			
Bismuth				
Boron				
Cadmium	anr			
Calcium	110000	112000	1.7	0-10
Cerium				
Chromium	anr			
Cobalt				
Copper	anr			
Iron	anr			
Lead	anr			
Lithium				
Magnesium	34000	34800	2.3	0-10
Manganese				
Molybdenum				
Nickel	anr			
Phosphorus				
Potassium				
Selenium	anr			
Silicon				
Silver	anr			
Sodium				
Strontium				
Sulfur				
Thallium				
Tin				
Titanium				
Tungsten				
Vanadium				

SERIAL DILUTION RESULTS SUMMARY

Login Number: JD4892
Account: GESMAW - Groundwater & Environmental Services
Project: Ginn Oil, 57 Winn St, Woburn, MA

QC Batch ID: MP20430
Matrix Type: AQUEOUS

Methods: EPA 200.7
Units: ug/l

Prep Date: 03/25/20

Metal	JD4979-1 Original SDL 1:5	%DIF	QC Limits
Zinc	anr		
Zirconium			

Associated samples MP20430: JD4892-1, JD4892-2

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: JD4892
Account: GESMAW - Groundwater & Environmental Services
Project: Ginn Oil, 57 Winn St, Woburn, MA

QC Batch ID: MP20472
Matrix Type: AQUEOUS

Methods: EPA 200.8
Units: ug/l

Prep Date: 03/30/20

Metal	RL	IDL	MDL	MB raw	final
Aluminum	50	.42	12		
Antimony	2.0	.085	.88	0.028	<2.0
Arsenic	1.0	.025	.25	0.0040	<1.0
Barium	1.0	.009	.36		
Beryllium	0.50	.005	.065		
Boron	50	.85	18		
Cadmium	0.50	.01	.099	-0.00079	<0.50
Calcium	250	3.6	35		
Chromium	4.0	.018	.33	0.056	<4.0
Cobalt	0.50	.003	.06		
Copper	4.0	.024	2.1	0.27	<4.0
Iron	50	.24	12	12.1	<50
Lead	0.50	.008	.14	-0.0041	<0.50
Magnesium	250	.19	43		
Manganese	1.0	.012	.38		
Molybdenum	1.0	.017	.18		
Nickel	4.0	.017	1.3	0.065	<4.0
Potassium	250	.78	43		
Selenium	1.0	.044	.65	0.029	<1.0
Silver	2.0	.004	.067	0.0034	<2.0
Sodium	250	1.5	50		
Strontium	5.0	.014	.65		
Thallium	0.50	.002	.085		
Tin	5.0	.041	.62		
Titanium	1.0	.11	.63		
Vanadium	4.0	.013	.48		
Zinc	10	.078	3.7	0.25	<10

Associated samples MP20472: JD4892-1, JD4892-2

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: JD4892
Account: GESMAW - Groundwater & Environmental Services
Project: Ginn Oil, 57 Winn St, Woburn, MA

QC Batch ID: MP20472
Matrix Type: AQUEOUS

Methods: EPA 200.8
Units: ug/l

Prep Date:			03/30/20				03/30/20		
Metal	BSP Result	Spikelot MPX200.8B% Rec		QC Limits	BSD Result	Spikelot MPX200.8B% Rec		BSD RPD	QC Limit
Aluminum	anr								
Antimony	70.9	80	88.6	85-115	70.3	80	87.9	0.8	20
Arsenic	72.2	80	90.3	85-115	71.6	80	89.5	0.8	20
Barium									
Beryllium									
Boron									
Cadmium	78.0	80	97.5	85-115	77.6	80	97.0	0.5	20
Calcium									
Chromium	77.4	80	96.8	85-115	77.0	80	96.3	0.5	20
Cobalt									
Copper	75.9	80	94.9	85-115	75.0	80	93.8	1.2	20
Iron	2010	2000	100.5	85-115	1990	2000	99.5	1.0	20
Lead	73.9	80	92.4	85-115	73.6	80	92.0	0.4	20
Magnesium									
Manganese									
Molybdenum									
Nickel	75.9	80	94.9	85-115	74.8	80	93.5	1.5	20
Potassium									
Selenium	197	200	98.5	85-115	196	200	98.0	0.5	20
Silver	71.0	80	88.8	85-115	71.4	80	89.3	0.6	20
Sodium									
Strontium									
Thallium	anr								
Tin									
Titanium									
Vanadium									
Zinc	76.5	80	95.6	85-115	75.4	80	94.3	1.4	20

Associated samples MP20472: JD4892-1, JD4892-2

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

General Chemistry

QC Data Summaries

Includes the following where applicable:

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

METHOD BLANK AND SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: JD4892
Account: GESMAW - Groundwater & Environmental Services
Project: Ginn Oil, 57 Winn St, Woburn, MA

Analyte	Batch ID	RL	MB Result	Units	Spike Amount	BSP Result	BSP %Recov	QC Limits
Chloride	GP27373/GN6849	2.0	0.0	mg/l	80	84.0	105.0	90-110%
Chloride	GP27373/GN6849	2.0	0.0	mg/l	80	82.3	102.9	90-110%
Chromium, Hexavalent	GN6474	0.010	0.0	mg/l	0.150	0.15	100.0	90-110%
Cyanide	GP27356/GN6762	0.010	0.0	mg/l	0.0833	0.0820	98.4	90-110%
HEM Petroleum Hydrocarbons	GP27364/GN6800	5.0	1.2	mg/l	20.5	13.3	64.9	64-132%
Hardness, Total as CaCO3	GN6668	5.0	0.0	mg/l	160	160	100.0	80-120%
Nitrogen, Ammonia	GP27428/GN6867	0.20	0.0	mg/l	1	1.06	106.0	80-120%
Phenols	GP27412/GN6893	0.20	0.0	mg/l	0.5	0.486	97.2	90-110%
Solids, Total Suspended	GN6480	4.0	0.0	mg/l				
Sulfate	GP27373/GN6849	2.0	0.0	mg/l	80	84.8	106.0	90-110%
Sulfate	GP27373/GN6849	2.0	0.0	mg/l	80	83.2	104.0	90-110%
Total Residual Chlorine	GN6576	0.050	0.0	mg/l	1.0	0.95	95.0	90-110%

Associated Samples:
Batch GN6474: JD4892-1, JD4892-2
Batch GN6480: JD4892-1, JD4892-2
Batch GN6576: JD4892-1, JD4892-2
Batch GN6668: JD4892-1, JD4892-2
Batch GP27356: JD4892-1, JD4892-2
Batch GP27364: JD4892-1
Batch GP27373: JD4892-1, JD4892-2
Batch GP27412: JD4892-1, JD4892-2
Batch GP27428: JD4892-1, JD4892-2
(*) Outside of QC limits

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

e-Hardcopy 2.0
Automated Report

Technical Report for

Groundwater & Environmental Services

Ginn Oil, 57 Winn St, Woburn, MA

1605353 PO#1605353/02/021/2700

SGS Job Number: JD8925

Sampling Date: 06/16/20

Report to:

Groundwater & Environmental Services
One Park Drive, Suite 8
Westford, MA 01886
ekontos@gesonline.com; neregion@gesonline.com

ATTN: Edward Kontos

Total number of pages in report: **26**

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

Laura Degenhardt
General Manager

Client Service contact: Beth Wasserman 732-329-0200

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

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SGS North America Inc.

Sample Summary

Groundwater & Environmental Services

Job No: JD8925

Ginn Oil, 57 Winn St, Woburn, MA
Project No: 1605353 PO#1605353/02/021/2700

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
JD8925-1	06/16/20	09:45	JDW	06/18/20	AQ	Surface Water	OUTFALL

CASE NARRATIVE / CONFORMANCE SUMMARY

Client:	Groundwater & Environmental Services	**Job No**	JD8925
Site:	Ginn Oil, 57 Winn St, Woburn, MA	**Report Date**	6/30/2020 9:34:49 AM

On 06/18/2020, 1 Sample(s), 0 Trip Blank(s) and 0 Field Blank(s) were received at SGS North America Inc. at a maximum corrected temperature of 2.1 C. Samples were intact and chemically preserved, unless noted below. A SGS North America Inc. Job Number of JD8925 was assigned to the project. Laboratory sample ID, client sample ID and dates of sample collection are detailed in the report's Results Summary Section.

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

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

Metals Analysis By Method EPA 200.8

Matrix: AQ **Batch ID:** MP21574

- All samples were digested within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Only report requested metals.

Metals Analysis By Method EPA 245.1

Matrix: AQ **Batch ID:** MP21622

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

General Chemistry By Method SM2340 C-11

Matrix: AQ **Batch ID:** GN9067

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

General Chemistry By Method SM4500H+ B-11

Matrix: AQ **Batch ID:** R185981

- The data for SM4500H+ B-11 meets quality control requirements.
- JD8925-1 for pH: Sample received out of holding time for pH analysis. Temp of pH Reading: 11.7 Deg. C

General Chemistry By Method SM4500NH3 H-11LACHAT

Matrix: AQ **Batch ID:** GP28763

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

General Chemistry By Method SW846 6010/7196A M

Matrix: AQ **Batch ID:** R185982

- The data for SW846 6010/7196A M meets quality control requirements.
- JD8925-1 for Chromium, Trivalent: Calculated as: (Chromium) - (Chromium, Hexavalent)

General Chemistry By Method SW846 7196A

Matrix: AQ **Batch ID:** GN8863

- All method blanks for this batch meet method specific criteria.
- The following samples were run outside of holding time for method SW846 7196A: JD8925-1 Sample received outside the holding time.

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

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

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

Summary of Hits

Job Number: JD8925
Account: Groundwater & Environmental Services
Project: Ginn Oil, 57 Winn St, Woburn, MA
Collected: 06/16/20

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
JD8925-1	**OUTFALL**					
Iron		202	50		ug/l	EPA 200.8
Hardness, Total as CaCO3		56.0	5.0		mg/l	SM2340 C-11
pH [a]		7.28			su	SM4500H+ B-11

(a) Sample received out of holding time for pH analysis. Temp of pH Reading: 11.7 Deg. C

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID: OUTFALL
Lab Sample ID: JD8925-1
Matrix: AQ - Surface Water
Project: Ginn Oil, 57 Winn St, Woburn, MA

Date Sampled: 06/16/20
Date Received: 06/18/20
Percent Solids: n/a

Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Antimony	< 2.0	2.0	ug/l	1	06/22/20	06/22/20	NV	EPA 200.8 [1]	EPA 200.8 [3]
Arsenic	< 1.0	1.0	ug/l	1	06/22/20	06/22/20	NV	EPA 200.8 [1]	EPA 200.8 [3]
Cadmium	< 0.50	0.50	ug/l	1	06/22/20	06/22/20	NV	EPA 200.8 [1]	EPA 200.8 [3]
Chromium	< 4.0	4.0	ug/l	1	06/22/20	06/22/20	NV	EPA 200.8 [1]	EPA 200.8 [3]
Copper	< 4.0	4.0	ug/l	1	06/22/20	06/22/20	NV	EPA 200.8 [1]	EPA 200.8 [3]
Iron	202	50	ug/l	1	06/22/20	06/22/20	NV	EPA 200.8 [1]	EPA 200.8 [3]
Lead	< 0.50	0.50	ug/l	1	06/22/20	06/22/20	NV	EPA 200.8 [1]	EPA 200.8 [3]
Mercury	< 0.20	0.20	ug/l	1	06/24/20	06/24/20	LL	EPA 245.1 [2]	EPA 245.1 [4]
Nickel	< 4.0	4.0	ug/l	1	06/22/20	06/22/20	NV	EPA 200.8 [1]	EPA 200.8 [3]
Selenium	< 1.0	1.0	ug/l	1	06/22/20	06/22/20	NV	EPA 200.8 [1]	EPA 200.8 [3]
Silver	< 2.0	2.0	ug/l	1	06/22/20	06/22/20	NV	EPA 200.8 [1]	EPA 200.8 [3]
Zinc	< 10	10	ug/l	1	06/22/20	06/22/20	NV	EPA 200.8 [1]	EPA 200.8 [3]

(1) Instrument QC Batch: MA48849
(2) Instrument QC Batch: MA48858
(3) Prep QC Batch: MP21574
(4) Prep QC Batch: MP21622

RL = Reporting Limit

Report of Analysis

Client Sample ID:	OUTFALL		
Lab Sample ID:	JD8925-1	**Date Sampled:**	06/16/20
Matrix:	AQ - Surface Water	**Date Received:**	06/18/20
		Percent Solids:	n/a
Project:	Ginn Oil, 57 Winn St, Woburn, MA		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Chromium, Hexavalent [a]	< 0.010	0.010	mg/l	1	06/19/20 22:36	EB	SW846 7196A
Chromium, Trivalent [b]	< 0.014	0.014	mg/l	1	06/22/20 15:05	NV	SW846 6010/7196A M
Hardness, Total as CaCO3	56.0	5.0	mg/l	1	06/26/20 17:38	MP	SM2340 C-11
Nitrogen, Ammonia	< 0.20	0.20	mg/l	1	06/29/20 14:21	KI	SM4500NH3 H-11LACHAT
pH [c]	7.28		su	1	06/23/20 10:03	DG	SM4500H+ B-11

(a) Sample received outside the holding time.
(b) Calculated as: (Chromium) - (Chromium, Hexavalent)
(c) Sample received out of holding time for pH analysis. Temp of pH Reading: 11.7 Deg. C

RL = Reporting Limit

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

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

Parameter Certification Exceptions

Job Number: JD8925
Account: GESMAW Groundwater & Environmental Services
Project: Ginn Oil, 57 Winn St, Woburn, MA

The following parameters included in this report are exceptions to NELAC certification.
The certification status of each is indicated below.

Parameter	CAS#	Method	Mat	Certification Status
Chromium, Trivalent		**SW846 6010/7196A M**	AQ	SGS is not certified for this parameter.[a]

(a) Lab cert for analyte not supported by NJDEP, OQA. Only methods/analytes required for reporting by the State of NJ can be certified in NJ. Use of this analyte for compliance must be verified through the appropriate regulatory office.

Certification exceptions shown are based on the New Jersey DEP certifications. Applicability in other states may vary. Please contact your laboratory representative if additional information is required for a specific regulatory program.

SGS

SW

CHAIN OF CUSTODY

SGS North America Inc. - Dayton
2235 Route 130, Dayton, NJ 08810
TEL. 732-329-0200 FAX 732-329-3499
www.sgs.com/ehsusa

Outfall

PAGE 1 OF 1

FED-EX Tracking #	Bottle Order Control #
1926 5825 0455	TF-031020-116
SGS Quote #	SGS Job # JD8925

Client / Reporting Information	Project Information	
Company Name: Groundwater & Environmental Services, Inc.	Project Name: Ginn Oil	
Street Address: 1 Park Drive, Suite 8	Street: 57 Winn Street	Billing Information (if different from Report to)
City: Westford, State: MA, Zip: 01886	City: Woburn, State: MA	Company Name
Project Contact: Ed Kontos, E-mail: ekontos@gesonline.com	Project #: 1605353	Street Address
Phone #: 800-221-6119 x3245, Fax #: 866-902-2187	Client Purchase Order #: 1605353/02/021/2700	City, State, Zip
Sampler(s) Name(s): James Walcott, Phone #	Project Manager: Ed Kontos	Attention:

Requested Analysis (see TEST CODE sheet): EPA RGP Parameters (see attached list), AB8270 SL, AMN, B8270SIMSL, CHL, CN, HRD, MET-EPA, P608PCB, PHC1664, PN

Lab Sample #	Field ID / Point of Collection	MEOH/DI Vial #	Date	Time	Sampled by	Matrix	# of bottles	HCl	NaOH	HNO3	H2SO4	NONE	DI Water	MEOH	ENCORE	EPA RGP Parameters	AB8270 SL	AMN	B8270SIMSL	CHL	CN	HRD	MET-EPA	P608PCB	PHC1664	PN	LAB USE ONLY
1	Outfall		6/16/20	09:45	JW	SW	5			2	1	2				X	X	X	X	X	X	X	X	X	X	X	A33 641 662TY

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

Turnaround Time (Business days)

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

Approved by (SGS Project Manager)/Date:

Emergency & Rush T/A data available via LabLink

Data Deliverable Information

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

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

Comments / Special Instructions

Email invoice to ges-invoices@gesonline.com
Email lab to NERegion@gesonline.com and ekontos@gesonline.com

Sample inventory is verified upon receipt in the Laboratory

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

	Relinquished by	Date Time	Received By	Relinquished By	Date Time	Received By
1 / 2	Relinquished by Sampler: [signature]	6/16/20 15:15	1 GES Stock	2		2
3 / 4	Relinquished by Sampler: [signature]	6/18/20 1602	3 [signature]	4 [signature]	6/18/20 1545	4 [signature]
5	Relinquished by: [signature]	6/19/20 10:35	5 [signature]	Custody Seal # 13375		

- [ ] Intact
- [ ] Not intact

Preserved where applicable; On Ice; Cooler Temp. 2.4°C

Initial Assessment 2A
Label Verification ______

SGS-ACCUTEST MARLBOR 6/18

HNO3 pH<2

Form:SM088-03C (revised 2/12/18)

http://www.sgs.com/en/terms-and-conditions.

5.2

5

JD8925: Chain of Custody
Page 1 of 5

SGS Sample Receipt Summary

Job Number: JD8925 **Client:** GROUNDWATER & ENVIRONMENTAL SE **Project:** GINN OIL, 57 WINN ST, WOBURN, MA

Date / Time Received: 6/18/2020 7:00:00 PM **Delivery Method:** **Airbill #'s:**

Cooler Temps (Raw Measured) °C: Cooler 1: (2.4);

Cooler Temps (Corrected) °C: Cooler 1: (2.1);

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

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

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

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

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

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

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

Comments

SM089-02 Rev. Date 12/1/16

JD8925: Chain of Custody
Page 3 of 5

SGS Sample Receipt Summary

Job Number: JD8925 **Client:** GES **Project:** Ginn Oil

Date / Time Received: 6/18/2020 **Delivery Method:** FedEx **Airbill #'s:** 1926 5825 0495

Cooler Temps (Raw Measured) °C:

Cooler Temps (Corrected) °C:

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

Cooler Temperature	Y	or	N
1. Temp criteria achieved:	☑		☐
2. Cooler temp verification:			
3. Cooler media:			
4. No. Coolers:	1		

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

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

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

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

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

Comments

-1: Received the following volumes:
1 x 500mL HNO3 for MET
1 x 500mL HNO3 for HRD
1 X 500mL N/P for XCR, CR3
1 x 250mL N/P for pH/Temp
1 x 60mL H2SO4 for AMN

Did not received volume for B8270SIMSL, AB8270SL, CN, P608PCB, PHC1664 or PN.

SM089-02 Rev. Date 12/1/16

Responded to by: Beth Wasserman Response Date: 6/19/20

Analyses needed are: AMN, HRD, PHTEMP, XCR, CR3, SEMS, SBMS, PBMS, NIMS, HG, FEMS, CUMS, CDMS, ASMS, AGMS, ZNMS (EPA)
Per Ed Kontos

JD8925: Chain of Custody
Page 5 of 5

Massachusetts Department of Environmental Protection Bureau of Waste Site Cleanup	WSC-CAM	Exhibit VII A
	July 1, 2010	Revision No. 1
	Final	

Exhibit VII A-2: MassDEP Analytical Protocol Certification Form

MassDEP Analytical Protocol Certification Form

Laboratory Name:	SGS North America Inc. - Dayton	Project #:	JD8925
Project Location:	Ginn Oil, 57 Winn St, Woburn, MA	MADEP RTN	None

This form provides certifications for the following data set: list Laboratory Sample ID Numbers(s)
JD8925-1

Test method: Refer to case narrative.

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

CAM Protocol (check all that apply below):

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

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

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

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

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

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

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

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

Printed Name: **Laura Degenhardt** **Date:** **30-Jun-20**

Internal Sample Tracking Chronicle

Groundwater & Environmental Services

Job No: JD8925

Ginn Oil, 57 Winn St, Woburn, MA
Project No: 1605353 PO#1605353/02/021/2700

Sample Number	Method	Analyzed	By	Prepped	By	Test Codes
JD8925-1 OUTFALL	Collected: 16-JUN-20 09:45 By: JDW		Received: 18-JUN-20 By: DG			
JD8925-1	SW846 7196A	19-JUN-20 22:36	EB			XCR
JD8925-1	EPA 200.8	22-JUN-20 15:05	NV	22-JUN-20	CH	AGMS,ASMS,CDMS,CRMS,CUMS, FEMS,NIMS,PBMS,SBMS,SEMS, ZNMS
JD8925-1	SW846 6010/7196A M	22-JUN-20 15:05	NV			CR3R
JD8925-1	SM4500H+ B-11	23-JUN-20 10:03	DG			PHTEMP
JD8925-1	EPA 245.1	24-JUN-20 10:18	LL	24-JUN-20	LL	HG
JD8925-1	SM2340 C-11	26-JUN-20 17:38	MP			HRD
JD8925-1	SM4500NH3 H-11LACHAT	29-JUN-20 14:21	KI	29-JUN-20	KI	AMN

QC Evaluation: MA MCP Limits

Job Number: JD8925
Account: Groundwater & Environmental Services
Project: Ginn Oil, 57 Winn St, Woburn, MA
Collected: 06/16/20

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

No MA MCP Limits Found.

* Sample used for QC is not from job JD8925

Metals Analysis

6

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Matrix Spike and Duplicate Summaries
- Blank Spike and Lab Control Sample Summaries
- Serial Dilution Summaries

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: JD8925
Account: GESMAW - Groundwater & Environmental Services
Project: Ginn Oil, 57 Winn St, Woburn, MA

QC Batch ID: MP21574 Methods: EPA 200.8
Matrix Type: AQUEOUS Units: ug/l

Prep Date: 06/22/20

Metal	RL	IDL	MDL	MB raw	final
Aluminum	50	.42	12		
Antimony	2.0	.085	.88	0.070	<2.0
Arsenic	1.0	.025	.25	0.037	<1.0
Barium	1.0	.009	.36		
Beryllium	0.50	.005	.065		
Boron	50	.85	18		
Cadmium	0.50	.01	.099	0.011	<0.50
Calcium	250	3.6	35		
Chromium	4.0	.018	.33	0.081	<4.0
Cobalt	0.50	.003	.06		
Copper	4.0	.024	2.1	1.2	<4.0
Iron	50	.24	12	4.0	<50
Lead	0.50	.008	.14	0.012	<0.50
Magnesium	250	.19	43		
Manganese	1.0	.012	.38		
Molybdenum	1.0	.017	.18		
Nickel	4.0	.017	1.3	0.44	<4.0
Potassium	250	.78	43		
Selenium	1.0	.044	.65	0.031	<1.0
Silver	2.0	.004	.067	0.0063	<2.0
Sodium	250	1.5	50		
Strontium	5.0	.014	.65		
Thallium	0.50	.002	.085		
Tin	5.0	.041	.62		
Titanium	1.0	.11	.63		
Vanadium	4.0	.013	.48		
Zinc	10	.078	3.7	4.2	<10

Associated samples MP21574: JD8925-1

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: JD8925
Account: GESMAW - Groundwater & Environmental Services
Project: Ginn Oil, 57 Winn St, Woburn, MA

QC Batch ID: MP21574
Matrix Type: AQUEOUS

Methods: EPA 200.8
Units: ug/l

Prep Date: 06/22/20 06/22/20

Metal	BSP Result	Spikelot MPX200.8B% Rec		QC Limits	BSD Result	Spikelot MPX200.8B% Rec		BSD RPD	QC Limit
Aluminum	anr								
Antimony	72.3	80	90.4	85-115	72.8	80	91.0	0.7	20
Arsenic	70.6	80	88.3	85-115	69.0	80	86.3	2.3	20
Barium	anr								
Beryllium	anr								
Boron	anr								
Cadmium	79.0	80	98.8	85-115	77.7	80	97.1	1.7	20
Calcium									
Chromium	78.9	80	98.6	85-115	78.2	80	97.8	0.9	20
Cobalt	anr								
Copper	79.4	80	99.3	85-115	79.4	80	99.3	0.0	20
Iron	2040	2000	102.0	85-115	2000	2000	100.0	2.0	20
Lead	79.0	80	98.8	85-115	79.3	80	99.1	0.4	20
Magnesium	anr								
Manganese									
Molybdenum	anr								
Nickel	77.8	80	97.3	85-115	77.4	80	96.8	0.5	20
Potassium									
Selenium	194	200	97.0	85-115	193	200	96.5	0.5	20
Silver	78.9	80	98.6	85-115	79.6	80	99.5	0.9	20
Sodium	anr								
Strontium	anr								
Thallium	anr								
Tin	anr								
Titanium	anr								
Vanadium									
Zinc	81.1	80	101.4	85-115	81.7	80	102.1	0.7	20

Associated samples MP21574: JD8925-1

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: JD8925
Account: GESMAW - Groundwater & Environmental Services
Project: Ginn Oil, 57 Winn St, Woburn, MA

QC Batch ID: MP21622 Methods: EPA 245.1
Matrix Type: AQUEOUS Units: ug/l

Prep Date: 06/24/20

Metal	RL	IDL	MDL	MB raw	final
Mercury	0.20	.072	.092	0.057	<0.20

Associated samples MP21622: JD8925-1

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: JD8925
Account: GESMAW - Groundwater & Environmental Services
Project: Ginn Oil, 57 Winn St, Woburn, MA

QC Batch ID: MP21622
Matrix Type: AQUEOUS

Methods: EPA 245.1
Units: ug/l

Prep Date: 06/24/20 06/24/20

Metal	BSP Result	Spikelot HGPW3	% Rec	QC Limits	BSD Result	Spikelot HGPW3	% Rec	BSD RPD	QC Limit
Mercury	2.1	2	105.0	85-115	1.8	2	90.0	15.4	

Associated samples MP21622: JD8925-1

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

General Chemistry

QC Data Summaries

Includes the following where applicable:

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

METHOD BLANK AND SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: JD8925
Account: GESMAW - Groundwater & Environmental Services
Project: Ginn Oil, 57 Winn St, Woburn, MA

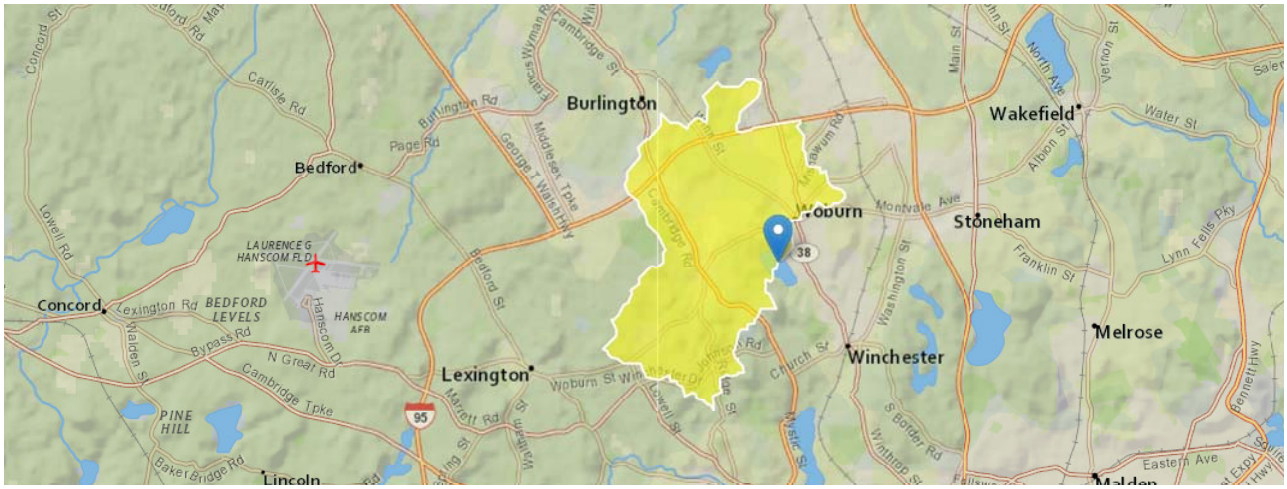
Analyte	Batch ID	RL	MB Result	Units	Spike Amount	BSP Result	BSP %Recov	QC Limits
Chromium, Hexavalent	GN8863	0.010	0.0	mg/l	0.150	0.149	99.3	90-110%
Hardness, Total as CaCO3	GN9067	5.0	0.0	mg/l	160	156	97.5	80-120%
Nitrogen, Ammonia	GP28763/GN9126	0.20	0.0	mg/l	1	0.980	98.0	80-120%

Associated Samples:
Batch GN8863: JD8925-1
Batch GN9067: JD8925-1
Batch GP28763: JD8925-1
(*) Outside of QC limits

Attachment C – StreamStats Flow Statistics Report

StreamStats Report

Region ID: MA
Workspace ID: MA20200306165317007000
Clicked Point (Latitude, Longitude): 42.47053, -71.15713
Time: 2020-03-06 11:53:33 -0500



Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	8.44	square miles
BSLDEM250	Mean basin slope computed from 1:250K DEM	2.708	percent
DRFTPERSTR	Area of stratified drift per unit of stream length	0.15	square mile per mile
MAREGION	Region of Massachusetts 0 for Eastern 1 for Western	0	dimensionless

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

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	8.44	square miles	1.61	149
BSLDEM250	Mean Basin Slope from 250K DEM	2.708	percent	0.32	24.6
DRFTPERSTR	Stratified Drift per Stream Length	0.15	square mile per mile	0	1.29
MAREGION	Massachusetts Region	0	dimensionless	0	1

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

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

Statistic	Value	Unit	PII	PIu	SE	SEp
7 Day 2 Year Low Flow	0.769	ft^3/s	0.295	1.93	49.5	49.5
7 Day 10 Year Low Flow	0.315	ft^3/s	0.0934	0.992	70.8	70.8

Low-Flow Statistics Citations

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

USGS Data Disclaimer: Unless otherwise stated, all data, metadata and related materials are considered to satisfy the quality standards relative to the purpose for which the data were collected. Although these data and associated metadata have been reviewed for accuracy and completeness and approved for release by the U.S. Geological Survey (USGS), no warranty expressed or implied is made regarding the display or utility of the data for other purposes, nor on all computer systems, nor shall the act of distribution constitute any such warranty.

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Application Version: 4.3.11

Attachment D – MassDEP Phase 1 Site Assessment Map and NHESP Map

MassDEP - Bureau of Waste Site Cleanup

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

Site Information:

57 WINN STREET WOBURN, MA
3-000019134
NAD83 UTM Meters:
4705490mN , 322969mE (Zone: 19)
March 5, 2020

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: https://www.mass.gov/orgs/massgis-bureau-of-geographic-information.

MassDEP
Commonwealth of Massachusetts
Department of Environmental Protection

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

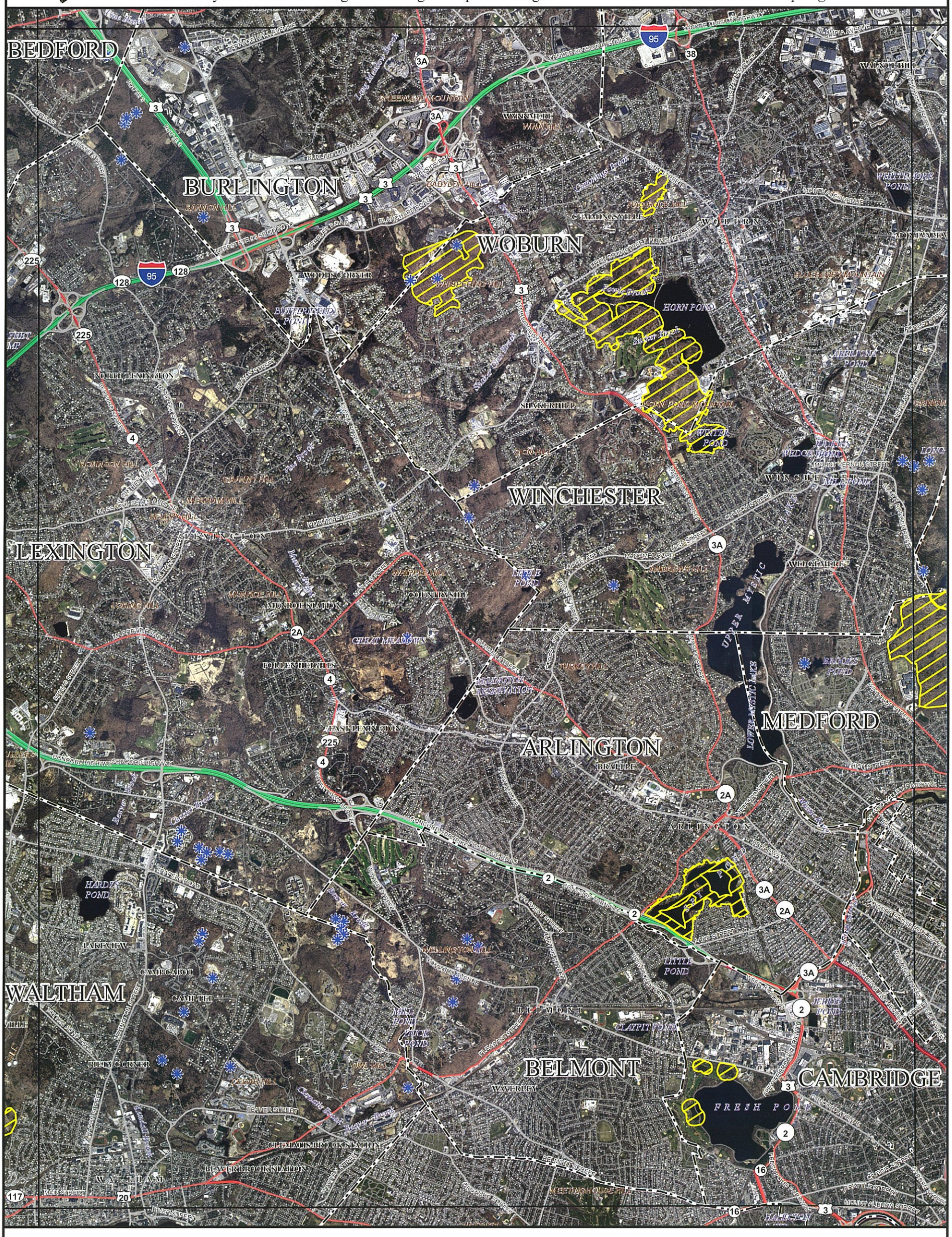
Priority Habitats and Estimated Habitats - Effective October 1, 2008

Priority Habitats for use with the MA Endangered Species Act Regulations (321 CMR 10)

Estimated Habitats for use with the MA Wetlands Protection Act Regulations (310 CMR 10)

Produced by the Natural Heritage & Endangered Species Program

website: www.nhesp.org



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Priority Habitat of Rare Species

Priority Habitat of Rare Species and also Estimated Habitat of Rare Wildlife

*** Certified Vernal Pool (as of July 31, 2008)**

N

0 0.5 1 2 Miles

Lexington Quad

Attachment E – US Department of the Interior, Fish and Wildlife Services (FWS) Threatened or Endangered Species or Critical Habitat Letter & Consistency Letter

United States Department of the Interior

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

IPaC Record Locator: 966-20652460 March 05, 2020

Subject: Consistency letter for the 'Former Ginn Oil, Woburn, MA' project indicating that any take of the northern long-eared bat that may occur as a result of the Action is not prohibited under the ESA Section 4(d) rule adopted for this species at 50 CFR §17.40(o).

Dear Genevieve Bock:

The U.S. Fish and Wildlife Service (Service) received on March 05, 2020 your effects determination for the 'Former Ginn Oil, Woburn, MA' (the Action) using the northern long-eared bat (*Myotis septentrionalis*) key within the Information for Planning and Consultation (IPaC) system. You indicated that no Federal agencies are involved in funding or authorizing this Action. This IPaC key assists users in determining whether a non-Federal action may cause "take"[1] of the northern long-eared bat that is prohibited under the Endangered Species Act of 1973 (ESA) (87 Stat.884, as amended; 16 U.S.C. 1531 et seq.).

Based upon your IPaC submission, any take of the northern long-eared bat that may occur as a result of the Action is not prohibited under the ESA Section 4(d) rule adopted for this species at 50 CFR §17.40(o). Unless the Service advises you within 30 days of the date of this letter that your IPaC-assisted determination was incorrect, this letter verifies that the Action is not likely to result in unauthorized take of the northern long-eared bat.

Please report to our office any changes to the information about the Action that you entered into IPaC, the results of any bat surveys conducted in the Action area, and any dead, injured, or sick northern long-eared bats that are found during Action implementation.

If your Action proceeds as described and no additional information about the Action's effects on species protected under the ESA becomes available, no further coordination with the Service is required with respect to the northern long-eared bat.

[1]Take means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct [ESA Section 3(19)].

Action Description
You provided to IPaC the following name and description for the subject Action.

1. Name

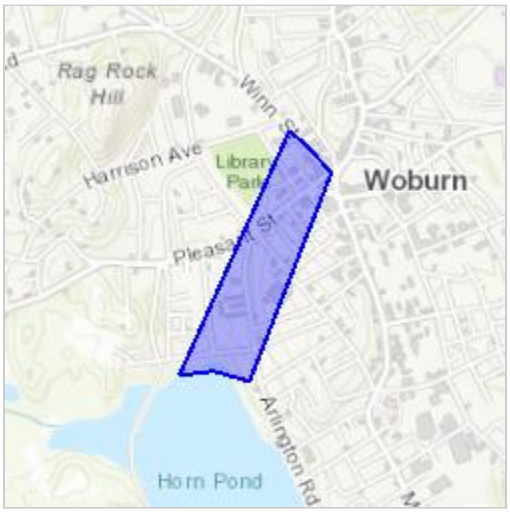
Former Ginn Oil, Woburn, MA

2. Description

The following description was provided for the project 'Former Ginn Oil, Woburn, MA':

> Short term (less than 2 months) remediation of petroleum impacted soil and groundwater at 57 Winn Street, Woburn, MA. Soil excavation, dewatering, groundwater treatment and discharge is proposed to a storm drain that discharges to local surface water under an EPA RGP. Proposed remediation and discharge is anticipated to be completed in less than 8 weeks. No trees will be removed or effected by the proposed work.

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/place/42.47712824354795N71.15514997196273W



Determination Key Result

This non-Federal Action may affect the northern long-eared bat; however, any take of this species that may occur incidental to this Action is not prohibited under the final 4(d) rule at 50 CFR §17.40(o).

Determination Key Description: Northern Long-eared Bat 4(d) Rule
This key was last updated in IPaC on **May 15, 2017**. Keys are subject to periodic revision.

This key is intended for actions that may affect the threatened northern long-eared bat.

The purpose of the key for non-Federal actions is to assist determinations as to whether proposed actions are excepted from take prohibitions under the northern long-eared bat 4(d) rule.

If a non-Federal action may cause prohibited take of northern long-eared bats or other ESA-listed animal species, we recommend that you coordinate with the Service.

Determination Key Result

Based upon your IPaC submission, any take of the northern long-eared bat that may occur as a result of the Action is not prohibited under the ESA Section 4(d) rule adopted for this species at 50 CFR §17.40(o).

Qualification Interview

1. Is the action authorized, funded, or being carried out by a Federal agency?

   No

2. Will your activity purposefully **Take** northern long-eared bats?

   No

3. Is the project action area located wholly outside the White-nose Syndrome Zone?

   Automatically answered
   No

4. Have you contacted the appropriate agency to determine if your project is near a known hibernaculum or maternity roost tree?

   Location information for northern long-eared bat hibernacula is generally kept in state Natural Heritage Inventory databases – the availability of this data varies state-by-state. Many states provide online access to their data, either directly by providing maps or by providing the opportunity to make a data request. In some cases, to protect those resources, access to the information may be limited. A web page with links to state Natural Heritage Inventory databases and other sources of information on the locations of northern long-eared bat roost trees and hibernacula is available at www.fws.gov/midwest/endangered/mammals/nleb/nhisites.html.

   Yes

5. Will the action affect a cave or mine where northern long-eared bats are known to hibernate (i.e., hibernaculum) or could it alter the entrance or the environment (physical or other alteration) of a hibernaculum?

   No

6. Will the action involve Tree Removal?

   No

Project Questionnaire

If the project includes forest conversion, report the appropriate acreages below. Otherwise, type '0' in questions 1-3.

1. Estimated total acres of forest conversion:

0

2. If known, estimated acres of forest conversion from April 1 to October 31

0

3. If known, estimated acres of forest conversion from June 1 to July 31

0

If the project includes timber harvest, report the appropriate acreages below. Otherwise, type '0' in questions 4-6.

4. Estimated total acres of timber harvest

0

5. If known, estimated acres of timber harvest from April 1 to October 31

0

6. If known, estimated acres of timber harvest from June 1 to July 31

0

If the project includes prescribed fire, report the appropriate acreages below. Otherwise, type '0' in questions 7-9.

7. Estimated total acres of prescribed fire

0

8. If known, estimated acres of prescribed fire from April 1 to October 31

0

9. If known, estimated acres of prescribed fire from June 1 to July 31

0

If the project includes new wind turbines, report the megawatts of wind capacity below. Otherwise, type '0' in question 10.

10. What is the estimated wind capacity (in megawatts) of the new turbine(s)?
0

Attachment F – MACRIS Historic Places Report

Massachusetts Cultural Resource Information System

MACRIS

MACRIS Search Results

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

Inv. No.	Property Name	Street	Town	Year
WOB.A	Battle Road - Old Lexington Road Area		Woburn	
WOB.B	Middlesex Canal		Woburn	
WOB.C	Metropolitan Park System of Greater Boston		Woburn	
WOB.D	Middlesex Canal Area		Woburn	
WOB.E	Diners of Massachusetts		Woburn	
WOB.F	Woburn Public Library		Woburn	
WOB.G	First Burial Ground		Woburn	
WOB.H	Baldwin Homestead Historic District		Woburn	
WOB.I	Saint Joseph's Roman Catholic Church Complex		Woburn	
WOB.J	Middlesex Canal Historic and Archaeological		Woburn	
WOB.K	Expanded Baldwin Homestead Historic District		Woburn	
WOB.L	Woburn Jewish Cemeteries		Woburn	
WOB.15	U. S. Post Office - Woburn Center Station	1 Abbott St	Woburn	1911
WOB.1	Baldwin, Loammi Mansion	2 Alfred St	Woburn	c 1750
WOB.46	Simonds, George A. House	1 Arlington Rd	Woburn	c 1900
WOB.47	Johnson, John House	4 Arlington Rd	Woburn	c 1860
WOB.291		6 Arlington Rd	Woburn	c 1830
WOB.293		8 Arlington Rd	Woburn	c 1910
WOB.48	Dow, Carrie Ellis - Lynch, Thomas K. House	9 Arlington Rd	Woburn	c 1890
WOB.294	Taylor, James Dexter House	10 Arlington Rd	Woburn	c 1860
WOB.49	Davis, William Frederic House	11 Arlington Rd	Woburn	1888
WOB.295		14 Arlington Rd	Woburn	c 1900
WOB.296		16 Arlington Rd	Woburn	c 1900
WOB.50	Ramsdell, Julius F. House	17 Arlington Rd	Woburn	c 1898
WOB.298	Trull, Alfred A. House	22 Arlington Rd	Woburn	c 1850
WOB.300		24 Arlington Rd	Woburn	c 1900
WOB.301		26 Arlington Rd	Woburn	c 1900

Inv. No.	Property Name	Street	Town	Year
WOB.302		30 Arlington Rd	Woburn	c 1890
WOB.303		34 Arlington Rd	Woburn	c 1890
WOB.305		36 Arlington Rd	Woburn	c 1900
WOB.635	Brown, Frederic J. House	37 Arlington Rd	Woburn	c 1882
WOB.307	Kean, Frederick Clarence House	40 Arlington Rd	Woburn	1906
WOB.636	Barnes, Rev. William S. - Ronco, David House	41 Arlington Rd	Woburn	c 1870
WOB.677	Hudson, Edward W. House	45 Arlington Rd	Woburn	c 1880
WOB.311		46 Arlington Rd	Woburn	c 1962
WOB.313	Parker, Frederick Chandler House	48 Arlington Rd	Woburn	c 1840
WOB.315		50 Arlington Rd	Woburn	c 1962
WOB.325		61 Arlington Rd	Woburn	c 1910
WOB.318	Butts, Charles A. House	62 Arlington Rd	Woburn	1928
WOB.326		63 Arlington Rd	Woburn	c 1900
WOB.319		64 Arlington Rd	Woburn	c 1910
WOB.327		65 Arlington Rd	Woburn	c 1930
WOB.322		66 Arlington Rd	Woburn	c 1890
WOB.329		69 Arlington Rd	Woburn	c 1900
WOB.637	Crovo, Harry House	70 Arlington Rd	Woburn	1924
WOB.338	Hudson, Edward W. Double House	92 Arlington Rd	Woburn	c 1860
WOB.638	McCauley, Patrick Filling Station	92 Arlington Rd	Woburn	r 1920
WOB.339		100 Arlington Rd	Woburn	c 1960
WOB.340		106 Arlington Rd	Woburn	c 1930
WOB.341		108 Arlington Rd	Woburn	c 1940
WOB.342		110 Arlington Rd	Woburn	c 1940
WOB.343	McLaughlin, James A. House	112 Arlington Rd	Woburn	c 1918
WOB.344		114 Arlington Rd	Woburn	c 1900
WOB.345		116 Arlington Rd	Woburn	c 1960
WOB.346		120 Arlington Rd	Woburn	c 1957
WOB.347		126 Arlington Rd	Woburn	c 1957
WOB.348		130 Arlington Rd	Woburn	c 1959
WOB.350	Leathe, Josiah - Burke, Patrick House	138 Arlington Rd	Woburn	c 1850
WOB.640	Donahue, Patrick Double House	6 Ash St	Woburn	c 1875
WOB.641	Sloan, Patrick - McGowan, Charles E. House	10 Ash St	Woburn	c 1870
WOB.642	Meehan, Bernard House	12 Ash St	Woburn	c 1870
WOB.248		2 Ashburton Ave	Woburn	c 1940
WOB.515	Stewart, Joseph E. House	27 Auburn St	Woburn	c 1880
WOB.516	McDermott, Michael House	18 Bacon St	Woburn	c 1887
WOB.517	O'Hara, Martin House	22 Bacon St	Woburn	c 1894

Inv. No.	Property Name	Street	Town	Year
WOB.356	Rand, Charles H. House	6 Beach St	Woburn	c 1870
WOB.357	Knight, Alden House	10 Beach St	Woburn	c 1860
WOB.358	Kenney, John P. House	11 Beach St	Woburn	c 1926
WOB.359	Wright, Jacob House	15 Beach St	Woburn	c 1875
WOB.360	French, Charles P. - McHugh, Annie House	18-20 Beach St	Woburn	c 1910
WOB.361	Cummings, William H. - Wood, Charles Lincoln House	19 Beach St	Woburn	c 1882
WOB.518	Winn, J. House	5 Beacon St	Woburn	r 1830
WOB.519	Winn, J. House	7 Beacon St	Woburn	c 1840
WOB.520	Gifford, Seth - Hurd, E. Arthur House	9 Beacon St	Woburn	c 1887
WOB.521	Winn, Joseph - Gifford, Seth House	11 Beacon St	Woburn	c 1830
WOB.522	Simonds, Susan House	13 Beacon St	Woburn	c 1860
WOB.51	Cutler, Warren House	40 Beacon St	Woburn	c 1860
WOB.52	Nichols, Frank C. Double House	43 Beacon St	Woburn	c 1890
WOB.362	Bowen, John - Shea, Michael House	49 Bedford Rd	Woburn	c 1870
WOB.523	Breslin, Charles House	80 Bedford Rd	Woburn	c 1850
WOB.524	Given, Frederic House	116 Bedford Rd	Woburn	c 1880
WOB.525	Johnson, Oscar House	118 Bedford Rd	Woburn	c 1916
WOB.526	Cummings, John House	120 Bedford Rd	Woburn	c 1810
WOB.527	Wenzell, Henry - Blaney, George Arnold House	131 Bedford Rd	Woburn	c 1865
WOB.528	Cummings, John - Stevenson, Matthew House	134 Bedford Rd	Woburn	c 1860
WOB.529	McLaughlin, Neil - Ellard, John House	135 Bedford Rd	Woburn	c 1860
WOB.530	Cummings, John - O'Rourke, Edward House	136 Bedford Rd	Woburn	c 1860
WOB.531		137 Bedford Rd	Woburn	c 1910
WOB.532	Cummings, Cyrus - Glass, Isabella G. House	141 Bedford Rd	Woburn	c 1870
WOB.533	Cummings, Cyrus Double House and Market	143 Bedford Rd	Woburn	c 1860
WOB.534	Cummings, John - Busteed, Adam Double House	157-159 Bedford Rd	Woburn	c 1810
WOB.535	Bacon, John - Doherty, John A. Double House	161-163 Bedford Rd	Woburn	r 1820
WOB.536	Kendall, Nathaniel - Cummings, John Double House	167-169 Bedford Rd	Woburn	c 1840
WOB.537	Downs, Mark - Heald, Alvah House	171 Bedford Rd	Woburn	c 1860
WOB.538	Heald, Alvah Barn	171 Bedford Rd	Woburn	r 1920
WOB.539	Graham, A. House	173 Bedford Rd	Woburn	c 1880
WOB.540	Barrett, Abel House	175 Bedford Rd	Woburn	c 1880
WOB.541	Harron, John Garage	175 Bedford Rd	Woburn	r 1920
WOB.2	Martin, Capt. William House	10 Bennett St	Woburn	c 1828
WOB.363	Leahey, Edward M. House	4 Blake St	Woburn	1928
WOB.364	Watt, John - Potamis, Gregory House	5 Blake St	Woburn	1928

Inv. No.	Property Name	Street	Town	Year
WOB.365	Maguire, John House	6 Blake St	Woburn	1928
WOB.366	Blake, Henry C. House	8 Blake St	Woburn	1928
WOB.367	Blake, Henry C. - McGonagle, Daniel House	10 Blake St	Woburn	1928
WOB.368	Blake, Henry C. - Carpenter, Edna House	1 Blake Terr	Woburn	c 1930
WOB.369	Howe, William House	3 Blake Terr	Woburn	1927
WOB.370	Smith, Kennick R. - Garrity, Mary House	5 Blake Terr	Woburn	1927
WOB.53	Conn, Horace - Place, Griffin Carriage House	6 Blake Terr	Woburn	c 1868
WOB.371	Blake, Henry C. - Mahoney, Edward House	7 Blake Terr	Woburn	1928
WOB.643	Dolan, Thomas House	10 Border St	Woburn	c 1870
WOB.4	Converse, Josiah - Richardson, Bartholomew House	76 Bow St	Woburn	c 1675
WOB.231	Richardson, F. P. Barn	76 Bow St	Woburn	r 1885
WOB.644	McDonald, James - Sullivan, Patrick House	12 Buckman Ct	Woburn	r 1875
WOB.55	Flagg, Benjamin F. House	51 Burlington St	Woburn	c 1880
WOB.56	Blanchard, David O. House	133 Burlington St	Woburn	c 1860
WOB.372	Nichols, Charles A. House	3 Burlington St.	Woburn	c 1870
WOB.34	Cummings, Ebenezer - Cummings, Charles House	35 Cambridge Rd	Woburn	c 1850
WOB.373	Weston, John House	134 Cambridge Rd	Woburn	c 1840
WOB.57	Tarky, William J. House	165 Cambridge Rd	Woburn	c 1920
WOB.58	Hale, Jonas House	210 Cambridge Rd	Woburn	c 1830
WOB.59	Looker, Bertha - Reeves, George House	213 Cambridge Rd	Woburn	c 1910
WOB.60	Russell, George House	216 Cambridge Rd	Woburn	c 1830
WOB.61	Cambridge Street School	216R Cambridge Rd	Woburn	c 1844
WOB.230	Russell, William Barn	216 Cambridge Rd	Woburn	r 1920
WOB.5	Parker, Joseph - Tufts, William A. House	221 Cambridge Rd	Woburn	1782
WOB.374	Parker, Joseph - Heald, Jonathan Bradford House	241 Cambridge Rd	Woburn	c 1800
WOB.26	Saint Joseph's Roman Catholic Rectory	22 Central St	Woburn	c 1840
WOB.27	Saint Joseph's Roman Catholic Rectory Garage	22 Central St	Woburn	c 1920
WOB.940	Saint Joseph's Roman Catholic Church Ballfield	22 Central St	Woburn	c 1920
WOB.542	Bucknam, Asahel Porter House	26 Central St	Woburn	c 1830
WOB.375	Johnson, Nathaniel M. House	3 Charles St	Woburn	c 1840
WOB.376	Shaw, J. W. Double House	5-7 Charles St	Woburn	c 1890
WOB.377	Carter, Alfred Gowing House	6-8 Charles St	Woburn	c 1870
WOB.378	Cole, Joseph H. House	9 Charles St	Woburn	c 1890
WOB.379	Rice, Thomas House	12 Charles St	Woburn	c 1870
WOB.380	Thurston, Samuel House	14 Charles St	Woburn	c 1860
WOB.574	Madan, John Jr. - Cooper, Charles E. Barn	2 Chestnut St	Woburn	c 1840

Inv. No.	Property Name	Street	Town	Year
WOB.62	Skinner, James Leather Company Worker Housing	6 Chestnut St	Woburn	c 1860
WOB.268		37 1/2 Chestnut St	Woburn	c 1880
WOB.269		45 Chestnut St	Woburn	c 1890
WOB.271		47 Chestnut St	Woburn	c 1910
WOB.543	Dow, Stephen Double House	4-6 Church Ave	Woburn	c 1820
WOB.63	Richardson, Lemuel Gerrish House	14 Church Ave	Woburn	c 1860
WOB.199	Richardson, Lemuel Gerrish Carriage House	14 Church Ave	Woburn	
WOB.544	Smith, Susan - Miller, John House	17 Church Ave	Woburn	c 1852
WOB.381	Kelley, Joseph House	10 Church St	Woburn	c 1850
WOB.545	Kelley, Joseph - Poole, Eleazer Flagg Double House	20-22 Church St	Woburn	c 1840
WOB.382	Whitcher, Celenda Thompson House	3 Cleveland Ave	Woburn	1888
WOB.383	Kendrick, Simeon Edgar House	6 Cleveland Ave	Woburn	c 1880
WOB.384	Eames, Henry M. House	7 Cleveland Ave	Woburn	c 1890
WOB.385	Godkin, Bertha House	8 Cleveland Ave	Woburn	c 1890
WOB.386	Conn, George C. House	9 Cleveland Ave	Woburn	c 1890
WOB.387	Long, Margaret I. House	10 Cleveland Ave	Woburn	c 1890
WOB.388	Parker, Gordon House	11 Cleveland Ave	Woburn	c 1890
WOB.389	Cummings, William H. - Burke, Michael F. House	12 Cleveland Ave	Woburn	c 1890
WOB.390		13 Cleveland Ave	Woburn	c 1923
WOB.391		13A Cleveland Ave	Woburn	c 1923
WOB.392	Cummings, William H. House	14 Cleveland Ave	Woburn	c 1890
WOB.393	Sweetser, John H. House	15 Cleveland Ave	Woburn	c 1890
WOB.394	Cummings, Frank H. House	16 Cleveland Ave	Woburn	c 1890
WOB.395	Cummings, William F. - Connolly, Thomas W.	17 Cleveland Ave	Woburn	c 1890
WOB.396	Wheaton, Joseph Ray	18 Cleveland Ave	Woburn	c 1910
WOB.397	Emery, William F. - Leland, Frank House	19 Cleveland Ave	Woburn	c 1880
WOB.398	LeBaron, William H.B. House	21 Cleveland Ave	Woburn	c 1880
WOB.399	Cummings, William H. House	22 Cleveland Ave	Woburn	c 1890
WOB.400	Randall, Hiram G - Wood, Guy House	25 Cleveland Ave	Woburn	c 1880
WOB.401	Kelleher, Timothy House	35 Cleveland Ave	Woburn	c 1915
WOB.402	Clement, Albert A. House	7 Clinton St	Woburn	c 1875
WOB.403	Claridge, Fred H. - Boutwell, James E. House	9 Clinton St	Woburn	c 1870
WOB.404	Temple, Charles Augustus House	10 Clinton St	Woburn	c 1910
WOB.405	Hart - Clinton Hose Company #6	12 Clinton St	Woburn	r 1879
WOB.406	Young, Charles House	14 Clinton St	Woburn	c 1920
WOB.407	Knapp, Josephine House	16 Clinton St	Woburn	c 1875

Inv. No.	Property Name	Street	Town	Year
WOB.408	Firth, John - Teele, Melinda House	17 Clinton St	Woburn	c 1860
WOB.409	Cavicchi, Joseph House	18 Clinton St	Woburn	1925
WOB.411	Brooks, R. W. Double House	19-21 Clinton St	Woburn	c 1880
WOB.410	Murdock, Alexander House	20 Clinton St	Woburn	1893
WOB.412	Sheeran, Frank J. House	22 Clinton St	Woburn	1906
WOB.413	McKay, Joseph House	23 Clinton St	Woburn	1929
WOB.414	Richardson, Marshall L. House	25 Clinton St	Woburn	c 1860
WOB.415	Richardson, Sydney S. Double House	26-28 Clinton St	Woburn	c 1870
WOB.416	Ames, Jacob House	29 Clinton St	Woburn	r 1855
WOB.417	Singer, William J. House	36 Clinton St	Woburn	c 1890
WOB.901	Woburn World War I Memorial	Common St	Woburn	c 1920
WOB.902	U. S. S. Maine Ventilator Cowl	Common St	Woburn	1912
WOB.904	Woburn Spanish American War Statue	Common St	Woburn	1934
WOB.913	Woburn Vietnam War Memorial	Common St	Woburn	c 1980
WOB.914	Woburn Korean War Memorial	Common St	Woburn	1978
WOB.915	Woburn World War II Memorial	Common St	Woburn	1944
WOB.64	Woburn Co-operative Bank	6 Common St	Woburn	1927
WOB.16	Woburn City Hall	10 Common St	Woburn	1930
WOB.65	Grammer, William T. and Samuel House	15 Court St	Woburn	c 1860
WOB.66	Woburn Water Works Engine House	5 Cove St	Woburn	1873
WOB.546	Tripp, Charles Edgar House	2 Eastern Ave	Woburn	c 1890
WOB.547	Fowle, Jeduthun - Pierce, William House	4 Eastern Ave	Woburn	c 1850
WOB.548	Grothe, John Barn	4 Eastern Ave	Woburn	c 1906
WOB.549	Putnam, William R. Double House	33-35 Eastern Ave	Woburn	c 1870
WOB.418	Seaver, John - McGrath, Jame F. House	14 Eaton Ave	Woburn	1897
WOB.419	Lausch, Frederick A. - McHugh, Rev. Thomas F House	16 Eaton Ave	Woburn	1897
WOB.420	Larsen, Hans P. House	18 Eaton Ave	Woburn	1897
WOB.421	Koniares, Theodore House	20 Eaton Ave	Woburn	1928
WOB.422	Kimball, Charles H. - Murray, Francis H. House	21 Eaton Ave	Woburn	1898
WOB.423	Ray, Arthur F. House	24 Eaton Ave	Woburn	1917
WOB.424	McLatchy, Allen H. House	28 Eaton Ave	Woburn	1923
WOB.425	Smith, William P. - Bagnall, Herbert V. House	29 Eaton Ave	Woburn	c 1895
WOB.426	Ray, John Oliver House	33 Eaton Ave	Woburn	1895
WOB.427	Dearborn, Charles A. House	35 Eaton Ave	Woburn	1893
WOB.428	Haber, William - Henchey, Judge William House	41 Eaton Ave	Woburn	1898
WOB.429	Houghton, Thomas Frank House	43 Eaton Ave	Woburn	1892
WOB.430	Bailey, David E. House	45 Eaton Ave	Woburn	1925

Inv. No.	Property Name	Street	Town	Year
WOB.431	Cummings, Eustace House	47 Eaton Ave	Woburn	1921
WOB.432	Cummings, Edward H. House	49 Eaton Ave	Woburn	c 1920
WOB.433	Riley, Thomas F. House	51 Eaton Ave	Woburn	1916
WOB.10	Baldwin Farmhouse	16-18 Elm St	Woburn	c 1820
WOB.67	Kimball, Charles H. House	19 Elm St	Woburn	c 1890
WOB.39	Thompson, Cyrus House	21 Elm St	Woburn	c 1820
WOB.68	Bowser, Fred H. Jr. House	22 Elm St	Woburn	c 1920
WOB.200	Bowser, Fred H. Jr. Garage	22 Elm St	Woburn	c 1920
WOB.40	Thompson, Samuel House	31 Elm St	Woburn	c 1730
WOB.41	Thompson, Eunice Memorial Library	33 Elm St	Woburn	1906
WOB.69	Dearborn, Charles T. House	41 Elm St	Woburn	1882
WOB.70	Buckman, Minot House	43 Elm St	Woburn	c 1885
WOB.201	Mack, Richard - Horne, Chester Garage	43 Elm St	Woburn	c 1920
WOB.42	Thompson, Charles House	44 Elm St	Woburn	c 1800
WOB.71	Goodwin, Mary F. Double House	45 Elm St	Woburn	c 1884
WOB.72	North Congregational Church Parsonage	53 Elm St	Woburn	1894
WOB.202	North Congregational Church Parsonage Garage	53 Elm St	Woburn	r 1920
WOB.73	Bixby, Dr. Josiah Peet House	55 Elm St	Woburn	1893
WOB.203	Bixby, Dr. Josiah Peet Barn	55 Elm St	Woburn	
WOB.43	Thompson, Charles Roswell House	58 Elm St	Woburn	r 1780
WOB.36	Pierce, Charles A. House	59 Elm St	Woburn	c 1900
WOB.74	Carter, Frank House	64 Elm St	Woburn	c 1910
WOB.204		64 Elm St	Woburn	r 1980
WOB.75	Richardson, E. House	65 Elm St	Woburn	c 1880
WOB.205	Shannon, Thomas J. Garage	65 Elm St	Woburn	
WOB.168	Shannon, Thomas J. - Duncan, Andrew House	67R Elm St	Woburn	c 1890
WOB.76	Winn, Abigail House	69 Elm St	Woburn	r 1880
WOB.77	Perkins, Warren B. House	70 Elm St	Woburn	c 1850
WOB.3	Shaw, Lewis - Brooks, H. House	71 Elm St	Woburn	c 1800
WOB.9	Tidd, John House	74 Elm St	Woburn	1809
WOB.78	Winn House	75 Elm St	Woburn	c 1880
WOB.79	Winn House	77 Elm St	Woburn	c 1880
WOB.207	Winn Barn	77 Elm St	Woburn	c 1880
WOB.80	Alley, Charles House	79 Elm St	Woburn	1880
WOB.81	Hopkinson, Sumner House	80 Elm St	Woburn	c 1906
WOB.208	Hopkinson, Sumner Garage	80 Elm St	Woburn	c 1906
WOB.82	Flint, Frederick W. House	81 Elm St	Woburn	c 1890
WOB.11	Rumford, Count Birthplace	90 Elm St	Woburn	1714

Inv. No.	Property Name	Street	Town	Year
WOB.550	Hayward, Alpheus Shaw House	4 Fairmount St	Woburn	c 1860
WOB.551	Seminatore, Salvatore House	8 Flagg St	Woburn	c 1925
WOB.645	Whitney, Lewis Lafayette House	51 Fowle St	Woburn	c 1850
WOB.646	Whitney, Lewis Lafayette Barn	51 Fowle St	Woburn	c 1850
WOB.647	Pollard, S. O. - Cummings, Eustace Carriage House	98 Fowle St	Woburn	c 1870
WOB.83	Wyman, Arthur - Case, Walter House	1 Frances St	Woburn	c 1890
WOB.84	Tidd, Alice Stanwood - Leathe, Henry House	3 Frances St	Woburn	c 1900
WOB.85	Murdock, J. Grafton House	5 Frances St	Woburn	c 1900
WOB.86	Langill, Amos House	9 Frances St	Woburn	c 1896
WOB.87	Murdock, John K. House	10 Frances St	Woburn	1913
WOB.88	Parker, John - Hovey, H. Stillman House	12-16 Frances St	Woburn	c 1875
WOB.89	Thompson, L. Waldo House	17 Frances St	Woburn	1911
WOB.552	Flagg, George - Conn, Horace House	12 Franklin St	Woburn	c 1840
WOB.553	Bancroft, Parker Everton Double House	14-16 Franklin St	Woburn	c 1885
WOB.554	Smith, Cyrus - Wyer, Benjamin Franklin Double Hse	17-19 Franklin St	Woburn	c 1840
WOB.555	Reed, Artemas - Cummings, Joshua House	21 Franklin St	Woburn	1853
WOB.90	Gage, G. R. - Caros, Paul House	22 Franklin St	Woburn	c 1880
WOB.91	Evans, Thomas J. House	25 Franklin St	Woburn	c 1865
WOB.556	Thompson, George - Jameson, John House	27 Franklin St	Woburn	c 1840
WOB.557	Simonds, Edward - Walsh, Dennis House	30 Franklin St	Woburn	c 1849
WOB.558	Whitford, Hiram - Taylor, Susan House	32 Franklin St	Woburn	c 1845
WOB.559	Vinall, Whitney House	33 Franklin St	Woburn	c 1840
WOB.560	Harrington, Charles House	35 Franklin St	Woburn	c 1840
WOB.561	McCauley, John F. - Mahoney, John House	3 Frederick Dr	Woburn	c 1940
WOB.562	Cedario, John - Lovell, Carleton House	10 Frederick Dr	Woburn	c 1940
WOB.648	Fowle, George E. House	67 Garfield Ave	Woburn	c 1865
WOB.649	Kimball, George W. House	76 Garfield Ave	Woburn	c 1872
WOB.650	Kimball, George W. Carriage House	76 Garfield Ave	Woburn	c 1880
WOB.651	Littlefield, Joshua - Miller, William M. House	1 Glenwood St	Woburn	c 1850
WOB.652	Littlefield, Clarence House	9 Glenwood St	Woburn	c 1860
WOB.653	Littlefield, Clarence Carriage House	9 Glenwood St	Woburn	c 1860
WOB.654	Boston Edison Electric Substation	Green St	Woburn	c 1918
WOB.655	Littlefield, Joshua House	18 Green St	Woburn	c 1840
WOB.656	Pollard, Mary S. House	20 Green St	Woburn	c 1925
WOB.657	Ring, Margaret House	22 Green St	Woburn	r 1930
WOB.658	Cottle, Edmund C. - Marion, C. Walter House	25 Green St	Woburn	c 1886

Inv. No.	Property Name	Street	Town	Year
WOB.659	Frisbee, Dr. Jesse Franklin House	26 Green St	Woburn	c 1865
WOB.660	Harkins, Thomas F. Store	26A Green St	Woburn	c 1920
WOB.661	Cummings, Cyrus Jr. House	38 Green St	Woburn	c 1875
WOB.662	Lord, George - White, James N. House	88 Green St	Woburn	c 1885
WOB.663	Larson, Nelse - Casey, William E. House	116 Green St	Woburn	r 1920
WOB.54	Flagg House	129 Harrison Ave	Woburn	c 1820
WOB.678	Richardson, Joseph House	6 Hart Pl	Woburn	c 1850
WOB.679	McLeod, George House	19 Hart Pl	Woburn	1889
WOB.563	Burbank, Daniel House	25 Hawthorne St	Woburn	c 1830
WOB.664	Johnson, Edward F. House	1 Highland St	Woburn	1882
WOB.665	Lewis, Hanson Beetfield House	2A Highland St	Woburn	1851
WOB.666	McDonald, Joseph B. House	4 Highland St	Woburn	c 1870
WOB.92	Cottle, Edmund C. House	14 Highland St	Woburn	c 1875
WOB.209	Cottle, Edmund C. Carriage House	14 Highland St	Woburn	c 1875
WOB.93	Hudson, Edward W. Groundskeeper's Cottage	35 Hudson St	Woburn	c 1870
WOB.905	Revolutionary War Memorial	Johnson St	Woburn	1924
WOB.564	Gleason, Henry A. - Dickinson, Joseph Albert House	1 Johnson St	Woburn	c 1840
WOB.680	Porter, Benjamin T. H. House	2 Johnson St	Woburn	c 1865
WOB.565	Kimball, William Kilroy House	6 Johnson St	Woburn	c 1850
WOB.566	Buckman, Otis - Shattuck, Nathan J. House	7 Johnson St	Woburn	c 1840
WOB.681	Cummings, R. - Balfe, Luke House	14 Kilby St	Woburn	c 1830
WOB.682	Mulligan, Bernard House	17 Kilby St	Woburn	c 1860
WOB.683	Fox, Warren House	21 Kilby St	Woburn	c 1830
WOB.684	Wheeler, John S. House	23 Kilby St	Woburn	c 1860
WOB.686	Parker, Benjamin - Coccoluto, Cosmo House	26 Kilby St	Woburn	c 1840
WOB.685	Fox, Warren - Clements, William House	27-29 Kilby St	Woburn	c 1850
WOB.687	Buckman, Ira House	33 Kilby St	Woburn	c 1840
WOB.264		37 Kilby St	Woburn	c 1950
WOB.265		37 Kilby St	Woburn	c 1980
WOB.266		37 Kilby St	Woburn	c 1980
WOB.688	Stevens, Edwin W. House	48 Kilby St	Woburn	c 1870
WOB.689	Johnson, Oscar E. House	50 Kilby St	Woburn	c 1887
WOB.690	Fox, John William House	54 Kilby St	Woburn	1886
WOB.691	Fox, John William Carriage House	54 Kilby St	Woburn	c 1886
WOB.692	Bryenton, Amos House	60 Kilby St	Woburn	c 1891
WOB.434	Eaton, Marcus - Stuart, Dr. James N. House	61 Kilby St	Woburn	c 1866
WOB.435	Kendall, Nathaniel House	69 Kilby St	Woburn	c 1860

Inv. No.	Property Name	Street	Town	Year
WOB.693	Kenney, Kieran House	73 Kilby St	Woburn	c 1860
WOB.694	Grant, John T. - Donovan, Patrick House	74 Kilby St	Woburn	c 1893
WOB.695	Davis, Albert D. House	78 Kilby St	Woburn	c 1890
WOB.436	Knowlton, Amos House	83 Kilby St	Woburn	c 1860
WOB.696	Cook, George House	87 Kilby St	Woburn	c 1871
WOB.667	Maguire, John H. House	22 Lake Ave	Woburn	c 1880
WOB.437	McGowan, Patrick House	24 Lake Ave	Woburn	c 1880
WOB.351		34 Lake Ave	Woburn	c 1950
WOB.355		1 Lake Circ	Woburn	c 1975
WOB.352		1 Lake Terr	Woburn	c 1955
WOB.353		7 Lake Terr	Woburn	c 1958
WOB.24	Horn Pond House	7 Lakeview Terr	Woburn	c 1820
WOB.94	O'Neill, George C. - Dolan, Elizabeth House	28 Lawrence St	Woburn	c 1925
WOB.567	Ober, Benjamin H. - Manard, William House	6 Lexington St	Woburn	c 1840
WOB.568	McIntire, Joseph - Colomb, Esther House	10 Lexington St	Woburn	c 1845
WOB.569	Colomb, Esther Barn	10 Lexington St	Woburn	r 1900
WOB.570	Thompson, Benjamin F. - Vaughan, William House	12 Lexington St	Woburn	c 1820
WOB.95	Flagg, Benjamin F. - Jones, Jenkins W. House	53 Lexington St	Woburn	c 1840
WOB.210	Jones, Jenkins W. Barn	53 Lexington St	Woburn	c 1840
WOB.7	Gardner, Dea. Joseph House	168 Lexington St	Woburn	1820
WOB.96	Harris, William B. - Pierce, Theodore L. House	183 Lexington St	Woburn	c 1810
WOB.97	Collins, Agnes House	190 Lexington St	Woburn	c 1930
WOB.98	Shannon, Robert J. House	287 Lexington St	Woburn	c 1920
WOB.99	Shannon, James House	299 Lexington St	Woburn	r 1900
WOB.100	Shannon, James W. House	305 Lexington St	Woburn	c 1920
WOB.278		Library Pl	Woburn	c 1980
WOB.438	Scire, Fortunato House	11 Locust St	Woburn	1926
WOB.439	Church, Stillman H. House	2 Lowell St	Woburn	c 1880
WOB.440	Church, Stillman H. House	4-6 Lowell St	Woburn	c 1890
WOB.441	Greydon, Frank W. House	7 Lowell St	Woburn	1896
WOB.442	Minot, Robert S. House	10 Lowell St	Woburn	c 1890
WOB.13	Thompson, Leonard House	11 Lowell St	Woburn	c 1810
WOB.443	Richards, Edward H. House	12 Lowell St	Woburn	c 1890
WOB.444	Minot, Robert S. House	14 Lowell St	Woburn	c 1895
WOB.445	Greydon, William F. - Kerr, Lewis Double House	16 Lowell St	Woburn	c 1920
WOB.446	Young, William Stage House	41 Lowell St	Woburn	c 1779
WOB.101	Fowle, Timothy House	2 Lynn St	Woburn	c 1850

Inv. No.	Property Name	Street	Town	Year
WOB.104	Saint Charles Roman Catholic Elementary School	Main St	Woburn	1907
WOB.903	Woburn Civil War Memorial	Main St	Woburn	1869
WOB.907	Baldwin, Col. Loammi Statue	Main St	Woburn	1917
WOB.102	Saint Charles Roman Catholic Church Rectory	280 Main St	Woburn	1898
WOB.941	Guardian Angel Statue	280 Main St	Woburn	1912
WOB.103	Saint Charles Borromeo Roman Catholic Church	282 Main St	Woburn	1869
WOB.17	Woburn Company G - Fifth Regiment Armory	320 Main St	Woburn	1916
WOB.20	First Congregational Church in Woburn	322 Main St	Woburn	1860
WOB.105	Bank Block - Woburn Masonic Hall	395 Main St	Woburn	1862
WOB.106	Wade, Col. John Block	406 Main St	Woburn	c 1810
WOB.19	Best Petroleum - Colonial Beacon Filling Station	477 Main St	Woburn	r 1925
WOB.571	Parker, Ebenezer - Parker, John House	520 Main St	Woburn	c 1853
WOB.107	Woods, Rev. Frederick House	524 Main St	Woburn	c 1890
WOB.572	Parker, Ebenezer - Hammond, Joseph House	528 Main St	Woburn	c 1840
WOB.108	Young, Mary A. Double House	537 Main St	Woburn	c 1840
WOB.573	Madan, John Jr. - Cooper, Charles E. House	564 Main St	Woburn	c 1840
WOB.109	Hayes, Henry B. House	568 Main St	Woburn	c 1885
WOB.447	Gillette, Osborn D. House	577 Main St	Woburn	c 1895
WOB.448	Lane, Susan M. House	578 Main St	Woburn	c 1895
WOB.449	Almore, The	579 Main St	Woburn	c 1920
WOB.450	Lane, Susan M. - Callahan, Daniel F. House	580 Main St	Woburn	c 1895
WOB.451		581 Main St	Woburn	c 1926
WOB.452	Lane, Susan M. House	582 Main St	Woburn	c 1904
WOB.453	Wyman, Elijah House	590 Main St	Woburn	r 1800
WOB.454	Wyman, Elijah Barn	592 Main St	Woburn	c 1910
WOB.455	Main Street School	595 Main St	Woburn	1794
WOB.110	Ames, Erskine House	596 Main St	Woburn	c 1830
WOB.111	Prior, William A. House	602 Main St	Woburn	r 1890
WOB.112	Murdock, John K. House	604 Main St	Woburn	c 1895
WOB.211	Murdock, John K. Carriage House	604 Main St	Woburn	c 1895
WOB.113	Wade - Wyman, Walter House	605 Main St	Woburn	c 1840
WOB.212	Burdett, C. Fred Garage	605 Main St	Woburn	c 1930
WOB.114	Hartshorne, George Franklin House	607 Main St	Woburn	c 1891
WOB.115	Beggs, Mary House	616 Main St	Woburn	c 1900
WOB.116	Beggs, William House	620 Main St	Woburn	c 1890
WOB.117	Burdett, Fred Hartshorne House	623 Main St	Woburn	c 1895
WOB.118	Conn, Horace - Place, Griffin House	627 Main St	Woburn	c 1868

Inv. No.	Property Name	Street	Town	Year
WOB.119	Place, Everett Griffin House	628 Main St	Woburn	c 1890
WOB.120	Trull, S. Franksford House	629 Main St	Woburn	c 1895
WOB.456		632 Main St	Woburn	c 1900
WOB.457	Pearson, John T. House	635 Main St	Woburn	c 1840
WOB.458	Wyman, W. House	636 Main St	Woburn	r 1830
WOB.459	Fox, Everett House	637 Main St	Woburn	c 1880
WOB.460	Slater, William H. House	639 Main St	Woburn	c 1875
WOB.461	Clement, Albert A. Double House	643-645 Main St	Woburn	c 1880
WOB.462	Buckman, Francis Alvah House	644 Main St	Woburn	c 1885
WOB.463	Buckman, Christina House	646 Main St	Woburn	c 1915
WOB.8	Thompson, Daniel House	649 Main St	Woburn	1760
WOB.464	Thompson, Jonathan House	650 Main St	Woburn	c 1860
WOB.465	Parker, Samuel P. Harness- Upholstery Shop	653 Main St	Woburn	r 1820
WOB.466	Central Square Fire Station	654 Main St	Woburn	1906
WOB.467	Rigby, George Grocery Store	658 Main St	Woburn	c 1880
WOB.14	Guastavino, R. Ceramic Tile Factory and Showroom	660 Main St	Woburn	1907
WOB.468	Flagg, Charles House	662 Main St	Woburn	c 1870
WOB.469	Wyman, Charles Austin House	663 Main St	Woburn	c 1850
WOB.470	Stone, Clinton C. House	664 Main St	Woburn	c 1870
WOB.471		668 Main St	Woburn	c 1880
WOB.472	Wyman, Charles Austin House	670 Main St	Woburn	c 1870
WOB.121	Wyman Grammar School	677 Main St	Woburn	1891
WOB.473	Parker, Josiah House	706 Main St	Woburn	c 1847
WOB.474	Adlington, William - Graham, James R. House	707 Main St	Woburn	c 1840
WOB.475	Tenney, Patrick H. House	750 Main St	Woburn	c 1906
WOB.476	Johnson, Robert - Leen, Henry M. House	751 Main St	Woburn	1922
WOB.12	1790 House	827 Main St	Woburn	c 1790
WOB.44		848 Main St	Woburn	c 1830
WOB.122	Saint Anthony Roman Catholic Church	859 Main St	Woburn	1927
WOB.213	Saint Anthony Roman Catholic Church Garage	859 Main St	Woburn	1927
WOB.942	Virgin Mary Immaculate Conception Statue	859 Main St	Woburn	
WOB.943	Saint Anthony Statue	859 Main St	Woburn	
WOB.944	Knights of Columbus Memorial to the Unborn	859 Main St	Woburn	1995
WOB.123	North Congregational Church	896 Main St	Woburn	1882
WOB.21	Main Street Diner	901 Main St	Woburn	1952
WOB.45	Winn, Col. Moses F. House	903 Main St	Woburn	c 1830
WOB.249		985 Main St	Woburn	c 1970

Inv. No.	Property Name	Street	Town	Year
WOB.247		1011 Main St	Woburn	c 1970
WOB.246		1021 Main St	Woburn	c 1930
WOB.245		1023 Main St	Woburn	c 1920
WOB.243		1037 Main St	Woburn	c 1885
WOB.239		1071R Main St	Woburn	c 1959
WOB.237		1075 Main St	Woburn	c 1963
WOB.236		1077 Main St	Woburn	c 1910
WOB.235		1081 Main St	Woburn	1890
WOB.234		1082 Main St	Woburn	c 1921
WOB.575	Tay, William Jr. - Wood, Robert House	1083 Main St	Woburn	r 1780
WOB.233		1098 Main St	Woburn	c 1985
WOB.232		1100 Main St	Woburn	c 1956
WOB.241		2 Massachusetts Ave	Woburn	c 1900
WOB.242		7 Massachusetts Ave	Woburn	c 1950
WOB.257		2 Merrimac St	Woburn	c 2003
WOB.258		10 Merrimac St	Woburn	c 1967
WOB.945	Middlesex Canal	Middlesex Canal	Woburn	c 1802
WOB.274		2 Middlesex St	Woburn	c 1997
WOB.22	Middlesex Canal Tollkeeper's House	5 Middlesex St	Woburn	c 1802
WOB.909	Mishawum Road Bridge over Route 128	Mishawum Rd	Woburn	1961
WOB.124	Burdett, Charles A. House	7 Mishawum Rd	Woburn	c 1880
WOB.125	Fox, Everett P. House	8 Mishawum Rd	Woburn	c 1895
WOB.126	Richardson, Frank B. House	9 Mishawum Rd	Woburn	c 1895
WOB.127	Beggs, Daniel R. House	11 Mishawum Rd	Woburn	c 1899
WOB.128	Beggs, Thomas G. Jr. House	12 Mishawum Rd	Woburn	c 1920
WOB.129	Blodgett, William E. House	14 Mishawum Rd	Woburn	c 1895
WOB.214	Varney, Lloyd Garage	14 Mishawum Rd	Woburn	c 1965
WOB.130	Fox, John William - Glaser, Charles House	15 Mishawum Rd	Woburn	c 1889
WOB.477	Hovey, Eveline House	17 Mishawum Rd	Woburn	1886
WOB.478	Blodgett, Malcolm House	18 Mishawum Rd	Woburn	1922
WOB.479	Waughn, George W. House	19 Mishawum Rd	Woburn	c 1885
WOB.480	Chute, William Prior Jr. - Johnson, Dexter House	20 Mishawum Rd	Woburn	1917
WOB.481	Dean, Joseph - Bancroft, Hartwell House	21 Mishawum Rd	Woburn	c 1800
WOB.482	Bancroft, Charles H. Double House	23-25 Mishawum Rd	Woburn	c 1890
WOB.483	Tuttle, Samuel L. - Sweetser, Charles A. House	24 Mishawum Rd	Woburn	1870
WOB.484	Mundy, John House	26 Mishawum Rd	Woburn	c 1850
WOB.485	Brooks, Andrew Bigelow House	30 Mishawum Rd	Woburn	c 1850
WOB.486	Vacant Lot	31 Mishawum Rd	Woburn	c 1910

Inv. No.	Property Name	Street	Town	Year
WOB.487	Eames, Henry House	35 Mishawum Rd	Woburn	c 1906
WOB.488	Parker, Robert W. Double House	37-39 Mishawum Rd	Woburn	c 1880
WOB.489	Eames, Henry Martin House	38 Mishawum Rd	Woburn	c 1860
WOB.490	Sleeper, Moses W. - Blye, Harrie House	66 Mishawum Rd	Woburn	c 1880
WOB.900	Montvale Avenue Bridge over B & M Railroad	Montvale Ave	Woburn	1917
WOB.131	Woburn Company G 5th Regiment Armory	29 Montvale Ave	Woburn	1891
WOB.132	Woburn Swedish Evangelical Lutheran Church	29A Montvale Ave	Woburn	1898
WOB.133	Bean, Gilman A. House	47 Montvale Ave	Woburn	1874
WOB.134	Gage, Gawin Riddle House	51 Montvale Ave	Woburn	c 1870
WOB.491	Leighton, F. M. - Johnson, Charles House	65 Montvale Ave	Woburn	c 1870
WOB.135	Skinner, James House	79 Montvale Ave	Woburn	1875
WOB.576	Stabile, Pasquale - Donahue, Mary House	81 Montvale Ave	Woburn	c 1930
WOB.577	Bezatti, Edward House	83 Montvale Ave	Woburn	c 1930
WOB.578	Begley, John House	85 Montvale Ave	Woburn	c 1930
WOB.579	Spencer, Julia - McDonough, Harold House	87 Montvale Ave	Woburn	c 1929
WOB.492	Fowle, J. House	91-93 Montvale Ave	Woburn	c 1850
WOB.580	Hastings, Oliver - Hill, Jotham House	97 Montvale Ave	Woburn	r 1820
WOB.581	Swallow, Rev. J. E. - Taylor, Edward E. House	99 Montvale Ave	Woburn	c 1860
WOB.582	Hall, Capt. George W. M. House	101 Montvale Ave	Woburn	c 1860
WOB.583	Converse, John - Floyd, William House	110 Montvale Ave	Woburn	c 1800
WOB.584	Trull, Dr. Samuel - Yates, James House	111 Montvale Ave	Woburn	c 1856
WOB.585	Maquire, John G. House	113 Montvale Ave	Woburn	c 1887
WOB.136	Pollard, F. - True, John S. House	120 Montvale Ave	Woburn	1871
WOB.586	Moore, Charles - Ford, Howard M. House	129 Montvale Ave	Woburn	c 1850
WOB.587	Barber, Joseph F. - Linnell, Joseph House	133 Montvale Ave	Woburn	c 1870
WOB.588	Stevens, Frank - Brown, Charles A. House	135 Montvale Ave	Woburn	c 1860
WOB.697	Boutelle, Theodore House	138 Montvale Ave	Woburn	c 1890
WOB.698	Bishop, Harry S. - Elson, Alfred House	142 Montvale Ave	Woburn	c 1890
WOB.700	Waisnor, William Double House	144-146 Montvale Ave	Woburn	c 1890
WOB.701	Anderson, Peter House	147 Montvale Ave	Woburn	c 1900
WOB.702	Donovan, James P. House	160 Montvale Ave	Woburn	c 1890
WOB.703	Corry, Robert J. House	162 Montvale Ave	Woburn	c 1916
WOB.704	Johnson, John G. House	166 Montvale Ave	Woburn	c 1890
WOB.589	Tucker, Hannah - Prentice, Daniel House	192 Montvale Ave	Woburn	c 1850
WOB.705	Mahoney, Timothy House	197 Montvale Ave	Woburn	c 1860
WOB.706	Jones, Charles S. House	239 Montvale Ave	Woburn	1889
WOB.707	Pettingill, William House	251 Montvale Ave	Woburn	c 1850
WOB.708	McDonald, Patrick House	269 Montvale Ave	Woburn	1909

Inv. No.	Property Name	Street	Town	Year
WOB.709	Ramsdell, Henry - Cogan, Patrick Double House	284 Montvale Ave	Woburn	c 1860
WOB.590	Woburn Agricultural Manufacturing Boarding House	286 Montvale Ave	Woburn	1837
WOB.591	Woburn Agricultural Manufacturing Boarding House	288 Montvale Ave	Woburn	1837
WOB.592	Woburn Agricultural Manufacturing Boarding House	290 Montvale Ave	Woburn	1837
WOB.593	Woburn Agricultural Manufacturing Boarding House	292 Montvale Ave	Woburn	1837
WOB.699	Bishop, Harry S. - Elson, Alfred Barn	142 Montvale St	Woburn	c 1890
WOB.668	Whitcher, Jacob C. House	8 Mount Pleasant St	Woburn	c 1872
WOB.669	Stewart, Donald W. - Chester, Thomas House	10 Mount Pleasant St	Woburn	c 1875
WOB.670	Stewart, Donald W. Barn	10R Mount Pleasant St	Woburn	c 1875
WOB.671	Oxford, Charles - Bryant, Grace Marion House	47 Mount Pleasant St	Woburn	c 1860
WOB.672	Allen, George W. - Wyer, Capt. Edwin F. House	50 Mount Pleasant St	Woburn	c 1860
WOB.673	Conn, Charles Kyler House	53 Mount Pleasant St	Woburn	c 1865
WOB.137	Conn, George H. - Bickford, Dr. H. C. House	62 Mount Pleasant St	Woburn	1873
WOB.138	Saint Charles Roman Catholic Parish School	8 Myrtle St	Woburn	1921
WOB.288		1 North Warren St	Woburn	c 1920
WOB.594	Ellard - Larkin, John F. House	8 North Warren St	Woburn	r 1820
WOB.595	Murray, Patrick H. - Martin, Philip House	39 North Warren St	Woburn	c 1880
WOB.596	Burbank, Daniel Poultry House	34 Orange St	Woburn	r 1889
WOB.597	New Jerusalem Swedenborgian Chapel	36 Orange St	Woburn	1868
WOB.598	Montvale Congregational Church Parsonage	36 Orange St	Woburn	c 1945
WOB.493	Kenty, Frederick W. House	6 Page Pl	Woburn	c 1900
WOB.494	Sherburne, William Alexander House	8 Page Pl	Woburn	c 1890
WOB.495	Wallace, John M. House	10 Page Pl	Woburn	c 1890
WOB.496	Page, Catherine - Robinson, Albert H. House	11 Page Pl	Woburn	c 1870
WOB.497	Wallace, John M. - Crowell, Clarence M. House	12 Page Pl	Woburn	c 1890
WOB.498	Robinson, Carrie Page House	13 Page Pl	Woburn	c 1906
WOB.499	Burnes, Clara M. House	14 Page Pl	Woburn	c 1930
WOB.500	Robinson, Carrie Page Double House	15-17 Page Pl	Woburn	c 1890
WOB.800	Woburn First Burial Ground	Park St	Woburn	1642
WOB.917	Woburn First Burial Ground Perimeter Wall	Park St	Woburn	r 1850
WOB.918	Woburn First Burial Ground Chain Link Fence	Park St	Woburn	r 1980
WOB.919	Woburn First Burial Ground Path, Plaza & Flagpole	Park St	Woburn	r 1980
WOB.920	First Burial Ground - Convers, Ann Headstone	Park St	Woburn	c 1691
WOB.921	First Burial Ground - Thomson, Lt. James Headstone	Park St	Woburn	c 1693

Inv. No.	Property Name	Street	Town	Year
WOB.922	First Burial Ground - Wyman, Francis Headstone	Park St	Woburn	c 1699
WOB.923	First Burial Ground - Johnson, Sarah Headstone	Park St	Woburn	c 1710
WOB.924	First Burial Ground - Fyfeild, Abraham Headstone	Park St	Woburn	c 1711
WOB.925	First Burial Ground - Richardson, Samuel Headstone	Park St	Woburn	c 1712
WOB.926	First Burial Ground - Burbeen, John Headstone	Park St	Woburn	c 1713
WOB.927	First Burial Ground - Wyman, Benjamin Headstone	Park St	Woburn	c 1774
WOB.928	First Burial Ground - Thompson, Daniel Headstone	Park St	Woburn	c 1775
WOB.929	First Burial Ground - Gardner, Dorothy Headstone	Park St	Woburn	c 1787
WOB.930	First Burial Ground - Pool, Eleazar F. Headstone	Park St	Woburn	c 1776
WOB.931	First Burial Ground - Brook, Benjamin Headstone	Park St	Woburn	c 1769
WOB.932	First Burial Ground - Wyman, Abigail Headstone	Park St	Woburn	c 1772
WOB.933	First Burial Ground - Tyng, Judith Headstone	Park St	Woburn	c 1736
WOB.934	First Burial Ground - Baldwin Family Obelisk	Park St	Woburn	r 1820
WOB.935	First Burial Ground - Fowle, James Monument	Park St	Woburn	c 1856
WOB.936	First Burial Ground - Commemorative Plaques	Park St	Woburn	r 1980
WOB.28	Downing, Jonathan - Parkhurst, George House	48 Pearl St	Woburn	c 1860
WOB.29	Tuttle, Mary - White, Hugh House	52 Pearl St	Woburn	c 1870
WOB.139	Locke House	61 Pearl St	Woburn	c 1800
WOB.215	Locke Barn	61 Pearl St	Woburn	
WOB.30	Reed, Moses D. - Howard, J. P. House	66 Pearl St	Woburn	r 1835
WOB.31	Thayer, Howard - Duffy, Thomas E. Double House	68 Pearl St	Woburn	c 1910
WOB.32	Eaton, Edwin House	70 Pearl St	Woburn	c 1870
WOB.33	Green, Charles B. House	72 Pearl St	Woburn	r 1865
WOB.140	Page, John O. - Hall, Charles A. House	76 Pearl St	Woburn	c 1800
WOB.141	Poole, Rufus F. House	88 Pearl St	Woburn	c 1890
WOB.142	Tidd, Jonathan House	89 Pearl St	Woburn	c 1700
WOB.216	Watson, Abby Tidd Garage	89 Pearl St	Woburn	r 1920
WOB.143	Fridolin, Julius Double House	90 Pearl St	Woburn	c 1906
WOB.144	Andersen, M. Peter House	94 Pearl St	Woburn	1914
WOB.145	Pierce, Andrew House	108 Pearl St	Woburn	c 1840
WOB.146	Greenan, William Double House	121 Pearl St	Woburn	r 1900
WOB.147	Carter, Alfred G. House	125 Pearl St	Woburn	c 1870
WOB.599	Hermann, Alfred House	16 Pine St	Woburn	1914
WOB.600	Leech, Henry E. House	20 Pine St	Woburn	1923

Inv. No.	Property Name	Street	Town	Year
WOB.601	Wright, Thomas J. - Cornett, Frank House	40 Pine St	Woburn	c 1904
WOB.501	Kent, George House	100 Pine St	Woburn	c 1925
WOB.602	Place, Griffin - Cook, William House	7 Place Ln	Woburn	r 1780
WOB.148	Woburn Congregational Church	1 Pleasant St	Woburn	r 1850
WOB.149	Woburn Five Cents Savings Bank	19 Pleasant St	Woburn	1931
WOB.6	Woburn Public Library	45 Pleasant St	Woburn	c 1876
WOB.906	Count Rumford Statue	45 Pleasant St	Woburn	1899
WOB.150	Craigin, Francis K. Double House	57 Pleasant St	Woburn	c 1870
WOB.283		61 Pleasant St	Woburn	c 1900
WOB.284		69 Pleasant St	Woburn	c 1910
WOB.287		71 Pleasant St	Woburn	c 1950
WOB.151	Winn, Joseph House	73 Pleasant St	Woburn	c 1860
WOB.152	West - Chute, William Prior House	82 Pleasant St	Woburn	c 1880
WOB.217	West - Chute, William Carriage House	82 Pleasant St	Woburn	c 1880
WOB.153	Gifford, Seth T. House	83 Pleasant St	Woburn	c 1880
WOB.154	Pierce, Maj. Thomas Jefferson House	84 Pleasant St	Woburn	c 1870
WOB.155	Crosby, Rufus P. House	85 Pleasant St	Woburn	c 1870
WOB.603	Winn, Joseph B. House	96 Pleasant St	Woburn	c 1840
WOB.156	Winn, William H. House	103 Pleasant St	Woburn	c 1850
WOB.157	Leonard, Christopher Double House	105-107 Pleasant St	Woburn	c 1880
WOB.604	Trull, George - Bacon, Mary B. House	106 Pleasant St	Woburn	c 1840
WOB.605	Chickering, Rev. Joseph - Bacon, Oliver House	115 Pleasant St	Woburn	c 1810
WOB.158	Dow, Stephen - Ellis, George F. House	131 Pleasant St	Woburn	c 1840
WOB.606	Thompson, Abijah - Dow, Stephen House	132 Pleasant St	Woburn	c 1825
WOB.502	Lyons, Thomas F. House	136 Pleasant St	Woburn	1933
WOB.159	Doyle, John B. House	137 Pleasant St	Woburn	c 1850
WOB.503	Finn, George House	138 Pleasant St	Woburn	1933
WOB.504	Simonds, Marshall House	143 Pleasant St	Woburn	c 1890
WOB.505	Thompson, Benjamin Franklin - Frost, Walter House	146 Pleasant St	Woburn	c 1820
WOB.506	Symmes, Zachariah - Doherty, John N. House	147 Pleasant St	Woburn	c 1815
WOB.160	Clark, George F. House	149 Pleasant St	Woburn	1846
WOB.507	Johnson, Joseph House	151 Pleasant St	Woburn	1846
WOB.508	Buss, Dr. Charles H. House	15 Plympton St	Woburn	1913
WOB.674	Hudson, Edward W. - Keany, Terrence House	34 Porter St	Woburn	r 1860
WOB.675	Whitcher, Jacob C. - Began, Timothy House	42 Prospect St	Woburn	r 1873
WOB.161	Cole, John G. - Giles, Royal House	62 Prospect St	Woburn	c 1856
WOB.162	Ferullo, Luigi House	7 Richmond Ave	Woburn	c 1900

Inv. No.	Property Name	Street	Town	Year
WOB.218	Ferullo Garage	7 Richmond Ave	Woburn	c 1980
WOB.908	Route 128 Bridge over Route 38 (Westbound)	Rt 128	Woburn	1949
WOB.910	Route 128 Bridge over Boston and Maine Railroad	Rt 128	Woburn	1950
WOB.911	Route 128 Bridge over Route 38 (Eastbound)	Rt 128	Woburn	1949
WOB.912	Route 128 Bridge over Aberjona River	Rt 128	Woburn	1949
WOB.916	Walnut Hill Bridge	Salem St	Woburn	1928
WOB.163	Converse, Parker Lindall House	10 Salem St	Woburn	c 1870
WOB.219	Converse, Parker Lindall Outbuilding	10 Salem St	Woburn	c 1870
WOB.164	Perry, Florence Clemson House	178 Salem St	Woburn	c 1920
WOB.165	Heald, Walter House	184 Salem St	Woburn	c 1916
WOB.166	Maplewood Farm	372 Salem St	Woburn	c 1910
WOB.220	Hayward, Martin Barn	372 Salem St	Woburn	c 1850
WOB.221	Schneider Dairy Farm Milkhouse	372 Salem St	Woburn	c 1910
WOB.222	Maplewood Farm Blacksmith Shop	372 Salem St	Woburn	
WOB.710	McFeeley, James House	36 School St	Woburn	c 1871
WOB.711	Ames, Henry Lyman House	170 School St	Woburn	r 1830
WOB.607	Thompson, Lewis Waldo - McMahon, Frank House	10 Scott St	Woburn	c 1885
WOB.608	Thompson, Lewis Waldo - Rooney, Henry J. House	12 Scott St	Woburn	c 1900
WOB.609	Thompson, Lewis Waldo - Clemson, Frederick House	14 Scott St	Woburn	c 1900
WOB.610	Thompson, Lewis Waldo - Carr, Alice House	16 Scott St	Woburn	c 1900
WOB.611	Deland, Joseph Foster House	19-21 Scott St	Woburn	c 1874
WOB.612	Wyman, Nathan House	22 Scott St	Woburn	c 1865
WOB.613	MacDonald, John House	31 Scott St	Woburn	c 1919
WOB.676	Barker, George G. - Campbell, Donald House	14 South St	Woburn	c 1895
WOB.167	DeLong, James F. Three Decker	11 Sturgis St	Woburn	r 1915
WOB.712	Wyman, William P. House	14 Sturgis St	Woburn	c 1850
WOB.713	Hudson, Edward W. House	30 Sturgis St	Woburn	c 1875
WOB.169	Ray, George House	3 Tidd Ave	Woburn	c 1890
WOB.37	Pierce, Charles A. Carriage House	4 Tidd Ave	Woburn	c 1900
WOB.170	Torry, Richard - Veno, George House	5 Tidd Ave	Woburn	c 1890
WOB.171	Bond, Daniel Wilbur House	6 Tidd Ave	Woburn	c 1902
WOB.172	Healey, Francis C. House	1 Traverse St	Woburn	c 1900
WOB.223	Healey, Francis C. Garage	1 Traverse St	Woburn	
WOB.173	Cutler, Warren - Thompson, Jonathan House	7 Traverse St	Woburn	c 1860
WOB.174	Tidd, Marshall - Flint, Frederick House	19 Traverse St	Woburn	c 1870

Inv. No.	Property Name	Street	Town	Year
WOB.224	Bond, Lewis F. Garage	19 Traverse St	Woburn	c 1926
WOB.175	Hartshorn, S. A. House	60 Union St	Woburn	c 1880
WOB.509	Murphy, James H. House	6 Valley Rd	Woburn	1925
WOB.285		1 Wade Pl	Woburn	c 1920
WOB.286		1 Wade Pl	Woburn	c 1910
WOB.282		7 Wade Pl	Woburn	c 1920
WOB.714	Menchin, Frank House	96 Waltham St	Woburn	1894
WOB.176	Foucar, Mary M. House	4 Ward St	Woburn	c 1906
WOB.225	Foucar, Mary M. Garage	4 Ward St	Woburn	
WOB.177	Merrill, William R. House	6 Ward St	Woburn	c 1870
WOB.226		6 Ward St	Woburn	
WOB.178	Carlberg, Carl House	9 Ward St	Woburn	c 1906
WOB.38	Tidd, Marshall House	11 Ward St	Woburn	r 1820
WOB.179	Tidd, Arthur W. House	15 Ward St	Woburn	c 1910
WOB.180	Edgecomb, Noah House	18 Ward St	Woburn	c 1848
WOB.181	Tidd, Jonathan House	23 Ward St	Woburn	c 1870
WOB.182	Bond, Charles House	30 Ward St	Woburn	c 1870
WOB.227	Colvin, John Garage	30 Ward St	Woburn	1918
WOB.289	Thompson, Jonathan - Tidd, Marshall House	1 Warren Ave	Woburn	c 1835
WOB.183	Grammer, Col. William T. House	14 Warren Ave	Woburn	c 1875
WOB.18	Hayden, Edward D. House	17 Warren Ave	Woburn	c 1892
WOB.184	Munroe, John I. House	26 Warren Ave	Woburn	1894
WOB.185	Dow, Alfred A. House	31 Warren Ave	Woburn	c 1870
WOB.186	Fagg, Stephen D. House	35 Warren Ave	Woburn	c 1910
WOB.228	Fagg, Stephen D. Garage	35 Warren Ave	Woburn	c 1910
WOB.187	Nichols, Benjamin Harrison House	37 Warren Ave	Woburn	c 1890
WOB.188	Duncan, Robert - Barker, E. Gerry House	39 Warren Ave	Woburn	c 1890
WOB.189	Munroe, George J. House	43 Warren Ave	Woburn	c 1870
WOB.229	Munroe, George J. Garage	43 Warren Ave	Woburn	c 1870
WOB.190	Crane, Capt. John P. House	48 Warren Ave	Woburn	c 1875
WOB.614	Wyman, Amasa - Allen, George W. House	150 Washington Cir	Woburn	r 1780
WOB.615	Hadley - Allen, George W. House	152 Washington Cir	Woburn	c 1800
WOB.628	Anshei Poland Cemetery Chapel	Washington St	Woburn	1922
WOB.629	Congregation Ohel Jacob Cemetery Chapel	Washington St	Woburn	
WOB.630	Chevra Kadusha of Boston Cemetery Chapel	Washington St	Woburn	c 1903
WOB.631	Pride of Boston Cemetery Chapel	Washington St	Woburn	c 1980
WOB.632	Shari Jerusalem Chevra Thilim Cemetery Chapel	Washington St	Woburn	
WOB.633	Anshe Libavitz Cemetery Chapel	Washington St	Woburn	

Inv. No.	Property Name	Street	Town	Year
WOB.634	Knights of Liberty Cemetery Chapel	Washington St	Woburn	1941
WOB.801	Anshei Poland Cemetery	Washington St	Woburn	c 1900
WOB.802	Beth Joseph #1 Cemetery	Washington St	Woburn	c 1908
WOB.803	Meretz Cemetery	Washington St	Woburn	1893
WOB.804	Beth David Cemetery	Washington St	Woburn	c 1906
WOB.805	Beth David #2 Cemetery	Washington St	Woburn	c 1906
WOB.806	Montefiore Cemetery	Washington St	Woburn	c 1906
WOB.807	Chebra Kadisha of Chelsea Cemetery	Washington St	Woburn	c 1899
WOB.808	Congregation Ohel Jacob and East Boston Cemetery	Washington St	Woburn	c 1906
WOB.809	South Boston Lodge Cemetery	Washington St	Woburn	c 1906
WOB.810	Roxbury Mutual Cemetery	Washington St	Woburn	c 1898
WOB.811	Kenesseth Israel Cemetery	Washington St	Woburn	c 1899
WOB.812	Chevra Kadusha of Boston Cemetery	Washington St	Woburn	c 1903
WOB.813	United Congregation Beth Jacob Cemetery	Washington St	Woburn	c 1902
WOB.814	Puritan - Mount Sinai Cemetery	Washington St	Woburn	c 1906
WOB.815	Pride of Boston Cemetery A	Washington St	Woburn	c 1897
WOB.816	Pride of Boston Cemetery B	Washington St	Woburn	c 1897
WOB.817	Pride of Boston Cemetery C	Washington St	Woburn	c 1897
WOB.818	Pride of Boston Cemetery D	Washington St	Woburn	c 1897
WOB.819	Agudath Achim Cemetery	Washington St	Woburn	c 1906
WOB.820	Shari Jerusalem Chevra Thilim Cemetery	Washington St	Woburn	c 1906
WOB.821	Anshe Libavitz Cemetery	Washington St	Woburn	c 1899
WOB.822	Woburn Hebrew Center Cemetery	Washington St	Woburn	c 1945
WOB.823	Beth Joseph #3 Cemetery	Washington St	Woburn	c 1906
WOB.824	Knights of Liberty Cemetery	Washington St	Woburn	c 1903
WOB.825	Independent Pride of Boston Cemetery	Washington St	Woburn	c 1900
WOB.826	Independent Golden Crown Cemetery	Washington St	Woburn	c 1906
WOB.827	American Austrian - City of Boston Lodge Cemetery	Washington St	Woburn	c 1906
WOB.828	Chevra Mishnias Cemetery	Washington St	Woburn	c 1906
WOB.946	Anshei Poland Cemetery Gate and Fence	Washington St	Woburn	
WOB.947	Meretz Cemetery Gate and Fence	Washington St	Woburn	c 1914
WOB.948	Beth David #2 Cemetery Gate and Fence	Washington St	Woburn	
WOB.949	Beth Joseph Cemetery #2 - Wolkon, Rose Tablet	Washington St	Woburn	c 1974
WOB.950	Montefiore Cemetery Gate - Fence - Tablets	Washington St	Woburn	1924
WOB.951	Chebra Kadisha of Chelsea Cemetery Gate	Washington St	Woburn	
WOB.952	Chebra Kadisha of Chelsea Cemetery Fence	Washington St	Woburn	

Inv. No.	Property Name	Street	Town	Year
WOB.953	Congregation Ohel Jacob Cemetery Gate and Fence	Washington St	Woburn	
WOB.954	South Boston Lodge Cemetery Gate and Fence	Washington St	Woburn	
WOB.955	Roxbury Mutual Cemetery Gate and Fence	Washington St	Woburn	1930
WOB.956	Kenesseth Israel Cemetery Gate and Fence	Washington St	Woburn	
WOB.957	Kenesseth Israel Cemetery Tablets	Washington St	Woburn	1899
WOB.958	Kenesseth Israel Cemetery Tablet	Washington St	Woburn	1899
WOB.959	Kenesseth Israel Cemetery Tablet	Washington St	Woburn	1899
WOB.960	Chevra Kadusha of Boston Cemetery Gate and Fence	Washington St	Woburn	1925
WOB.961	United Congregation Beth Jacob Cemetery Gate	Washington St	Woburn	c 1970
WOB.962	Puritan - Mount Sinai Cemetery Gate and Fence	Washington St	Woburn	
WOB.963	Pride of Boston Cemetery Gate and Wall	Washington St	Woburn	c 1930
WOB.964	Pride of Boston Cemetery Gate and Fence	Washington St	Woburn	
WOB.965	Agudath Achim Cemetery Gate and Fence	Washington St	Woburn	
WOB.966	Shari Jerusalem Chevra Thilim Cemetery Gate	Washington St	Woburn	
WOB.967	Anshe Libavitz Cemetery Gate	Washington St	Woburn	
WOB.968	Anshe Libavitz Cemetery Fence	Washington St	Woburn	
WOB.969	Woburn Hebrew Center Cemetery Gate and Plaque	Washington St	Woburn	1945
WOB.970	Beth Joseph #3 Cemetery Gates	Washington St	Woburn	
WOB.971	Beth Joseph #3 Cemetery Marker	Washington St	Woburn	
WOB.972	Knights of Liberty Cemetery Fence	Washington St	Woburn	
WOB.973	Independent Pride of Boston Cemetery Tablet	Washington St	Woburn	1900
WOB.974	Independent Pride of Boston Cemetery Tablet	Washington St	Woburn	1931
WOB.975	Independent Golden Crown Cemetery Gate	Washington St	Woburn	
WOB.976	American Austrian Cemetery Gate	Washington St	Woburn	1922
WOB.977	City of Boston Lodge Cemetery Gate and Fence	Washington St	Woburn	
WOB.978	Chevra Mishnias Cemetery Gate and Fence	Washington St	Woburn	
WOB.616	Hayward, Nathaniel - Macfarlane, Duncan House	72 Washington St	Woburn	c 1840
WOB.25	Saint Joseph's Roman Catholic Church	100 Washington St	Woburn	1877
WOB.937	Immaculate Conception Statue	100 Washington St	Woburn	1926
WOB.938	Saint Jude Statue	100 Washington St	Woburn	
WOB.939	Gillis, Shawn - Carroll, Paul Monument	100 Washington St	Woburn	
WOB.617	Knights, John II - Nelson, James House	10 Water St	Woburn	c 1840
WOB.618	Eaton, Timothy - Devlin, John House	12 Water St	Woburn	r 1840
WOB.256		10 West Dexter Ave	Woburn	c 1983
WOB.191	Thompson, Samuel A. House	7 West St	Woburn	c 1885
WOB.192	Lyng, Arthur House	11 West St	Woburn	c 1932

Inv. No.	Property Name	Street	Town	Year
WOB.193	Flaws, James House	16 West St	Woburn	c 1930
WOB.194	Bell, James D. - Rollins, Elijah Jr. House	25 West St	Woburn	c 1860
WOB.195	Fowle, James House	26 West St	Woburn	c 1920
WOB.196	Sevrens, Urial House	30 West St	Woburn	c 1895
WOB.244		2 Wheeling St	Woburn	c 1940
WOB.510	Cummings, Lottie - Wilcox, Walter L. House	6 Wilcox Cir	Woburn	1898
WOB.511	Cummings, M. - Newman, John Hawkins House	74 Willow St	Woburn	c 1870
WOB.512	Taylor, Sewell 2nd House	75 Willow St	Woburn	1864
WOB.513	Colgate, William A. - Aylward, Michael J. House	78 Willow St	Woburn	1851
WOB.620	Winn and Lane Row House	Winn Pk	Woburn	c 1880
WOB.619	Winn and Lane Row House	2-12 Winn Pk	Woburn	c 1880
WOB.197	Woburn First Baptist Church	3 Winn St	Woburn	1926
WOB.621	Woburn First Baptist Church Parsonage	7 Winn St	Woburn	c 1895
WOB.35	Tillson, David H. House	56 Winn St	Woburn	c 1850
WOB.275		100 Winn St	Woburn	c 1964
WOB.622	Henchey, James H. House	122 Winn St	Woburn	c 1880
WOB.623	Ryan, John J. House	126 Winn St	Woburn	1913
WOB.624	Barnes, James - O'Hare, Fannie Double House	127-129 Winn St	Woburn	c 1890
WOB.625	Boviard, James - Palage, Harry House	131 Winn St	Woburn	c 1929
WOB.198	Caulfield, Dr. Peter House	160 Winn St	Woburn	1908
WOB.514	Richardson, S. S. House	2 Wyman St	Woburn	c 1840
WOB.626	Wheaton, Frank E. House	7 Wyman St	Woburn	c 1924
WOB.627	Chute, Susan - Cummings, Joanna House	21 Wyman St	Woburn	c 1925

Massachusetts Cultural Resource Information System

MACRIS

MACRIS Search Results

Search Criteria: Town(s): Woburn; Street Name: Winn St; Resource Type(s): Area, Building, Burial Ground, Object, Structure;

Inv. No.	Property Name	Street	Town	Year
WOB.197	Woburn First Baptist Church	3 Winn St	Woburn	1926
WOB.621	Woburn First Baptist Church Parsonage	7 Winn St	Woburn	c 1895
WOB.35	Tillson, David H. House	56 Winn St	Woburn	c 1850
WOB.275		100 Winn St	Woburn	c 1964
WOB.622	Henchey, James H. House	122 Winn St	Woburn	c 1880
WOB.623	Ryan, John J. House	126 Winn St	Woburn	1913
WOB.624	Barnes, James - O'Hare, Fannie Double House	127-129 Winn St	Woburn	c 1890
WOB.625	Boviard, James - Palage, Harry House	131 Winn St	Woburn	c 1929
WOB.198	Caulfield, Dr. Peter House	160 Winn St	Woburn	1908