



November 26, 2019

US Environmental Protection Agency
Office of Ecosystem Protection
EPA/OEP RGP Applications Coordinator
5 Post Office Square – Suite 100 (OEP06-01)
Boston, Massachusetts 02109-3912

RE: Notice of Intent (NOI)
Temporary Construction Dewatering
Alta Xmbly
290 Revolution Drive
Somerville, Massachusetts 02145
VERTEX Project No. 48522

To whom it may concern:

The Vertex Companies, Inc. (VERTEX) has been retained by 290 Revolution Owner, LLC (the “Owner”) to obtain approval to discharge water from construction dewatering at a property located at 290 Revolution Drive in Somerville, Massachusetts (the “site”). On behalf of the Owner, and in accordance with the National Pollutant Discharge Elimination System (NPDES) Remediation General Permit for Dewatering Activities – Massachusetts General Permit, MAG910000, included herewith are the Notice of Intent (NOI) and applicable documentation as required by the US Environmental Protection Agency (USEPA) and Massachusetts Department of Environmental Protection (MassDEP) for the discharge of water generated from construction site dewatering under the Remediation General Permit. This submittal is organized according to the suggested format for the Remediation General Permit NOI.

The following attachments are provided in support of this submittal:

- Attachment A: City of Somerville Drainage Map
- Attachment B: Notice of Intent
- Attachment C: Treatment System Design and Specifications
- Attachment D: Stream Statistics
- Attachment E: Areas of Critical Environmental Concern Documentation
- Attachment F: National Register of Historic Places and Massachusetts Historical Commission Documentation
- Attachment G: Endangered Species Act Documentation
- Attachment H: TMDL Information

- Attachment I: Laboratory Analytical Reports

Construction dewatering is planned in support of redevelopment of the property located at 290 Revolution Drive in Somerville, Massachusetts (the “site”), as shown on the attached United States Geological Survey – Topographic Map – Boston North. Redevelopment activities which will require dewatering include excavation for the construction of a new multi-story residential apartment complex, and the installation of subsurface utilities.

SITE DESCRIPTION

The site, identified as Block 23 A and Block 23 B, is located within a larger parcel of land identified by the address of 5 Middlesex Avenue and Parcel ID 001391 by the Somerville Assessor’s database. The site (Blocks 23 A and 23 B) occupies approximately 1.4 acres of the larger 9.11-acre parcel. The site was most recently comprised of an asphalt-paved parking lot with some landscaped areas. However, these features were recently removed in preparation of the proposed redevelopment.

SUBSURFACE INVESTIGATION & ANALYTICAL TESTING OF SOIL

Subsurface investigations have been performed at the site by VERTEX and others in support of the planned redevelopment activities. Investigations have included the collection and analysis of soil samples to determine disposal and reuse options for excavated material generated from construction dewatering operations.

Subsurface investigations performed to date indicate that the site is underlain by a layer of urban fill. The fill has been encountered at varying thicknesses ranging from 0 to 10 feet below surface grade (bgs). The fill has been determined to contain varying amounts of construction debris, including black and tan sand with trace debris that included glass, brick, slag, and ash. Beneath the fill are layers of peat, and native fine-grained silts and clays. Groundwater was encountered at depths ranging between 4 and 6 feet bgs.

Analysis of soil samples have identified concentrations of petroleum constituents and metals which exceeded the applicable Massachusetts Contingency Plan (MCP) RCS-1 and RCS-2 Reporting Concentrations (RCs). Specifically, the semi-volatile organic compounds (SVOCs) 2-methylnaphthalene, acenaphthene, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, dibenzo(a,h)anthracene, indeno(1,2,3-cd)pyrene, and phenanthrene were detected at concentrations above their applicable RCs. Additionally, total petroleum hydrocarbons (TPH), arsenic, lead, and zinc were also detected at concentrations above their respective RCs. Analysis of the soil samples did not identify concentrations of poly-chlorinated biphenyls (PCBs), volatile organic compounds (VOCs), pesticides, or herbicides at levels above their respective RCs.

SOURCE AND RECEIVING WATER SAMPLING AND ANALYSIS

The proposed point of discharge will be a stormwater drain located on the northeast portion of the site. This drain is connected to a 72-inch diameter drain line that eventually discharges to the Mystic River via an outfall located downstream of the Amelia Earhart Dam. The location of the proposed point of discharge and outfall are shown on Figures 2 and 3, respectively.

On September 23, 2019, a representative of VERTEX visited the site to collect representative samples of the source and receiving water to support this NOI application. A test pit was advanced in the northeast portion of the site to obtain a sample of groundwater. The test pit was excavated to the water table and a sample of groundwater (X-INF-19-09-23) was obtained and placed in laboratory-supplied glassware. After collecting the source water sample, a sample of water (X-REC-19-09-23) was obtained at the location of the proposed stormwater outfall located on the Mystic River. The samples were then submitted for laboratory analysis of the following parameters:

- VOCs
- SVOCs
- Total Metals
- PCBs
- Ethanol
- Chloride
- Total Residual Chlorine
- Cyanide
- Ammonia (as Nitrogen)
- Total Phenols
- Total Suspended Solids
- Oil/Grease (Silica Gel Treated – n-Hexane Extractable Material)
- Chromium (Hexavalent and Trivalent)
- Corrosivity – pH (recorded in the field)

The results of the source and receiving water analyses are summarized in Table 1. No exceedances of either the Technology Based or Water Quality Based Effluent Limitations were identified in either the source or receiving water samples.

PROPOSED CONSTRUCTION AND MANAGEMENT OF DEWATERING EFFLUENT

Excavation will be performed throughout the majority of the site as part of redevelopment. At this time, it is assumed that dewatering of the excavation will be conducted over the course of approximately 12 months to facilitate construction.

The site contractor will treat the groundwater prior to discharging the dewatering effluent to the existing storm drain system via catch basins located in the northern portion of the site, which

drain to the Mystic River. Refer to the City of Somerville Drainage map included in Attachment A for the location of the outfall (listed as number 32 on the plan). Site work and associated dewatering are anticipated to begin in December 2019 and are estimated to be completed before December 2020.

The site contractor will provide a treatment system and will operate and maintain dewatering and sedimentation control systems. The system will be designed to meet the permit requirements for suspended solids, pH, and other constituents (as required) in the effluent stream prior to discharge into the on-site storm drain. The treatment system will consist of a 18,000-gallon sedimentation tank/Frac tank and bag filters. The system will also be equipped with a flow meter and totalizer to monitor the discharge volume and various test ports for the collection of samples. As a contingency, a pH adjustment system, an oil-water separator system, a carbon vessel treatment system, and a cation resin system will be available but will only be implemented, if necessary, based upon the results of effluent testing during system startup.

Once operations begin, a licensed wastewater treatment plant operator will conduct system monitoring, as required. On behalf of the Owner, VERTEX will perform the required sampling and testing of the dewatering effluent and will report the results as required by the permit. Results will be provided to the site contractor, and sedimentation and treatment system and/or dewatering procedures will be modified as necessary to comply with the Permit Discharge Criteria.

SUPPORTING DOCUMENTATION & PUBLIC CORRESPONDENCE

A copy of the Notice of Intent (NOI) to conduct construction site dewatering is provided in Attachment B. The NOI indicates that the proposed discharge point is The Mystic River, Segment MA71-03, Class SB CSO), which is a marine water body. Because of this, no dilution factor is being applied to the proposed discharge. Because this is a non-MCP site which is being managed by a non-municipal operator, concurrent with this submittal, VERTEX is also submitting the NOI to the MassDEP Surface Water Discharge Permit Program in accordance with the WM15 along with the \$500 application fee. The City of Somerville Water and Sewer Department (SWSD) was also notified of the proposed dewatering operations.

The site is not known to be or located within the limits of a known Massachusetts Area of Critical Environmental Concern (ACEC), a historic place, or within a critical habitat for endangered species. Please refer to the supporting correspondence and research documentation, attached to the NOI, which was used to determine the status of the site.

CONTACT INFORMATION

Owner:
290 Revolution Owner, LLC
91 Hartwell Avenue, 3rd Floor

Representative preparing this application:
The Vertex Companies, Inc.
100 N. Washington St, Suite 302

Lexington, Massachusetts 02421
Attention: Mr. Mark Theriault
Tel: 781.369.8111

Boston, Massachusetts 02114
Attention: Frank Calandra, PE, LSP
Tel: 617.275.5407

Operator:

Lockwood Remediation Technologies, LLC
89 Crawford Street
Leominster, Massachusetts 01453
Attention: Jason A. Overgaard
Tel: 774.450.7177

ANALYTICAL TESTING

Analytical testing of water will be performed prior to any discharge operations and to help further design the necessary treatment system to meet required discharge parameters. VERTEX has collected and analyzed representative samples of influent water as well as a sample of the receiving water which are summarized in the attached Table 1 – RGP Analytical Results.

BEST MANAGEMENT PRACTICES PLAN

Prior to the initiation of dewatering activities or discharge of dewatering effluent, a Best Management Practices Plan (BMPP) will be prepared and implemented. At this time, it is anticipated that the BMPP will be incorporated within the site's existing Spill Prevention Control & Counter Measures (SPCC) Plan.

CLOSING

Thank you very much for your consideration of this NOI. Please feel free to contact us should you wish to discuss the information contained herein or if you need additional information.

Sincerely,

The Vertex Companies, Inc.



Benjamin Sivonen, EIT
Project Manager



Frank Calandra, PE, LSP
Division Manager - Remediation

Attachments:

Figures

- Figure 1: Site Locus
- Figure 2: Site Detail
- Figure 3: Drainage Path

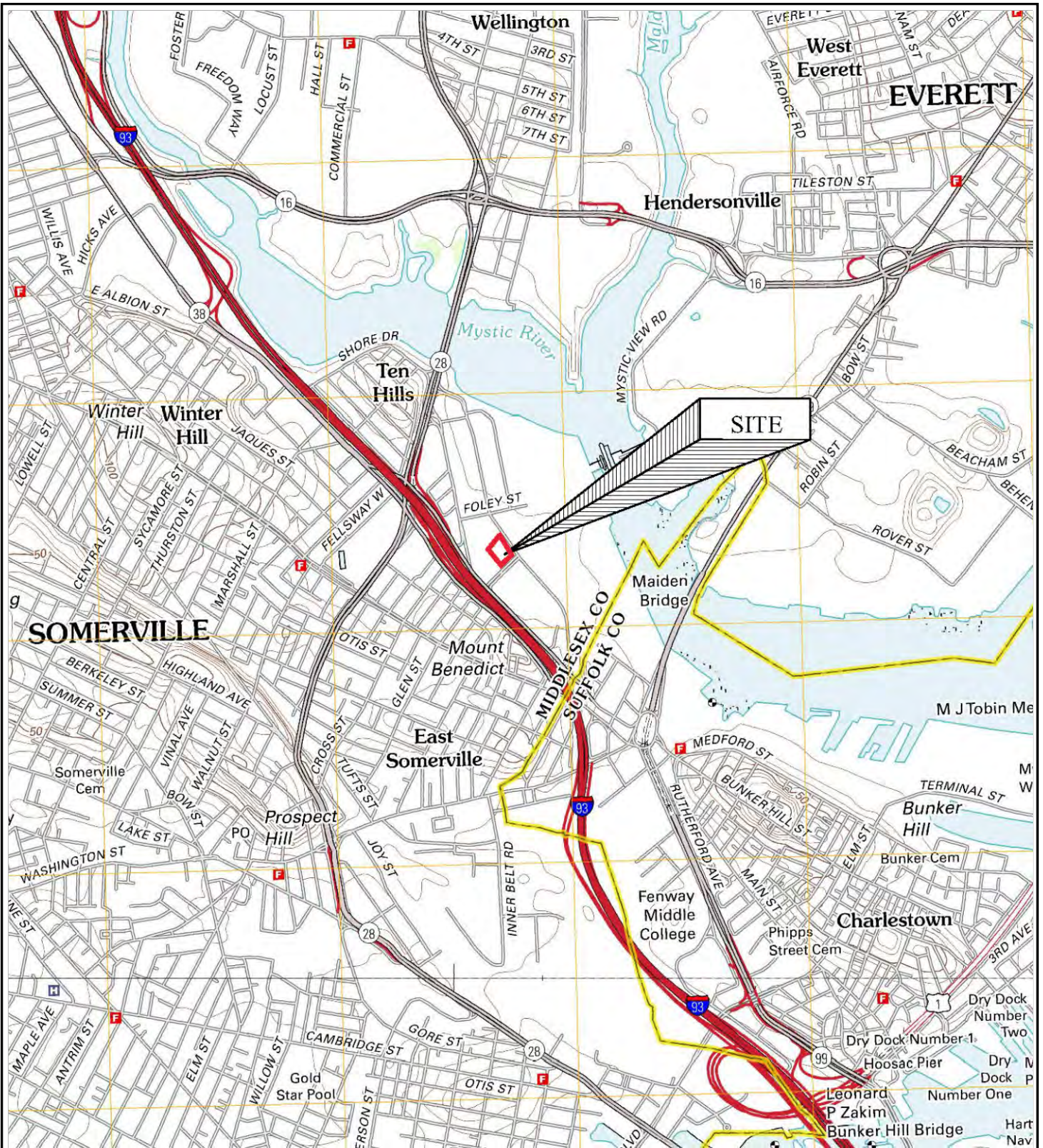
Tables

- Table 1: RGP Analytical Results

Appendices

- Attachment A: City of Somerville Drainage Map
- Attachment B: Notice of Intent
- Attachment C: Treatment System Design and Specifications
- Attachment D: Stream Stats
- Attachment E: Areas of Critical Environmental Concern Documentation
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FIGURES



SOURCE: UNITED STATES GEOLOGICAL SURVEY MAP
 BOSTON NORTH QUADRANGLE 7.5 MINUTE SERIES (2012)

SITE LOCUS
 ALTA XMBLY
 290 Revolution Drive
 Somerville, MA

Date:	OCT 2019
Drawn:	BNS
Checked:	FC
Job No.:	48522

FIGURE
1

VERTENX.COM

VERTENX
 100 NORTH WASHINGTON STREET, SUITE 302
 BOSTON, MA 02114
 617.275.5407



SITE DETAIL
 ALTA XMBLY
 290 Revolution Drive
 Somerville, MA

Date: OCT 2019
 Drawn: BNS
 Checked: FC
 Job No.: 48522

FIGURE
2

REVISIONS

VERTXENG.COM

VERTX[®]
 100 NORTH WASHINGTON STREET, SUITE 302
 BOSTON, MA 02114
 617.275.5407



EXISTING DRAIN LINE TO OUTFALL 32



DRAINAGE PATH

ALTA XMBLY
 290 Revolution Drive
 Somerville, MA

Date: OCT 2019
 Drawn: BNS
 Checked: FC
 Job No.: 48522

FIGURE
3

REVISIONS

VERTENX.COM

VERTEX

100 NORTH WASHINGTON STREET, SUITE 302
 BOSTON, MA 02114
 617.275.5407

TABLES

Table 1
RGP Analytical Results
Alta Xmbly
290 Revolution Drive
Somerville, Massachusetts
VERTEX Project No. 48522

LOCATION	CasNum	NPDES Effluent Limitation		Units	X-INF-19-09-23	X-REC-19-09-23
		TBEL	WQBEL		9/23/2019	9/23/2019
LAB SAMPLE ID					19I1152-01	19I1152-02
Alcohol Analysis						
Ethanol	64-17-5	Report		mg/l	ND(0.1)	ND(0.1)
Anions						
Chloride	16887-00-6	Report		mg/l	1100	800
General Chemistry						
Chlorine, Total Residual	NONE	0.2	0.0075	mg/l	ND(0.02)	ND(0.02)
Cyanide, Total	57-12-5	178	0.001	mg/l	ND(0.005)	ND(0.005)
Nitrogen, Ammonia	7664-41-7	Report		mg/l	2.35	0.092
pH (H)*	12408-02-5	6.5-8.5		SU	6.7	7.1
Phenolics, Total	NONE	NC	NC	mg/l	0.057	ND(0.00005)
Solids, Total Suspended	NONE	30		mg/l	12	4.2
SGT-HEM	NONE	5		mg/l	ND(1.4)	ND(1.4)
Chromium, Hexavalent	18540-29-9	0.323	0.05	mg/l	ND(0.004)	ND(0.004)
Chromium, Trivalent	16065-83-3	0.323	0.1	mg/l	0.0013	0.002
SVOCs by SIM						
Acenaphthene	83-32-9	As Total Group II	As Total Group II	mg/l	ND(0.005)	ND(0.005)
Acenaphthylene	208-96-8	As Total Group II	As Total Group II	mg/l	ND(0.005)	ND(0.005)
Anthracene	120-12-7	As Total Group II	As Total Group II	mg/l	ND(0.005)	ND(0.005)
Benzo(a)anthracene	56-55-3	As Total Group I	0.00000038	mg/l	ND(0.00005)	ND(0.00005)
Benzo(a)pyrene	50-32-8	As Total Group I	0.00000038	mg/l	ND(0.0001)	ND(0.0001)
Benzo(b)fluoranthene	205-99-2	As Total Group I	0.00000038	mg/l	ND(0.00005)	ND(0.00005)
Benzo(ghi)perylene	191-24-2	As Total Group II	As Total Group II	mg/l	ND(0.005)	ND(0.005)
Benzo(k)fluoranthene	207-08-9	As Total Group I	0.00000038	mg/l	ND(0.0002)	ND(0.0002)
Bis(2-ethylhexyl)phthalate	117-81-7	0.101	0.0022	mg/l	0.00058	ND(0.0001)
Chrysene	218-01-9	As Total Group I	0.00000038	mg/l	ND(0.0002)	ND(0.0002)
Dibenzo(a,h)anthracene	53-70-3	As Total Group I	0.00000038	mg/l	ND(0.0001)	ND(0.0001)
Fluoranthene	206-44-0	As Total Group II	As Total Group II	mg/l	ND(0.005)	ND(0.005)
Fluorene	86-73-7	As Total Group II	As Total Group II	mg/l	ND(0.005)	ND(0.005)
Indeno(1,2,3-cd)pyrene	193-39-5	As Total Group I	0.00000038	mg/l	ND(0.0001)	ND(0.0001)
Naphthalene	91-20-3	0.02		mg/l	ND(0.005)	ND(0.005)
Pentachlorophenol	87-86-5	0.001		mg/l	ND(0.0001)	ND(0.0001)
Phenanthrene	85-01-8	As Total Group II	As Total Group II	mg/l	ND(0.005)	ND(0.005)
Pyrene	129-00-0	As Total Group II	As Total Group II	mg/l	0.000034	ND(0.001)
Total Group I PAHs	Multiple	0.001	As Individual	mg/l	ND(CS)	ND(CS)
Total Group II PAHs	Multiple	0.1		mg/l	0.000034	ND(CS)
Total Metals						
Antimony, Total	7440-36-0	0.206	0.64	mg/l	ND(0.0001)	ND(0.0001)
Arsenic, Total	7440-38-2	0.104	0.036	mg/l	0.002	0.0026
Cadmium, Total	7440-43-9	0.0102	0.0088	mg/l	ND(0.0002)	ND(0.0002)
Chromium, Total	7440-47-3	0.323	0.074	mg/l	0.0013	0.002
Copper, Total	7440-50-8	0.242	0.0031	mg/l	0.01	0.0064
Iron, Total	7439-89-6	5		mg/l	1.6	0.19
Lead, Total	7439-92-1	0.16	0.0081	mg/l	0.0011	0.00057
Mercury, Total	7439-97-6	0.000739	0.00094	mg/l	ND(0.0001)	ND(0.0001)
Nickel, Total	7440-02-0	1.45	0.0082	mg/l	0.0061	ND(0.005)
Selenium, Total	7782-49-2	0.2358	0.071	mg/l	0.0048	0.0071
Silver, Total	7440-22-4	0.0351	0.0019	mg/l	ND(0.0002)	ND(0.0002)
Zinc, Total	7440-66-6	0.42	0.081	mg/l	0.014	ND(0.01)

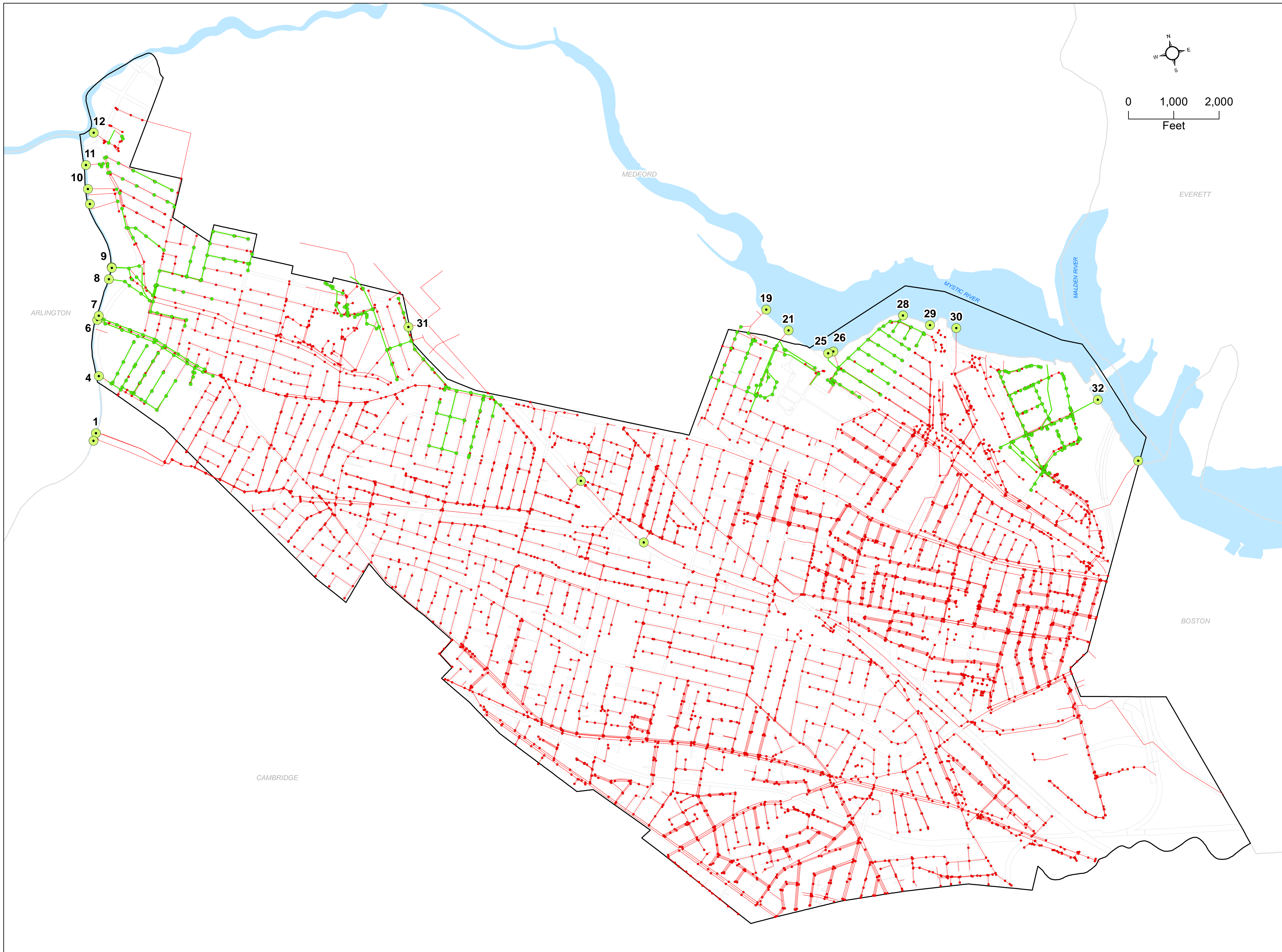
Table 1
RGP Analytical Results
Alta Xmbly
290 Revolution Drive
Somerville, Massachusetts
VERTEX Project No. 48522

LOCATION	CasNum	NPDES Effluent Limitation		Units	X-INF-19-09-23	X-REC-19-09-23
					9/23/2019	9/23/2019
LAB SAMPLE ID		TBEL	WQBEL		19I1152-01	19I1152-02
Volatile Organic Compounds (VOCs)						
1,1,1-Trichloroethane	71-55-6	0.2		mg/l	ND(0.002)	ND(0.002)
1,1,2-Trichloroethane	79-00-5	0.005		mg/l	ND(0.002)	ND(0.002)
1,1-Dichloroethane	75-34-3	0.07		mg/l	ND(0.002)	ND(0.002)
1,1-Dichloroethene	75-35-4	0.0032		mg/l	ND(0.002)	ND(0.002)
1,2-Dichlorobenzene	95-50-1	0.6		mg/l	ND(0.002)	ND(0.002)
1,3-Dichlorobenzene	541-73-1	0.32		mg/l	ND(0.002)	ND(0.002)
1,4-Dichlorobenzene	106-46-7	0.005		mg/l	ND(0.002)	ND(0.002)
1,4-Dioxane	123-91-1	0.2		mg/l	ND(0.05)	ND(0.05)
Acetone	67-64-1	7.97		mg/l	ND(0.05)	ND(0.05)
Benzene	71-43-2	0.005		mg/l	ND(0.001)	ND(0.001)
Carbon tetrachloride	56-23-5	0.0044	0.0016	mg/l	ND(0.002)	ND(0.002)
cis-1,2-Dichloroethene	156-59-2	0.07		mg/l	ND(0.001)	ND(0.001)
Ethylbenzene	100-41-4	NC	NC	mg/l	ND(0.002)	ND(0.002)
Methyl tert butyl ether	1634-04-4	0.07	0.02	mg/l	ND(0.002)	ND(0.002)
Methylene chloride	75-09-2	0.0046	NC	mg/l	ND(0.005)	ND(0.005)
o-Xylene	95-47-6	NC	NC	mg/l	0.00021	ND(0.002)
p/m-Xylene	179601-23-1	NC	NC	mg/l	0.00036	ND(0.002)
Tert-Butyl Alcohol	75-65-0	0.12		mg/l	ND(0.02)	ND(0.02)
Tertiary-Amyl Methyl Ether	994-05-8	0.09		mg/l	ND(0.0005)	ND(0.0005)
Tetrachloroethene	127-18-4	0.005	0.0033	mg/l	ND(0.002)	ND(0.002)
Toluene	108-88-3	NC	NC	mg/l	0.002	ND(0.001)
trans-1,2-Dichloroethene	156-60-5	NC	NC	mg/l	ND(0.002)	ND(0.002)
Trichloroethene	79-01-6	0.005		mg/l	ND(0.002)	ND(0.002)
Vinyl chloride	75-01-4	0.002		mg/l	ND(0.002)	ND(0.002)
Xylenes, Total	1330-20-7	NC	NC	mg/l	0.00057	ND(0.003)
Total BTEX	Multiple	0.1		mg/l	0.00257	ND(CS)
Polychlorinated Biphenyls (PCBs)						
Aroclor 1016	12674-11-2	NC	NC	mg/l	ND(0.000143)	ND(0.000143)
Aroclor 1221	11104-28-2	NC	NC	mg/l	ND(0.000143)	ND(0.000143)
Aroclor 1232	11141-16-5	NC	NC	mg/l	ND(0.000143)	ND(0.000143)
Aroclor 1242	53469-21-9	NC	NC	mg/l	ND(0.000143)	ND(0.000143)
Aroclor 1248	12672-29-6	NC	NC	mg/l	ND(0.000143)	ND(0.000143)
Aroclor 1254	11097-69-1	NC	NC	mg/l	ND(0.000143)	ND(0.000143)
Aroclor 1260	11096-82-5	NC	NC	mg/l	ND(0.000143)	0.000201
Total PCBs	Multiple	0.00000064		mg/l	ND(0.000143)	0.000201

Notes:

- Units presented in milligrams per liter (mg/l) unless otherwise noted
- National Pollutant Discharge Elimination System (NPDES) Effluent Limitations
- Technology-Based Effluent Limitation (TBEL)
- Water-Quality Based Effluent Limitation (WQBEL)
- SU= Specific Units
- ND = Not Detected (laboratory reporting limits in parentheses)
- NC = No criterion for analyte
- NA = Not Analyzed
- CS = Compound Specific
- * = Parameter was measured in the field

**ATTACHMENT A:
CITY OF SOMERVILLE DRAINAGE MAP**



CITY OF SOMERVILLE STORMWATER MANAGEMENT

- Storm Discharge Points
- Stormwater Manholes
- Sanitary and Combined Manholes
- Separate Stormwater Drainage System
- Sanitary and Combined Sewer System

Date: September 25, 2018



City of Somerville Engineering Dept.
GIS Division
1 Franey Rd
Somerville, MA 02145

**ATTACHMENT B:
NOTICE OF INTENT**

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

A. General site information:

1. Name of site: Alta Xmbly	Site address: 290 Revolution Drive Street:		
	City: Somerville	State: MA	Zip: 02145
2. Site owner 290 Revolution Owner, LLC Owner is (check one): <input type="checkbox"/> Federal <input type="checkbox"/> State/Tribal <input checked="" type="checkbox"/> Private <input type="checkbox"/> Other; if so, specify:	Contact Person: Mark Theriault		
	Telephone: 781-369-8111	Email: mark.theriault@woodpartners.com	
	Mailing address: 91 Hartwell Avenue, 3rd Floor Street:		
	City: Lexington	State: MA	Zip: 02421
3. Site operator, if different than owner Lockwood Remediation Technologies, LLC	Contact Person: Jason A. Overgaard		
	Telephone: 774-450-7177	Email:	
	Mailing address: Street: 89 Crawford Street		
	City: Leomister	State: MA	Zip: 01453
4. NPDES permit number assigned by EPA: NA NPDES permit is (check all that apply): <input checked="" type="checkbox"/> RGP <input type="checkbox"/> DGP <input type="checkbox"/> CGP <input type="checkbox"/> MSGP <input type="checkbox"/> Individual NPDES permit <input type="checkbox"/> Other; if so, specify:	5. Other regulatory program(s) that apply to the site (check all that apply): <input type="checkbox"/> MA Chapter 21e; list RTN(s): <input type="checkbox"/> CERCLA <input type="checkbox"/> NH Groundwater Management Permit or Groundwater Release Detection Permit: <input type="checkbox"/> UIC Program <input type="checkbox"/> POTW Pretreatment <input type="checkbox"/> CWA Section 404		

B. Receiving water information:

1. Name of receiving water(s): Mystic River	Waterbody identification of receiving water(s): MA71-03	Classification of receiving water(s): SB(CSO)
Receiving water is (check any that apply): <input type="checkbox"/> Outstanding Resource Water <input type="checkbox"/> Ocean Sanctuary <input type="checkbox"/> territorial sea <input type="checkbox"/> Wild and Scenic River		
2. Has the operator attached a location map in accordance with the instructions in B, above? (check one): <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Are sensitive receptors present near the site? (check one): <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If yes, specify:		
3. Indicate if the receiving water(s) is listed in the State's Integrated List of Waters (i.e., CWA Section 303(d)). Include which designated uses are impaired, and any pollutants indicated. Also, indicate if a final TMDL is available for any of the indicated pollutants. For more information, contact the appropriate State as noted in Part 4.6 of the RGP. TMDL available, Refer to Attachment F		
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.		2.27 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.		1
6. Has the operator received confirmation from the appropriate State for the 7Q10 and dilution factor indicated? (check one): <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If yes, indicate date confirmation received:		
7. Has the operator attached a summary of receiving water sampling results as required in Part 4.2 of the RGP in accordance with the instruction in Appendix VIII? (check one): <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		

C. Source water information:

1. Source water(s) is (check any that apply):			
<input checked="" type="checkbox"/> Contaminated groundwater Has the operator attached a summary of influent sampling results as required in Part 4.2 of the RGP in accordance with the instruction in Appendix VIII? (check one): <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Contaminated surface water Has the operator attached a summary of influent sampling results as required in Part 4.2 of the RGP in accordance with the instruction in Appendix VIII? (check one): <input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> The receiving water	<input type="checkbox"/> Potable water; if so, indicate municipality or origin: <input type="checkbox"/> Other; if so, specify:
		<input type="checkbox"/> A surface water other than the receiving water; if so, indicate waterbody:	

2. Source water contaminants: Metals, petroleum	
a. For source waters that are contaminated groundwater or contaminated surface water, indicate are any contaminants present that are not included in the RGP? (check one): <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If yes, indicate the contaminant(s) and the maximum concentration present in accordance with the instructions in Appendix VIII.	b. For a source water that is a surface water other than the receiving water, potable water or other, indicate any contaminants present at the maximum concentration in accordance with the instructions in Appendix VIII? (check one): <input type="checkbox"/> Yes <input type="checkbox"/> No
3. Has the source water been previously chlorinated or otherwise contains residual chlorine? (check one): <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	

D. Discharge information

1. The discharge(s) is a(n) (check any that apply): <input type="checkbox"/> Existing discharge <input checked="" type="checkbox"/> New discharge <input type="checkbox"/> New source	
Outfall(s): City of Somerville 72-inch drain outlet to Mystic River (MA71-03)	Outfall location(s): (Latitude, Longitude) 42.3935, -71.0756
Discharges enter the receiving water(s) via (check any that apply): <input type="checkbox"/> Direct discharge to the receiving water <input checked="" type="checkbox"/> Indirect discharge, if so, specify: Effluent will enter an existing storm water drainage system that discharges directly into the Mystic River at the approximate Lat/Long specified <input type="checkbox"/> A private storm sewer system <input checked="" type="checkbox"/> A municipal storm sewer system If the discharge enters the receiving water via a private or municipal storm sewer system: Has notification been provided to the owner of this system? (check one): <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Has the operator has received permission from the owner to use such system for discharges? (check one): <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No, if so, explain, with an estimated timeframe for obtaining permission: Prior to discharge, the operator will obtain the necessary City of Somerville approval(s)/permit(s) Has the operator attached a summary of any additional requirements the owner of this system has specified? (check one): <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
Provide the expected start and end dates of discharge(s) (month/year): Start 12/2019 End 12/2020	
Indicate if the discharge is expected to occur over a duration of: <input checked="" type="checkbox"/> less than 12 months <input type="checkbox"/> 12 months or more <input type="checkbox"/> is an emergency discharge	
Has the operator attached a site plan in accordance with the instructions in D, above? (check one): <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	

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

4. Influent and Effluent Characteristics

Parameter	Known or believed absent	Known or believed present	# of samples	Test method (#)	Detection limit (µg/l)	Influent		Effluent Limitations	
						Daily maximum (µg/l)	Daily average (µg/l)	TBEL	WQBEL
A. Inorganics									
Ammonia		✓	1	4500NH3	75	2350	2350	Report mg/L	---
Chloride		✓	1	300.0	100000	1100000	1100000	Report µg/l	---
Total Residual Chlorine	✓		1	4500CL-D	20	ND	ND	0.2 mg/L	125.7
Total Suspended Solids		✓	1	2540D	830	12000	12000	30 mg/L	---
Antimony	✓		1	200.8	1.0	ND	ND	206 µg/L	10729
Arsenic		✓	1	200.8	0.8	2	2	104 µg/L	563
Cadmium	✓		1	200.8	0.2	ND	ND	10.2 µg/L	107.4
Chromium III		✓	1	200.8	1.3	1.3	1.3	323 µg/L	1644.9
Chromium VI	✓		1	200.8	4	ND	ND	323 µg/L	844
Copper		✓	1	200.8	1	10	10	242 µg/L	3.7
Iron		✓	1	200.7	50	1600	1600	5,000 µg/L	---
Lead		✓	1	200.8	0.5	1.1	1.1	160 µg/L	133.8
Mercury	✓		1	245.1	0.1	ND	ND	0.739 µg/L	18.54
Nickel		✓	1	200.8	5	6.1	6.1	1,450 µg/L	138.9
Selenium		✓	1	200.8	5	4.8	4.8	235.8 µg/L	1081
Silver	✓		1	200.8	0.2	ND	ND	35.1 µg/L	37.5
Zinc		✓	1	200.8	10	14	14	420 µg/L	1435
Cyanide	✓		1	4500CN-C	5	ND	ND	178 mg/L	16.8
B. Non-Halogenated VOCs									
Total BTEX		✓	1	624.1	1	2.57	2.57	100 µg/L	---
Benzene	✓		1	624.1	1	ND	ND	5.0 µg/L	---
1,4 Dioxane	✓		1	624.1	50	ND	ND	200 µg/L	---
Acetone	✓		1	624.1	50	ND	ND	7.97 mg/L	---
Phenol		✓	1	420.1	50	57	57	1,080 µg/L	5029

Parameter	Known or believed absent	Known or believed present	# of samples	Test method (#)	Detection limit (µg/l)	Influent		Effluent Limitations	
						Daily maximum (µg/l)	Daily average (µg/l)	TBEL	WQBEL
C. Halogenated VOCs									
Carbon Tetrachloride	✓		1	624.1	2	ND	ND	4.4 µg/L	26.8
1,2 Dichlorobenzene	✓		1	624.1	2	ND	ND	600 µg/L	---
1,3 Dichlorobenzene	✓		1	624.1	2	ND	ND	320 µg/L	---
1,4 Dichlorobenzene	✓		1	624.1	2	ND	ND	5.0 µg/L	---
Total dichlorobenzene	✓		1	624.1	2	ND	ND	763 µg/L in NH	---
1,1 Dichloroethane	✓		1	624.1	2	ND	ND	70 µg/L	---
1,2 Dichloroethane	✓		0	-	-	-	-	5.0 µg/L	---
1,1 Dichloroethylene	✓		1	624.1	2	ND	ND	3.2 µg/L	---
Ethylene Dibromide	✓		0	-	-	-	-	0.05 µg/L	---
Methylene Chloride	✓		1	624.1	5	ND	ND	4.6 µg/L	---
1,1,1 Trichloroethane			1	624.1	2	ND	ND	200 µg/L	---
1,1,2 Trichloroethane	✓		1	624.1	2	ND	ND	5.0 µg/L	---
Trichloroethylene	✓		1	624.1	2	ND	ND	5.0 µg/L	---
Tetrachloroethylene	✓		1	624.1	2	ND	ND	5.0 µg/L	55.3
cis-1,2 Dichloroethylene	✓		1	624.1	1	ND	ND	70 µg/L	---
Vinyl Chloride	✓		1	624.1	2	ND	ND	2.0 µg/L	---
D. Non-Halogenated SVOCs									
Total Phthalates		✓	1	625.1	0.1	0.58	0.58	190 µg/L	---
Diethylhexyl phthalate	✓		0	-	-	-	-	101 µg/L	36.9
Total Group I PAHs			1	625.1	CS	ND	ND	1.0 µg/L	---
Benzo(a)anthracene			1	625.1	0.05	ND	ND	As Total PAHs	0.0637
Benzo(a)pyrene			1	625.1	0.1	ND	ND		0.0637
Benzo(b)fluoranthene			1	625.1	0.05	ND	ND		0.0637
Benzo(k)fluoranthene			1	625.1	0.2	ND	ND		0.0637
Chrysene			1	625.1	0.2	ND	ND		0.0637
Dibenzo(a,h)anthracene			1	625.1	0.1	ND	ND		0.0637
Indeno(1,2,3-cd)pyrene			1	625.1	0.1	ND	ND		0.0637

E. Treatment system information

<p>1. Indicate the type(s) of treatment that will be applied to effluent prior to discharge: (check all that apply)</p> <p><input type="checkbox"/> Adsorption/Absorption <input type="checkbox"/> Advanced Oxidation Processes <input type="checkbox"/> Air Stripping <input checked="" type="checkbox"/> Granulated Activated Carbon (“GAC”)/Liquid Phase Carbon Adsorption <input checked="" type="checkbox"/> Ion Exchange <input checked="" type="checkbox"/> Precipitation/Coagulation/Flocculation <input checked="" type="checkbox"/> Separation/Filtration <input checked="" type="checkbox"/> Other; if so, specify: The baseline treatment system will consist of solids removal via gravity separation and bag filtration. Additional treatment technologies are being identified as contingency.</p>	
<p>2. Provide a written description of all treatment system(s) or processes that will be applied to the effluent prior to discharge. The first element of the treatment system will be pH adjustment (if needed) following by a weir tank where solids will settle out. The effluent will then pass through the following as necessary: an oil-water separator, bag filters, a granular activated carbon vessel, and a cation resin vessel. The effluent will be discharged to an existing catch basin on-site which discharges to the existing storm drain system.</p> <p>Identify each major treatment component (check any that apply): <input checked="" type="checkbox"/> Fractionation tanks <input type="checkbox"/> Equalization tank <input checked="" type="checkbox"/> Oil/water separator <input type="checkbox"/> Mechanical filter <input type="checkbox"/> Media filter <input type="checkbox"/> Chemical feed tank <input type="checkbox"/> Air stripping unit <input checked="" type="checkbox"/> Bag filter <input checked="" type="checkbox"/> Other; if so, specify: Cation resin vessel, carbon vessels, and/or pH adjustment (if needed)</p> <p>Indicate if either of the following will occur (check any that apply): <input type="checkbox"/> Chlorination <input type="checkbox"/> De-chlorination</p>	
<p>3. Provide the design flow capacity in gallons per minute (gpm) of the most limiting component. Indicate the most limiting component: Weir tank Is use of a flow meter feasible? (check one): <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No, if so, provide justification:</p>	100
<p>Provide the proposed maximum effluent flow in gpm.</p>	100
<p>Provide the average effluent flow in gpm.</p>	50
<p>If Activity Category IV applies, indicate the estimated total volume of water that will be discharged:</p>	
<p>4. Has the operator attached a schematic of flow in accordance with the instructions in E, above? (check one): <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p>	

F. Chemical and additive information

<p>1. Indicate the type(s) of chemical or additive that will be applied to effluent prior to discharge or that may otherwise be present in the discharge(s): (check all that apply)</p> <p><input type="checkbox"/> Algacides/biocides <input type="checkbox"/> Antifoams <input type="checkbox"/> Coagulants <input type="checkbox"/> Corrosion/scale inhibitors <input type="checkbox"/> Disinfectants <input type="checkbox"/> Flocculants <input type="checkbox"/> Neutralizing agents <input type="checkbox"/> Oxidants <input type="checkbox"/> Oxygen <input type="checkbox"/> scavengers <input checked="" type="checkbox"/> pH conditioners <input type="checkbox"/> Bioremedial agents, including microbes <input type="checkbox"/> Chlorine or chemicals containing chlorine <input type="checkbox"/> Other; if so, specify:</p>
<p>2. Provide the following information for each chemical/additive, using attachments, if necessary:</p> <p>See Attachment C</p> <p>a. Product name, chemical formula, and manufacturer of the chemical/additive;</p> <p>b. Purpose or use of the chemical/additive or remedial agent;</p> <p>c. Material Safety Data Sheet (MSDS) and Chemical Abstracts Service (CAS) Registry number for each chemical/additive;</p> <p>d. The frequency (hourly, daily, etc.), duration (hours, days), quantity (maximum and average), and method of application for the chemical/additive;</p> <p>e. Any material compatibility risks for storage and/or use including the control measures used to minimize such risks; and</p> <p>f. If available, the vendor's reported aquatic toxicity (NOAEL and/or LC50 in percent for aquatic organism(s)).</p>
<p>3. Has the operator attached an explanation which demonstrates that the addition of such chemicals/additives may be authorized under this general permit in accordance with the instructions in F, above? (check one): <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No; if no, has the operator attached data that demonstrates each of the 126 priority pollutants in CWA Section 307(a) and 40 CFR Part 423.15(j)(1) are non-detect in discharges with the addition of the proposed chemical/additive? (check one): <input type="checkbox"/> Yes <input type="checkbox"/> No</p>

G. Endangered Species Act eligibility determination

<p>1. Indicate under which criterion the discharge(s) is eligible for coverage under this general permit:</p> <p><input checked="" type="checkbox"/> FWS Criterion A: No endangered or threatened species or critical habitat are in proximity to the discharges or related activities or come in contact with the "action area".</p> <p><input type="checkbox"/> FWS Criterion B: Formal or informal consultation with the FWS under section 7 of the ESA resulted in either a no jeopardy opinion (formal consultation) or a written concurrence by FWS on a finding that the discharges and related activities are "not likely to adversely affect" listed species or critical habitat (informal consultation). Has the operator completed consultation with FWS? (check one): <input type="checkbox"/> Yes <input type="checkbox"/> No; if no, is consultation underway? (check one): <input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p><input type="checkbox"/> FWS Criterion C: Using the best scientific and commercial data available, the effect of the discharges and related activities on listed species and critical habitat have been evaluated. Based on those evaluations, a determination is made by EPA, or by the operator and affirmed by EPA, that the discharges and related activities will have "no effect" on any federally threatened or endangered listed species or designated critical habitat under the jurisdiction of the FWS. This determination was made by: (check one) <input type="checkbox"/> the operator <input type="checkbox"/> EPA <input type="checkbox"/> Other; if so, specify:</p>
--

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

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

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

H. National Historic Preservation Act eligibility determination

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

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

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

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

I. Supplemental information

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

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

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

J. Certification requirement

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

BMPP certification statement: **A BMPP will be implemented prior to initiation of discharge as part of the proposed redevelopment activities.**

Notification provided to the appropriate State, including a copy of this NOI, if required. Check one: Yes No

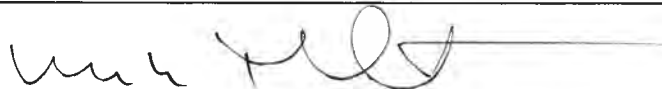
Notification provided to the municipality in which the discharge is located, including a copy of this NOI, if requested. Check one: Yes No

Notification provided to the owner of a private or municipal storm sewer system, if such system is used for site discharges, including a copy of this NOI, if requested. Check one: Yes No NA

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

Notification provided to the owner/operator of the area associated with activities covered by an additional discharge permit(s). Additional discharge permit is (check one): RGP DGP CGP MSGP Individual NPDES permit Other; if so, specify: Check one: Yes No NA

Signature:



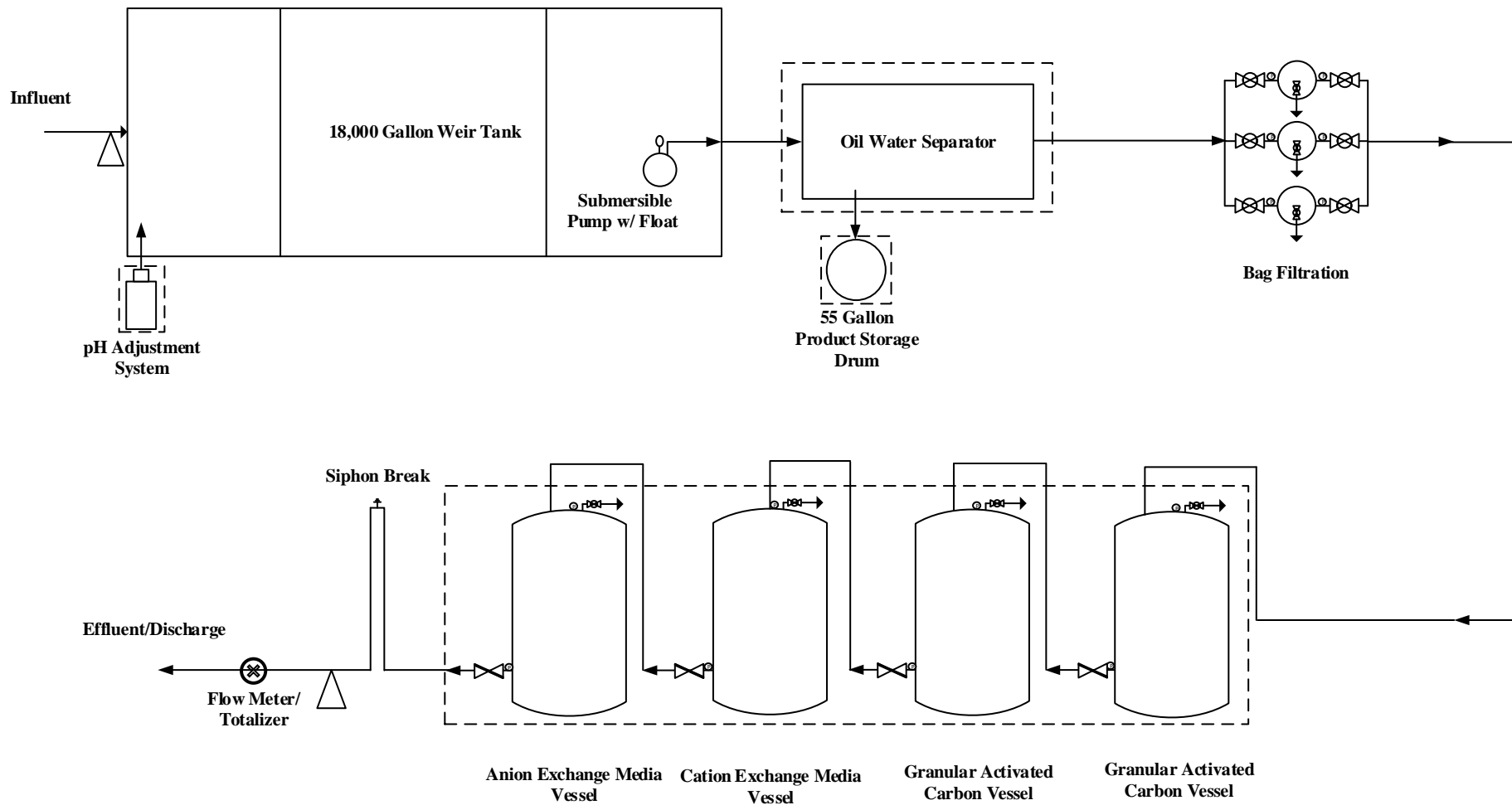
Date:

11/26/19

Print Name and Title:

Mark Theriault Vice President






**ATTACHMENT C:
TREATMENT SYSTEM DESIGN AND SPECIFICATIONS**



Notes:

- 1.) Figure is not to scale
- 2.) System rated for 100 GPM

Key:

- Piping/Hose →
- Butterfly Valve 
- Pressure Gauge 
- Ball Valve 
- Contingency 
- Sample Port 



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

DESIGNED BY: LRT
 CHECKED BY:

DRAWN BY: JHJ
 DATE:

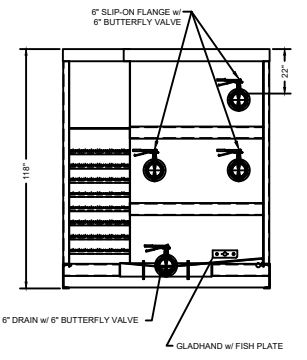
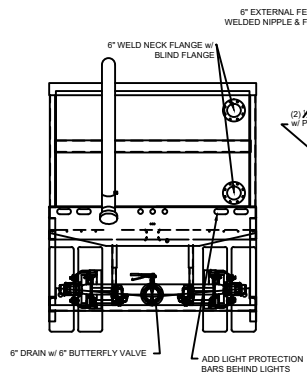
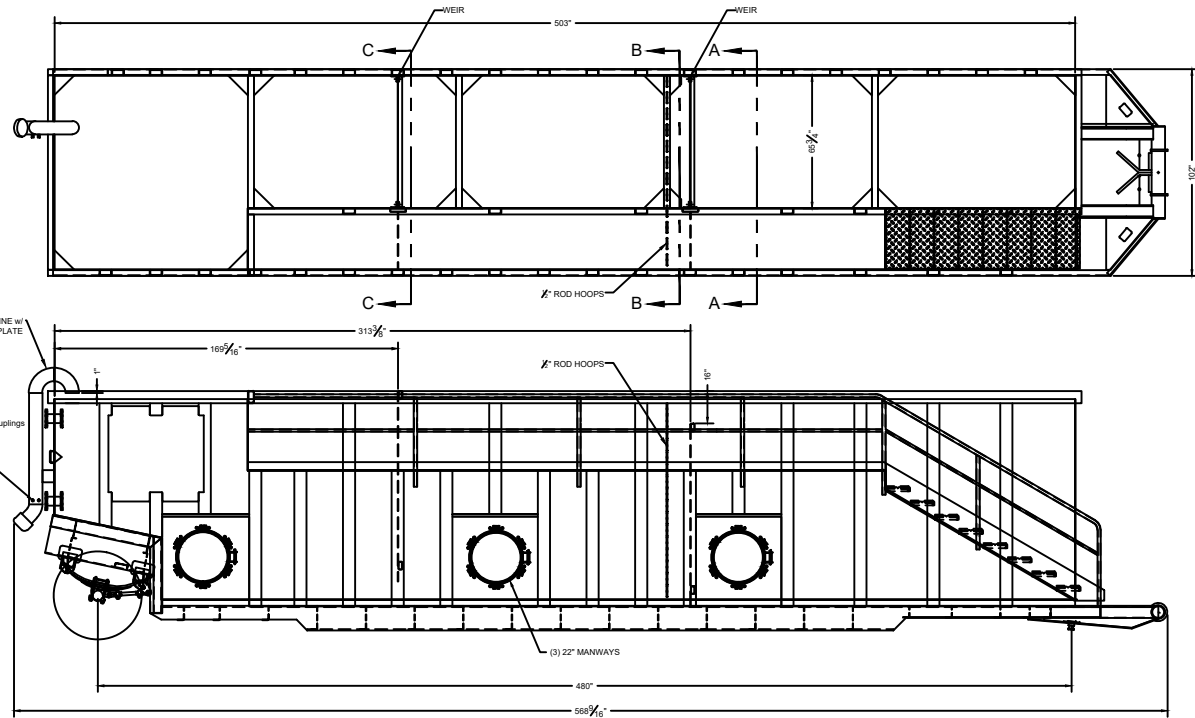
Water Treatment System Schematic

XMBLY Blocks 32A and 23B
 Somerville, MA

PROJECT No.

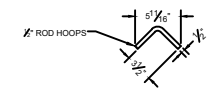
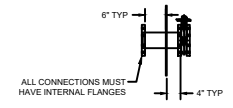
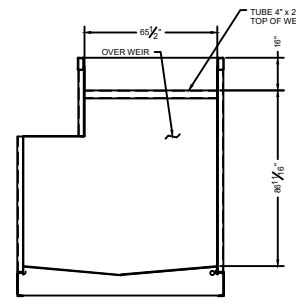
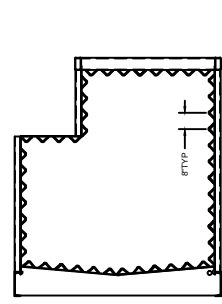
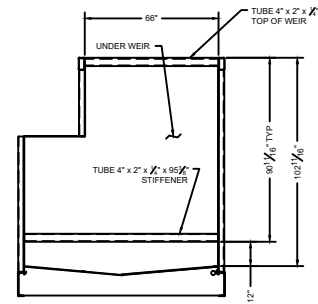
FIGURE No.

Cut Sheets



STANDARD SPECIFICATION

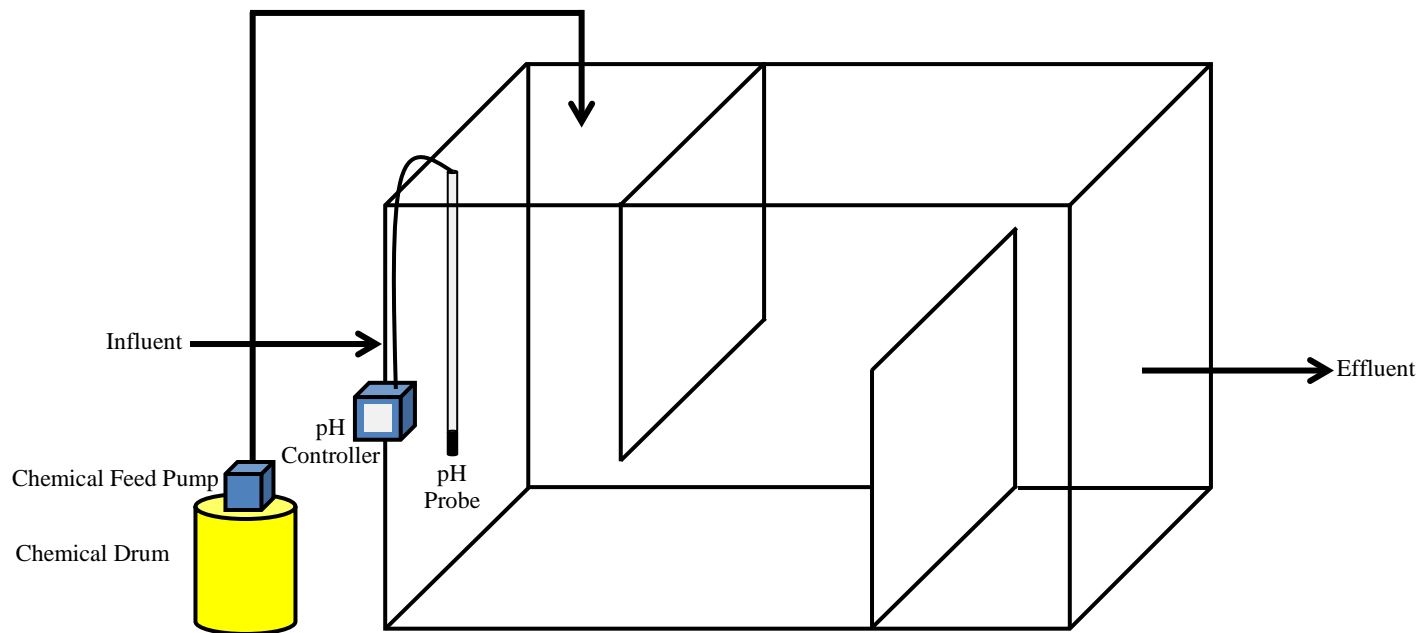
- CAPACITY: 18,480 GALLONS (440 BBL)
- SIDE SHEETS: 1/4" A36 PLATE
- FRONT SHEET: 1/4" A36 PLATE
- REAR SHEET: 1/4" A36 PLATE
- FLOOR: 1/4" A36 PLATE
- MAIN FLOOR RAILS: 12" x 20.7# STRUCTURAL CHANNEL
- FLOOR CROSSMEMBERS: 1/4" A36 PLATE
- SIDE STAKES: ONE PIECE 3/16" A36 PLATE
- SUSPENSION: 3 LEAF SPRING, 22,500 LBS. CAPACITY
- AXLE: 77.5" TRACK, 22,500 LBS. CAPACITY
- TIRES: 11R22.5 RADIAL
- WHEELS: 8.25 x 22.5 STEEL
- MANWAYS: 3 - 22" DIA. CURB SIDE
- VALVES: 3 - 6" BUTTERFLY VALVE (FRONT)
 - 1 - 6" DRAIN BUTTERFLY VALVE (FRONT)
 - 1 - 6" DRAIN BUTTERFLY VALVE (REAR)
 - 2 - 6" BLIND FLANGE CONNECTION (REAR)
- INLET PIPING: 1 - 6" PIPE SYSTEM (REAR)
- BLAST: (INTERIOR) SSPC-SP-10 (NEAR WHITE)
 (EXTERIOR) SSPC-SP-6 (COMMERCIAL BLAST)
- PAINT: (INTERIOR) EPOXYPHENOLIC 100% SOLID 20.0 MILS D.F.T.
 (EXTERIOR) FINISH COAT POLURETHANE 4.0 TO 5.0 D.F.T.



18,000 Gal. Weir Tank



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



Notes:

- 1.) Figure is not to scale.
- 2.) System layout can vary with site conditions.



89 Crawford Street
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www.lrt-llc.net

Configuration of pH Adjustment System



One Controller for the Broadest Range of Sensors.

Choose from 30 digital and analog sensor families for up to 17 different parameters.

Maximum Versatility

The sc200 controller allows the use of digital and analog sensors, either alone or in combination, to provide compatibility with Hach's broad range of sensors, eliminating the need for dedicated, parameter-specific controllers.

Ease of Use and Confidence in Results

Large, high-resolution, transreflective display provides optimal viewing resolution in any lighting condition. Guided calibration procedures in 19 languages minimize complexity and reduce operator error. Password-protected SD card reader offers a simple solution for data download and transfer. Visual warning system provides critical alerts.

Wide Variety of Communication Options

Utilize two to five analog outputs to transmit primary and secondary values for each sensor, or integrate Hach sensors and analyzers into MODBUS RS232/RS485, Profibus® DP, and HART networks.



Password protected SD card reader offers a simple solution for data download and transfer, and sc200 and digital sensor configuration file duplication and backup.

Controller Comparison



Features	Previous Models		sc200™ Controller	Benefits
	sc100™ Controller	GLI53 Controller		
Display	64 x 128 pixels 33 x 66 mm (1.3 x 2.6 in.)	64 x 128 pixels 33 x 66 mm (1.3 x 2.6 in.)	160 x 240 pixels 48 x 68 mm (1.89 x 2.67 in.) Transreflective	<ul style="list-style-type: none"> Improved user interface—50% bigger Easier to read in daylight and sunlight
Data Management	irDA Port/PDA Service Cable	N/A	SD Card Service Cable	<ul style="list-style-type: none"> Simplifies data transfer Standardized accessories/ max compatibility
Sensor Inputs	2 Max Direct Digital Analog via External Gateway	2 Max Analog Depending on Parameter	2 Max Digital and/or Analog with Sensor Card	<ul style="list-style-type: none"> Simplifies analog sensor connections Works with analog and digital sensors
Analog Inputs	N/A	N/A	1 Analog Input Signal Analog 4-20mA Card	<ul style="list-style-type: none"> Enables non-sc analyzer monitoring Accepts mA signals from other analyzers for local display Consolidates analog mA signals to a digital output
4-20 mA Outputs	2 Standard	2 Standard	2 Standard Optional 3 Additional	<ul style="list-style-type: none"> Total of five (5) 4-20 mA outputs allows multiple mA outputs per sensor input
Digital Communication	MODBUS RS232/RS485 Profibus DP V1.0	HART	MODBUS RS232/RS485 Profibus DP V1.0 HART 7.2	<ul style="list-style-type: none"> Unprecedented combination of sensor breadth and digital communication options

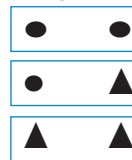
Choose from Hach's Broad Range of Digital and Analog Sensors

Parameter	Sensor	Digital or Analog
Ammonia	AMTAX™ sc, NH4D sc, AISE sc, AN-ISE sc	●
Chlorine	CLF10 sc, CLT10 sc, 9184 sc	●
Chlorine Dioxide	9185 sc	●
Conductivity	GLI 3400 Contacting, GLI 3700 Inductive	▲
Dissolved Oxygen	LDO® Model 2, 5740 sc	●
Dissolved Oxygen	5500	▲
Flow	U53, F53 Sensors	▲
Nitrate	NITRATAX™ sc, NO3D sc, NISE sc, AN-ISE sc	●
Oil in Water	FP360 sc	●
Organics	UVAS sc	●
Ozone	9187 sc	●
pH/ORP	pHD	●
pH/ORP	pHD, pH Combination, LCP	▲
Phosphate	PHOSPHAX™ sc	●
Sludge Level	SONATAX™ sc	●
Suspended Solids	SOLITAX™ sc, TSS sc	●
Turbidity	1720E, FT660 sc, SS7 sc, ULTRATURB sc, SOLITAX sc, TSS sc	●
Ultra Pure Conductivity	8310, 8311, 8312, 8315, 8316, 8317 Contacting	▲
Ultra Pure pH/ORP	8362	▲

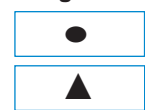
● = Digital ▲ = Analog

Connect up to two of any of the sensors listed above, in any combination, to meet your application needs. The diagrams below demonstrate the potential configurations. Operation of analog sensors requires the controller to be equipped with the appropriate sensor module. Contact Hach Technical Support for help with selecting the appropriate module.

2 Channel Configurations



1 Channel Configurations



Specifications*

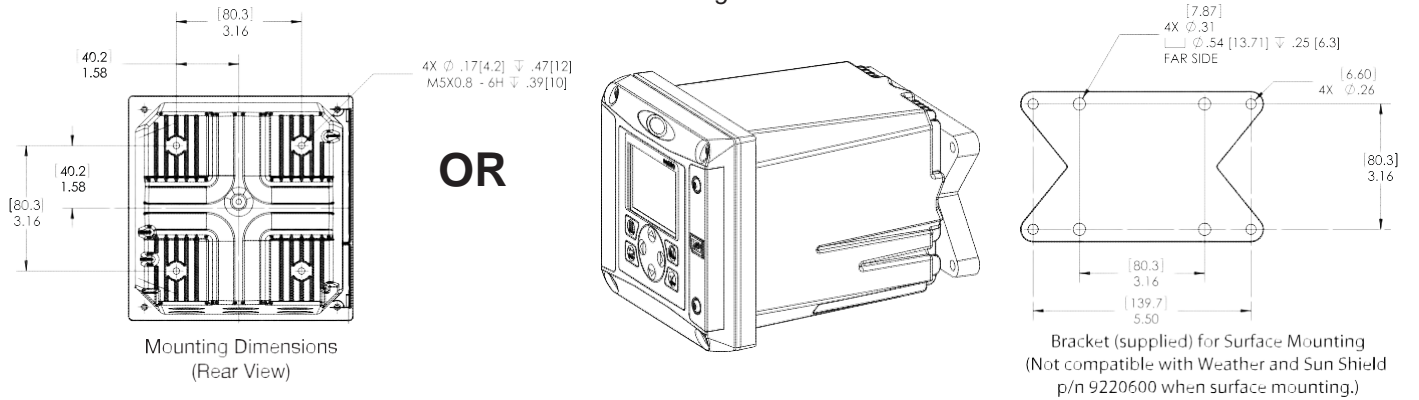
Dimensions (H x W x D)	5.7 in x 5.7 in x 7.1 in (144 mm x 144 mm x 181 mm)
Display	Graphic dot matrix LCD with LED backlighting, transreflective
Display Size	1.9 x 2.7 in. (48 mm x 68 mm)
Display Resolution	240 x 160 pixels
Weight	3.75 lbs. (1.70 kg)
Power Requirements (Voltage)	100 - 240 V AC, 24 V DC
Power Requirements (Hz)	50/60 Hz
Operating Temperature Range	-20 to 60 °C , 0 to 95% RH non-condensing
Analog Outputs	Two (Five with optional expansion module) to isolated current outputs, max 550 Ω , Accuracy: ± 0.1% of FS (20mA) at 25 °C, ± 0.5% of FS over -20 °C to 60 °C range Operational Mode: measurement or calculated value
Analog Output Functional Mode	Linear, Logarithmic, Bi-linear, PID
Security Levels	2 password-protected levels
Mounting Configurations	Wall, pole, and panel mounting
Enclosure Rating	NEMA 4X/IP66
Conduit Openings	1/2 in NPT Conduit
Relay: Operational Mode	Primary or secondary measurement, calculated value (dual channel only) or timer

Relay Functions	Scheduler (Timer), Alarm, Feeder Control, Event Control, Pulse Width Modulation, Frequency Control, and Warning
Relays	Four electromechanical SPDT (Form C) contacts, 1200 W, 5 A
Communication	MODBUS RS232/RS485, PROFIBUSDPV1, or HART 7.2 optional
Memory Backup	Flash memory
Electrical Certifications	EMC CE compliant for conducted and radiated emissions: - CISPR 11 (Class A limits) - EMC Immunity EN 61326-1 (Industrial limits) Safety cETLus safety mark for: - General Locations per ANSI/UL 61010-1 & CAN/CSA C22.2. No. 61010-1 - Hazardous Location Class I, Division 2, Groups A,B,C & D (Zone 2, Group IIC) per FM 3600 / FM 3611 & CSA C22.2 No. 213 M1987 with approved options and appropriately rated Class I, Division 2 or Zone 2 sensors cULus safety mark - General Locations per UL 61010-1 & CAN/CSA C22.2. No. 61010-1

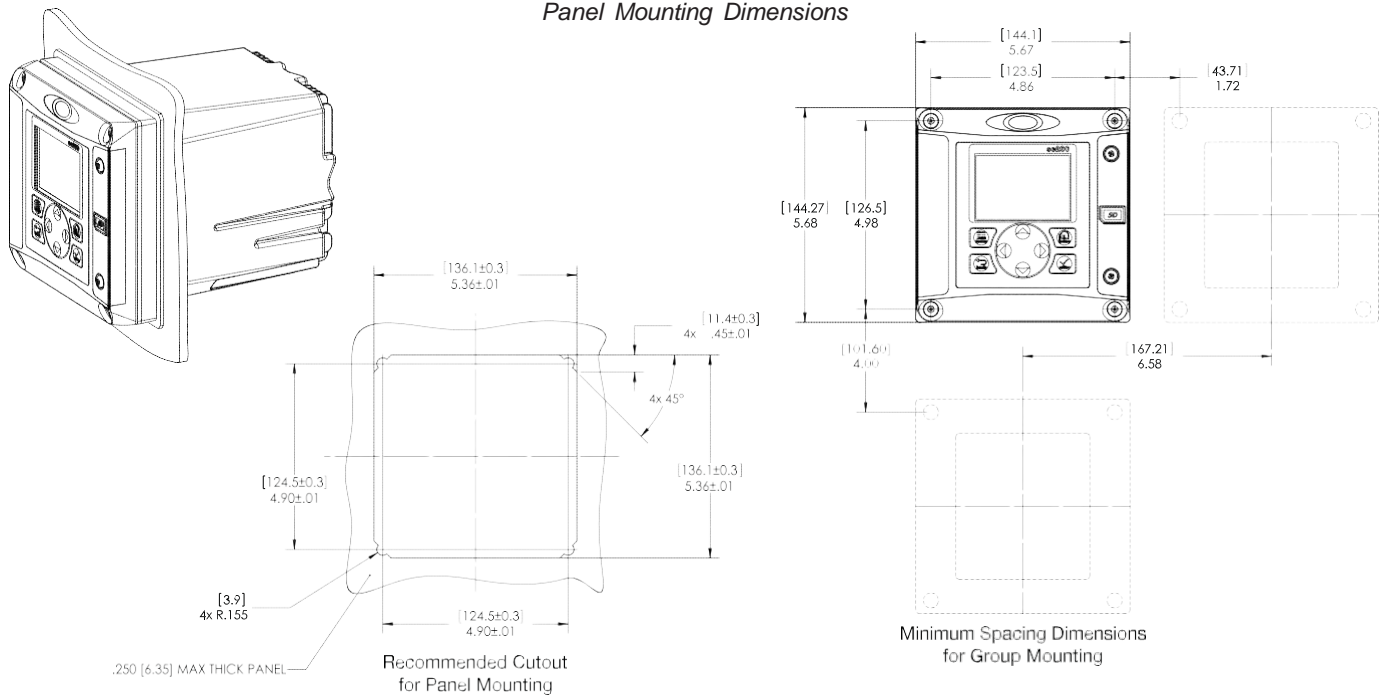
**Subject to change without notice.*

Dimensions

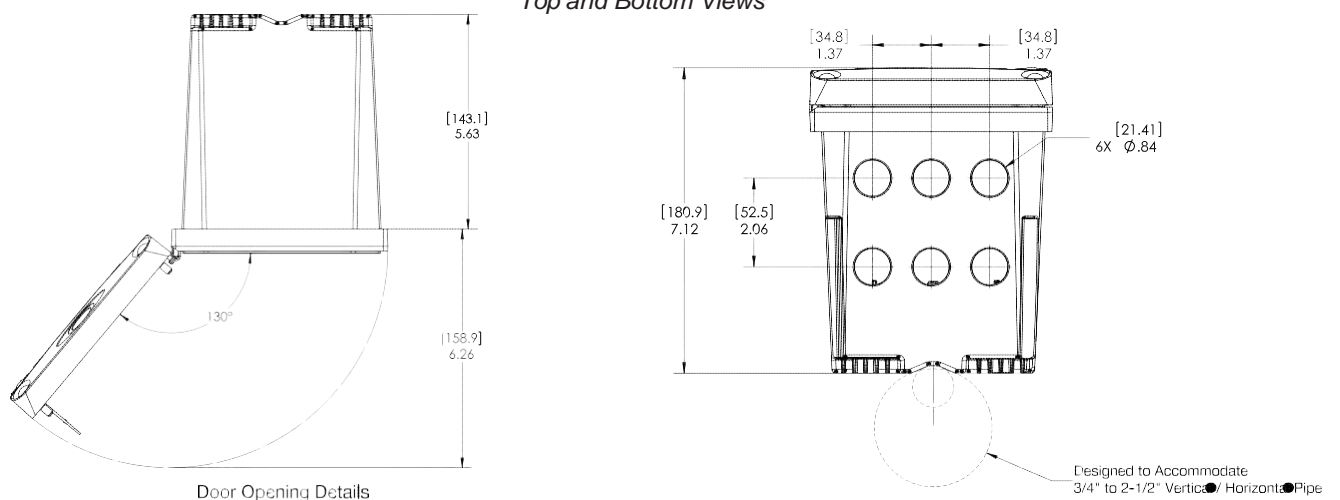
Surface Mounting Dimensions



Panel Mounting Dimensions



Top and Bottom Views



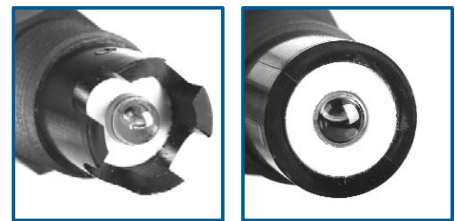


3/4-inch Combination pH and ORP Sensor Kits

pH/ORP



Use the Digital Gateway to make any Hach analog combination pH or ORP sensor compatible with the Hach sc1000 Controller.



Digital combination pH and ORP sensors are available in convertible, insertion, and sanitary mounting styles. Choose from rugged dome electrodes or "easy-to-clean" flat glass electrodes.

DW

WW

PW

IW

Features and Benefits

Low Price—High Performance

These combination sensors are designed for specialty applications for immersion or in-line mounting. The reference cell features a double-junction design for extended service life, and a built-in solution ground. The body is molded from chemically-resistant Ryton® or PVDF, and the reference junction is coaxial porous Teflon®. All sensors are rated 0 to 105°C up to 100 psig, and have integral 4.5 m (15 ft.) cables with tinned leads. The PC-series (for pH) and RC-series (for ORP) combination sensors are ideal for measuring mild and aggressive media.

Special Electrode Configurations

Sensors with rugged dome electrodes, "easy-to-clean" flat glass electrodes, and even HF (hydrofluoric acid) resistant glass electrodes are available for a wide variety of process solutions.

Temperature Compensation Element Option

The PC-series combination pH sensors are available with or without a Pt 1000 ohm RTD temperature element. The RC-series combination ORP sensors are supplied without a temperature element.

Versatile Mounting Styles

Sensors are available in three mounting styles—convertible, insertion, and sanitary. Please turn to page 3 for more information.

Full-Featured "Plug and Play" Hach sc Digital Controllers

There are no complicated wiring or set up procedures with any Hach sc controller. Just plug in any combination of Hach digital sensors and it's ready to use—it's "plug and play."

One or multiple sensors—The sc controller family allows you to receive data from up to eight Hach digital sensors in any combination using a single controller.

Communications—Multiple alarm/control schemes are available using the relays and PID control outputs. Available communications include analog 4-20 mA, digital MODBUS® (RS485 and RS232) or Profibus DP protocols. (Other digital protocols are available. Contact your Hach representative for details.)

Data logger—A built-in data logger collects measurement data, calibration, verification points, and alarm history.

Specifications*

Most pH applications fall in the 2.5-12.5 pH range. General purpose pH glass electrodes perform well in this range. Some industrial applications require accurate measurements and control at pH values below 2 or above 12. Consult Hach Technical Support for details on these applications.

Combination pH Sensors

Measuring Range

0 to 14 pH

Accuracy

Less than 0.1 pH under reference conditions

Temperature Range

0 to 105°C (32 to 221°F)

Flow Rate

0 to 2 m/s (0 to 6.6 ft./s); non-abrasive

Pressure Range

0 to 6.9 bar at 100°C (0 to 100 psig at 212°F)

Signal Transmission Distance

100 m (328 ft.) when used with the Hach Digital Gateway and a Hach sc Digital Controller.

1000 m (3280 ft.) when used with the Hach Digital Gateway, Termination Box, and a Hach sc Digital Controller.

Sensor Cable

Integral coaxial cable (plus two conductors for temperature compensator option); 4.5 m (15 ft.) long

Wetted Materials

Convertible style: Ryton® body (glass filled)

Insertion style: PVDF body (Kynar®)

Sanitary style: 316 stainless steel sleeved PVDF body

Common materials for all sensor styles include PTFE Teflon double junction, glass process electrode, and Viton® O-rings

Warranty

90 days

Combination ORP Sensors

Measuring Range

-2000 to +2000 millivolts

Accuracy

Limited to calibration solution accuracy (± 20 mV)

Temperature Range

0 to 105°C (32 to 221°F)

Flow Rate

0 to 2 m/s (0 to 6.6 ft./s); non-abrasive

Pressure Range

0 to 6.9 bar at 100°C (0 to 100 psig at 212°F)

Signal Transmission Distance

100 m (328 ft.) when used with the Hach Digital Gateway and a Hach sc Digital Controller.

1000 m (3280 ft.) when used with the Hach Digital Gateway, Termination Box, and a Hach sc Digital Controller.

Sensor Cable

Integral coaxial cable; 4.5 m (15 ft.) long; terminated with stripped and tinned wires

Wetted Materials

Convertible style: Ryton® body (glass filled)

Insertion style: PVDF body (Kynar®)

Common materials for all sensor styles include PTFE Teflon double junction, glass with platinum process electrode, and Viton® O-rings

Warranty

90 days

*Specifications subject to change without notice.

Ryton® is a registered trademark of Phillips 66 Co.; Viton® is a registered trademark of E.I. DuPont de Nemours + Co.; Kynar® is a registered trademark of Pennwalt Corp.

Engineering Specifications

- The pH sensor shall be available in convertible, insertion or sanitary styles. The ORP sensor shall be available in only convertible or insertion styles.
- The convertible style sensor shall have a Ryton® body. The insertion style sensor shall have a PVDF body. The sanitary style sensor shall have a 316 stainless steel sleeved PVDF body. Common materials for all sensor styles shall include a PTFE Teflon® double junction, and Viton® O-rings. The pH sensor shall have a glass pH electrode. The ORP sensor shall have a platinum ORP electrode.
- The convertible style pH sensor shall be available with or without a built-in Pt 1000 ohm RTD temperature element. Insertion and sanitary style pH sensors shall have a built-in Pt 1000 ohm RTD temperature element. Convertible and insertion style ORP sensors shall not have a built-in temperature element.
- The sensor shall communicate via MODBUS® RS-485 to a Hach sc Digital Controller.
- The sensor shall be Hach Company Model PC sc or PC-series for pH measurement or Model PC sc or RC-series for ORP measurement.

Dimensions

Convertible Style Sensor

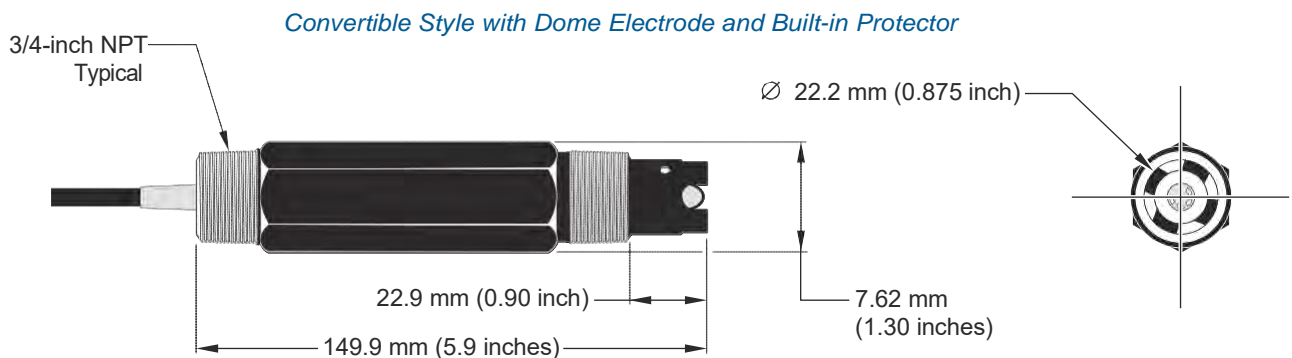
The convertible style sensor has a Ryton® body that features 3/4-inch NPT threads on both ends. The sensor can be directly mounted into a standard 3/4-inch pipe tee for flow-through mounting or fastened onto the end of a pipe for immersion mounting. The convertible style sensor enables inventory consolidation, thereby reducing associated costs. Mounting tees and immersion mounting hardware are offered in a variety of materials to suit application requirements.

Insertion Style Sensor

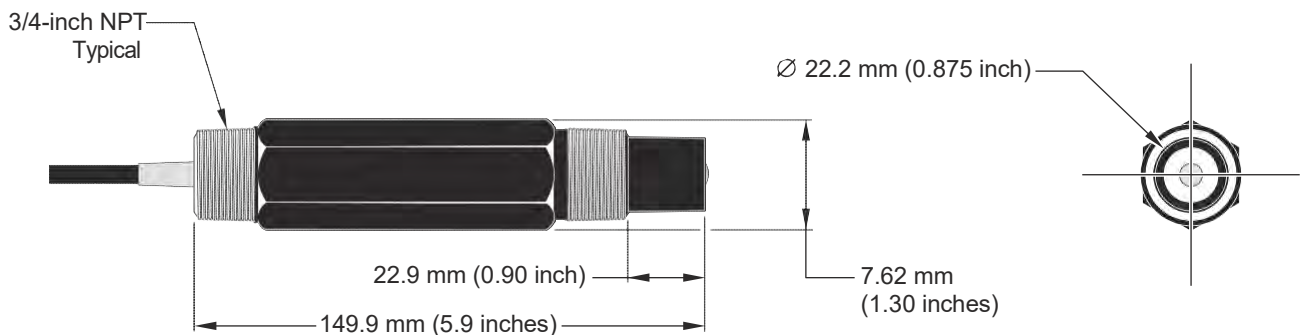
Insertion style sensors feature a longer, non-threaded PVDF body with two Viton® O-rings, providing a seal when used with the optional Hach insertion mount hardware assembly. This ball valve hardware enables sensor insertion and retraction from a pipe or vessel without having to stop the process flow.

Sanitary Style Sensor

The sanitary style sensor, offered for pH measurement, has a 316 stainless steel-sleeved PVDF body with a 2-inch flange. The sensor mates to a standard 2-inch Tri-Clover fitting. The optional Hach sanitary mounting hardware includes a standard 2-inch sanitary tee, sanitary clamp, and Viton® sanitary gasket.



Convertible Style with Flat Electrode





The Pulsatron Series A Plus offers manual function controls over stroke length and stroke rate as standard with the option to select external pace for automatic control.

Ten distinct models are available, having pressure capabilities to 250 PSIG (17 BAR) @ 12 GPO (1.9 lph), and flow capacities to 58 GPO (9.1 lph) @ 100 PSIG (7.0 BAR), with a standard turndown ratio of 100:1, and optional ratio of 1000:1. Metering performance is reproducible to within \pm 3% of maximum capacity.

Features

- Manual Control by on-line adjustable stroke rate and stroke length.
- Highly Reliable timing circuit.
- Circuit Protection against voltage and current upsets.
- Solenoid Protection by thermal overload with auto-reset.
- Water Resistant, for outdoor and indoor applications.
- Internally Dampened To Reduce Noise.
- Guided Ball Check Valve Systems, to reduce back flow and enhance outstanding priming characteristics.
- Few Moving Parts and Wall Mountable.
- Safe & Easy Priming with durable leak-free bleed valve assembly (standard).
- Optional Control: External pace with auto/manual selection.

Controls



Manual Stroke Rate

Manual Stroke Length

External Pacing- Optional

External Pace With Stop-
Optional (125 SPM only)

Controls Options

Feature	Standard Configuration	Optional Configuration ¹
External Pacing	--	Auto / Manual Selection ¹
External Pace w/ Stop (125SPM only)	--	Auto / Manual Selection ²
Manual Stroke Rate	10:1 Ratio	100:1 Ratio
Manual Stroke Length	10:1 Ratio	10:1 Ratio
Total Turndown Ratio	100:1 Ratio	1000:1 Ratio

Note 1: On S2, S3 & S4 sizes only.

Note 2: Not available on 1000:1 turndown pumps.

Operating Benefits

- Reliable metering performance.
- Rated "hot" for continuous duty.
- High viscosity capability.
- Leak-free, sealless, liquid end.



Aftermarket

- KOPkits
- Gauges
- Dampeners
- Pressure Relief Valves
- Tanks
- Pre-Engineered Systems
- Process Controllers (PULSAblue, MicroVision)



Series A Plus Electronic Metering Pumps



Series A Plus Specifications and Model Selection

MODEL		LBC2	LB02	LBC3	LB03	LB04	LB64	LBC4	LBS2	LBS3	LBS4	
Capacity nominal (max.)	GPH	0.25	0.25	0.42	0.50	1.00	125	2.00	0.50	1.38	2.42	
	GPO	6	6	10	12	24	30	48	12	33	58	
	LPH	0.9	0.9	1.6	1.9	3.8	4.7	7.6	1.9	5.2	9.14	
Pressure ³ (max.)	GFPP, PVDF, 316SS or PVC (<N/code) w/TFE Seats)	PSIG (Bar)	250 (17)	150 (10)	250 (17)	150 (10)	100 (7)	100 (7)	50 (33)	250 (17)	150 (10)	100 (7)
	PVC (V code) Viton or CSPE Seats IDegas Liquid End		150 (10)							150 (10)		
Connections:		Tubina	14"DX 38" OD					38"DX 12" OD		14"DX 38" OD		
		Piolina						114"FNPT				
Strokes/Minute		SPM	125							250		

Note 3: Pumps with rated pressure above 150 PSI will be de-rated to 150 PSI Max. when selecting certain valve options, see Price Book for details.

Engineering Data

Pump Head Materials Available: GFPP, PVC, PVDF, 316 SS, PTFE-faced CSPE-backed

Diaphragm: PTFE-faced CSPE-backed

Check Valves Materials Available: Seats/O-Rings: PTFE, CSPE, Viton

Balls: Ceramic, PTFE, 316 SS, Alloy C

Fittings Materials Available: GFPP, PVC, PVDF

Bleed Valve: Same as fitting and check valve selected, except 316SS

Injection Valve & Foot Valve Assy: Same as fitting and check valve selected

Tubing: Clear PVC, White PE

Important: Material Code - GFPP=Glass-filled Polypropylene, PVC=Polyvinyl Chloride, PE=Polyethylene, PVDF=Polyvinylidene Fluoride, CSPE=Generic formulation of Hypalon, a registered trademark of E.I. DuPont Company. Viton is a registered trademark of E.I. DuPont Company. PVC wetted end recommended for sodium hypochlorite.

Engineering Data

Reproducibility: +/- 3% at maximum capacity

Viscosity Max CPS: 1000 CPS

Stroke Frequency Max SPM: 125 / 250 by Model

Stroke Frequency Turn-Down Ratio: 10:1/100:1 by Model

Stroke Length Turn-Down Ratio: 10:1

Power Input: 115 VAC/50-60 HZ/1 ph, 230 VAC/50-60 HZ/1 ph

Average Current Draw: @ 115 VAC; Amps: 0.6 Amps, @ 230 VAC; Amps: 0.3 Amps

Peak hput Power: 130 Watts

Average Input Power @ Max SPM: 50 Watts

Custom Engineered Designs- Pre-Engineered Systems

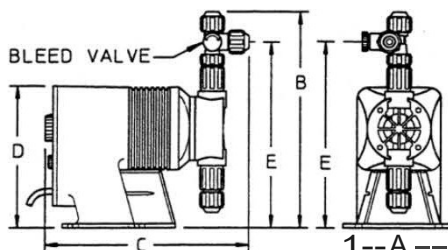


Pre-Engineered Systems Pulsafeeder's Pre-Engineered Systems are designed to provide complete chemical feed solutions for all electronic metering applications. From stand alone simplex pH control applications to full-featured, redundant sodium hypochlorite disinfection metering, these rugged fabricated assemblies offer turn-key simplicity and industrial-grade durability. The UV-stabilized, high-grade HOPE frame offers maximum chemical compatibility and structural rigidity. Each system is factory assembled and hydrostatically tested prior to shipment.

Dimensions

Series A PLUS Dimensions (inches)						
Model No.	A	B	C	D	E	Shipping Weight
LB02 IS2	5.0	9.6	9.5	6.5	8.2	10
LBC2	5.0	9.9	9.5	6.5	8.5	10
LBC3	5.0	9.9	9.5	6.5	8.5	10
LB03 IS3	5.0	9.9	9.5	6.5	8.5	10
LB064	5.0	9.9	9.5	6.5	8.5	10
LB64	5.0	9.9	9.5	6.5	8.5	10
LBC4	5.0	9.9	9.5	6.5	8.5	10

NOTE: inches X 2.54 cm





95-Gallon OverPack - 32" dia x 41.5", 1 each/package



Stock a SpillTech® OverPack with sorbents for emergency spill response, or use it as a salvage drum to ship damaged containers or hazardous waste.

- **DOT-Approved for Salvage:** All SpillTech® OverPacks are DOT-approved and X-rated for use as salvage drums. Helps companies conform to federal regulations when shipping damaged or leaking containers of hazardous materials, or absorbents contaminated with hazardous substances.
- **Perfect for Spill Kits:** Stores sorbent products (not included) for easy access as needed for spill control. Saves time when quick response is necessary.
- **Sturdy Construction:** 100% polyethylene OverPack resists chemicals, rust and corrosion for years of use. Integrated handles make them easy to lift, move or carry with standard material handling equipment. Twist-on, double-wall lid with closed-cell gasket provides sealed, secure closure to prevent leaks and protect contents from moisture, dirt and damage. Durable to withstand rough handling.
- **Customized for You:** We can customize a Spill Kit to your exact specifications, including the container, its contents and accessories, with no upcharge! Contact your local Distributor for details.

A95OVER Specifications

Dimensions:	ext. dia. 32" x 41.5" H
Shipping Dimensions:	31.75" W x 41.5" L x 31.75" H
Sold as:	1 per package
Color:	Yellow
Composition:	Polyethylene
# per Pallet:	3
Incinerable:	No
Ship Class:	250

Metric Equivalent Specifications

Dimensions:	ext. dia. 81.3cm x 105.4cm H
Shipping Dimensions:	80.6cm W x 105.4cm L x 80.6cm H
Dimensions:	





A95OVER Technical Information

Warnings & Restrictions:

There are no known warnings and restrictions for this product.

Regulations and Compliance:

49 CFR 173.3(c)(1) - If a container of hazardous waste is damaged or leaking, it can be placed in a compatible salvage drum that meets UN criteria for shipping

49 CFR 173.12(b)(2)(iv) - When labpacking, "Inner packagings...must be surrounded by a chemically compatible absorbent material in sufficient quantity to absorb the total liquid contents."

49 CFR 173.12(b) - A container used for labpacking must be "a UN 1A2 or UN 1B2 metal drum, a UN 1D plywood drum, a UN 1G fiber drum or a UN 1H2 plastic drum tested and marked at least for the Packing Group III performance level for liquids or solids."





LB Series

Top discharge provides maximum motor cooling while allowing continuous duty operation.

Available in single-phase or three-phase. Pumps fit into 8-inch pipes.



LB Series Features

LB(T)-1500:

High chrome semi-open impeller resists wear for adhesive particles.

Diode motor protectors prevent stator damage in high amperage or run-dry situations.

Up to 70' shut off head

Slimline design allows pumps to fit into 8" pipes.



LB Series Features

LB-800:

Designed to fit an 8" pipe.

Up to 60' shut off head.

Available in 110V and 220V single-phase with 50 foot cables.

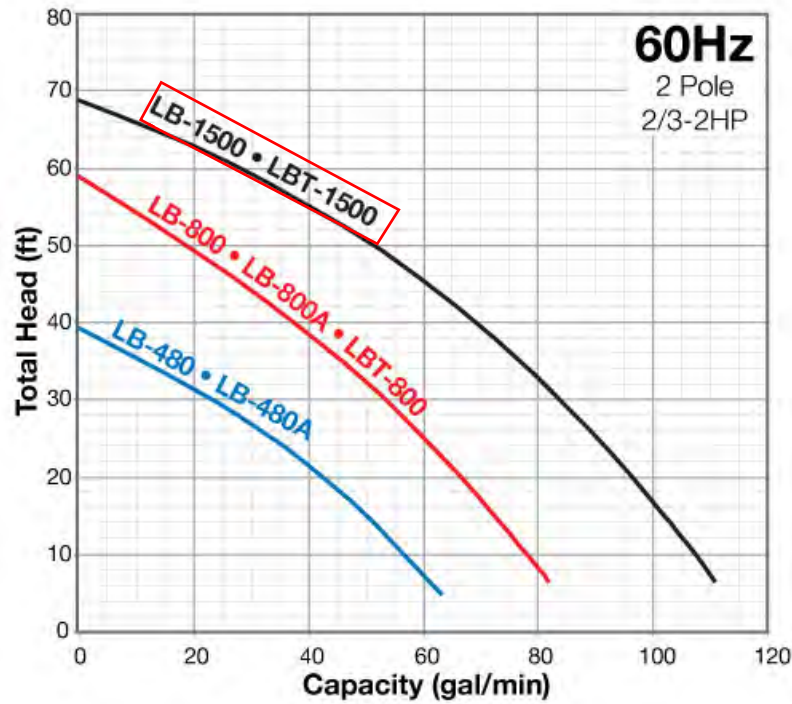
Double Inside Mechanical Seal With SiC faces provides the longest operational life.

Oil Lifter provides lubrication of the seal faces.

OPTIONAL ACCESSORIES

Float Switch for automatic operation
TS-302 for 110V, TS-303 for 220V.

Performance Range

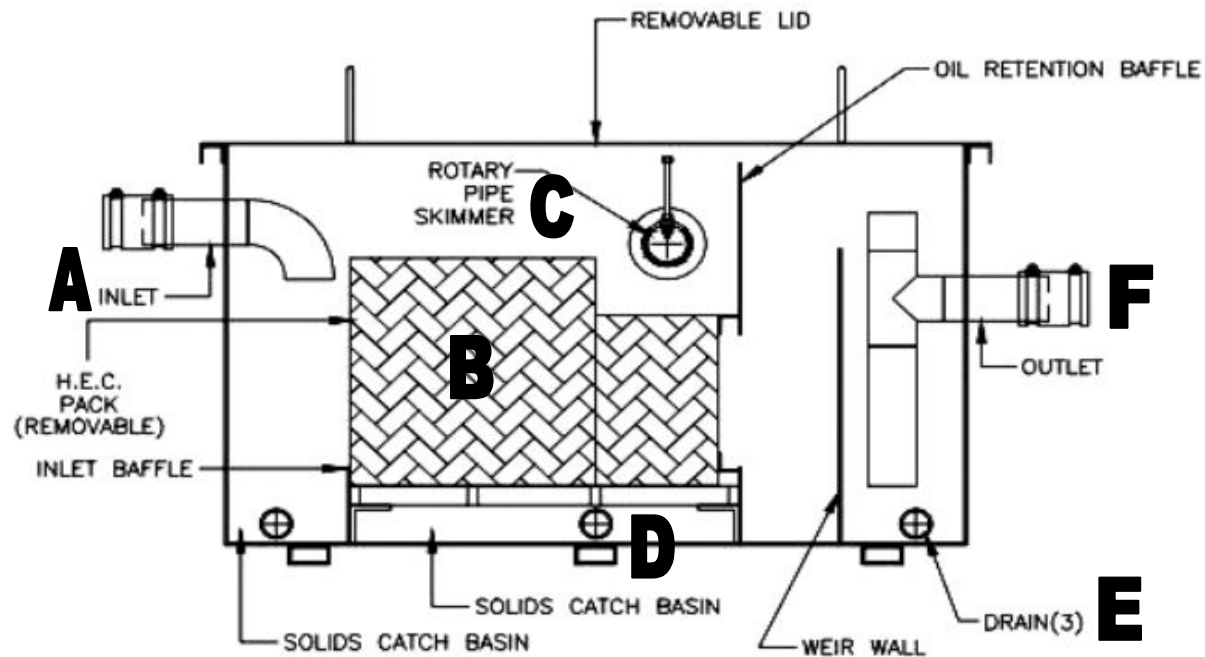


Model	Discharge Size (in.)	Motor Output (HP)	Voltage (V)	Cable Length (ft.)	Diameter (in.)	Height (in.)	Weight (lbs.)
LB-1500	3	2	110V or 220V	50	7 3/8	23 5/16	72
LB-480	2	2/3	110V	32	7 3/8	11 1/4	28
LB-480A	2	2/3	110V	32	8 3/4	11 1/4	30
LB-800	2	1	115V or 230V	50	7 3/8	13 7/16	35
LB-800A	2	1	115 or 230	50	8 3/4	23 5/16	38
LBT-1500	2 or 3	2	230 or 460 or 575V	50	7 3/8	23 5/16	85
LBT-800	2	1	230 or 460 or 575V	50	7 3/8	13 7/16	35



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

Environmental Oil Water Separator



Specifications:

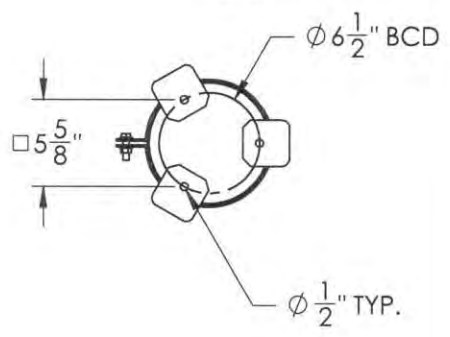
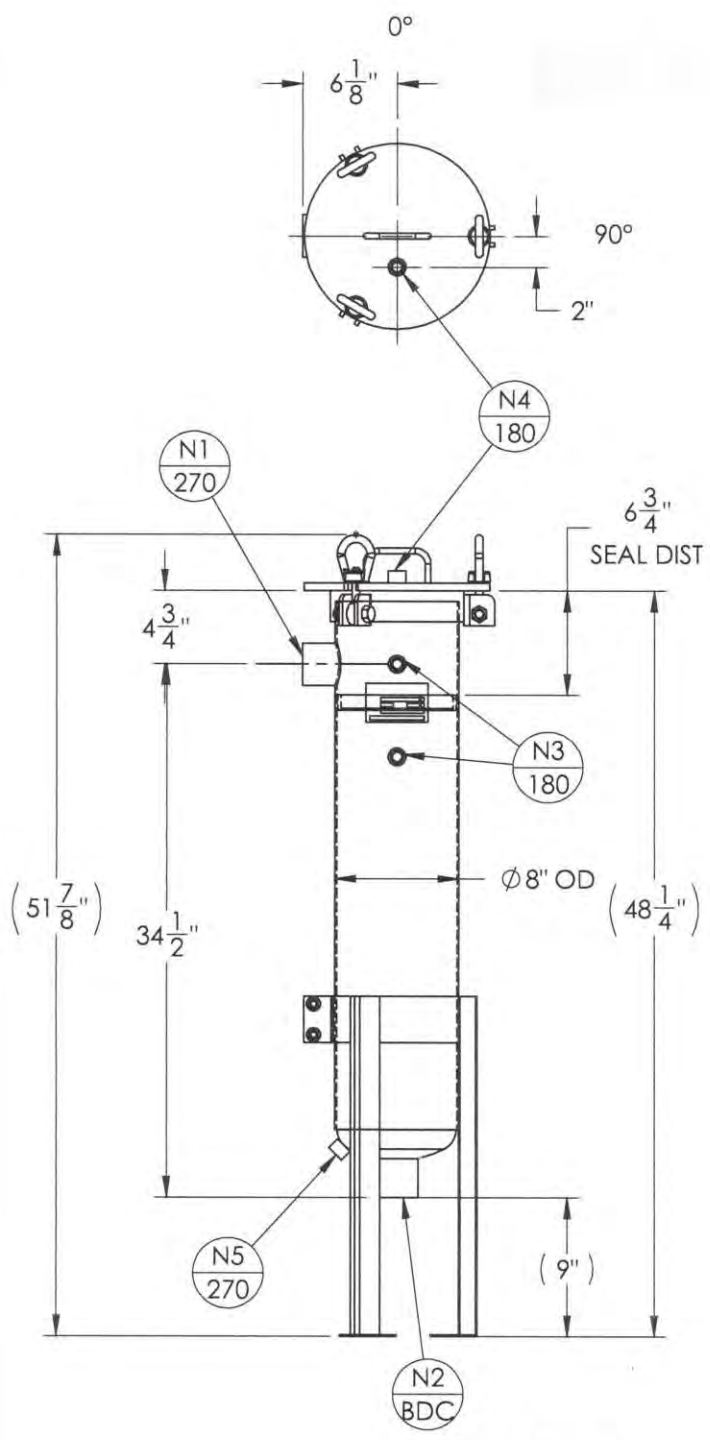
- Rated for 100 gpm
- Manual drain line for NAPL
- Coalescing Media

- A: Inlet
- B: Separation Chamber with Coalescing Media
- C: Drain Line for Oil/NAPL
- D: Clarifier with Sludge Drain Line
- E: Clean Water Chamber

NOZZLE SCHEDULE			
MARK	QTY	SIZE / RATING	DESCRIPTION
N1	1	2" 150# NPT	INLET
N2	1	2" 150# NPT	OUTLET
N3	2	1/2" 3000# NPT	PRESS GA
N4	1	1/2" 3000# NPT	VENT
N5	1	1/2" 3000# NPT	CLEAN DRAIN
N6	-	-	DIRTY DRAIN

VESSEL DESIGN CONDITIONS	
CODE: BEST COMMERCIAL PRACTICE	
M.A.W.P.: 150 PSI @ 250°F	M.D.M.T.: -20° F @ 150 PSI
M.A.E.P.: 15 PSI @ 250°F	
CORROSION ALLOWANCE: NONE	HYDROTEST PRESS: 195 PSI
STAMP: 'NC'	SERVICE: NON LETHAL
PWHT: N/A	RADIOGRAPHY: N/A
MATERIAL: SS 304/L	GASKET: BUNA-N

DRY WEIGHT: 77.62 #'s
 FLOODED WEIGHT: 140 #'s
 SHIPPING WEIGHT: 100 #'s
 VESSEL VOLUME: 1.0 C.F.



NOTES:
 • VESSEL WILL HOUSE (QTY=1) DOUBLE LENGTH BASKET.

1:1

REV.	DATE	REVISION	DRAWN	APP'D
 89 Crawford Street Leominster, MA 01453 Tel: 774.450.7177 Fax: 888.835.0617				
LRT Provided Bag Filter Housing				
EQUIPMENT: BAG FILTER HOUSING (EB SERIES)				
MODEL NO: S4EB112-2P-SW				
CUSTOMER:				
PARENT: NONE	DRAWN: CR	DATE: JAN 13 2011	JOB No. V-	DWG. No. 001-0123
PAGE: 1 OF 4	CHK'D: JM	SCALE: NTS		REV. No. 0



Polyester Liquid Filter Bag



Features

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

Applications

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

Sizes

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

Micron Ratings

Available fibers range from 1 to 1500 microns

Options

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

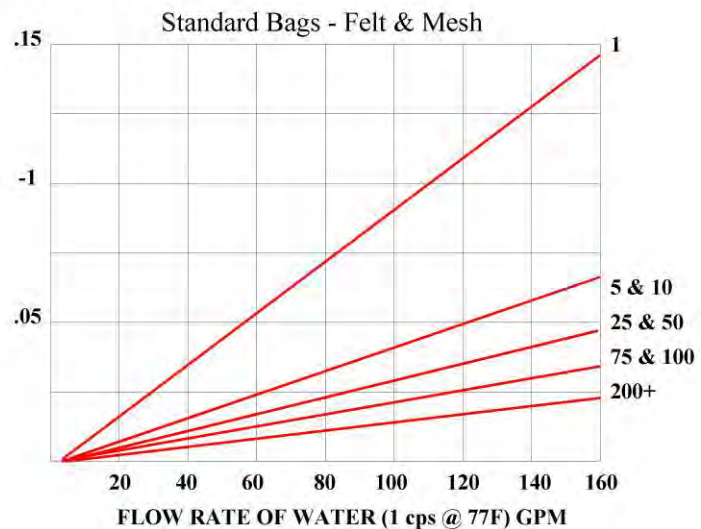
Optional Filter Media

Felt: Nomex, Polyester, Polypropylene

Monofilament: Nylon, Polyester, Polypropylene

Multifilament: Nylon, Polyester

Polypropylene: Oil Removal



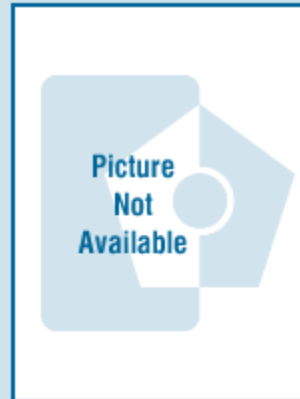


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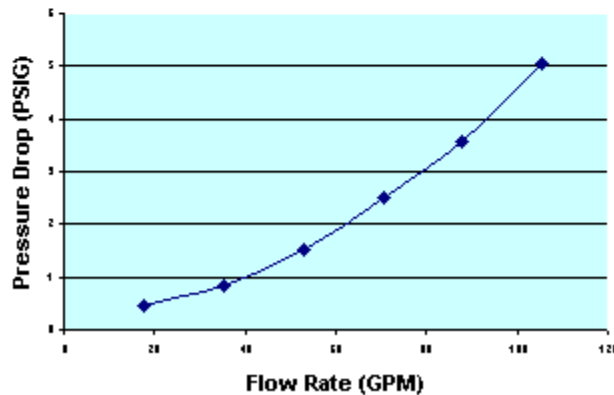
HPAF SERIES FILTERS MODEL HPAF-2000

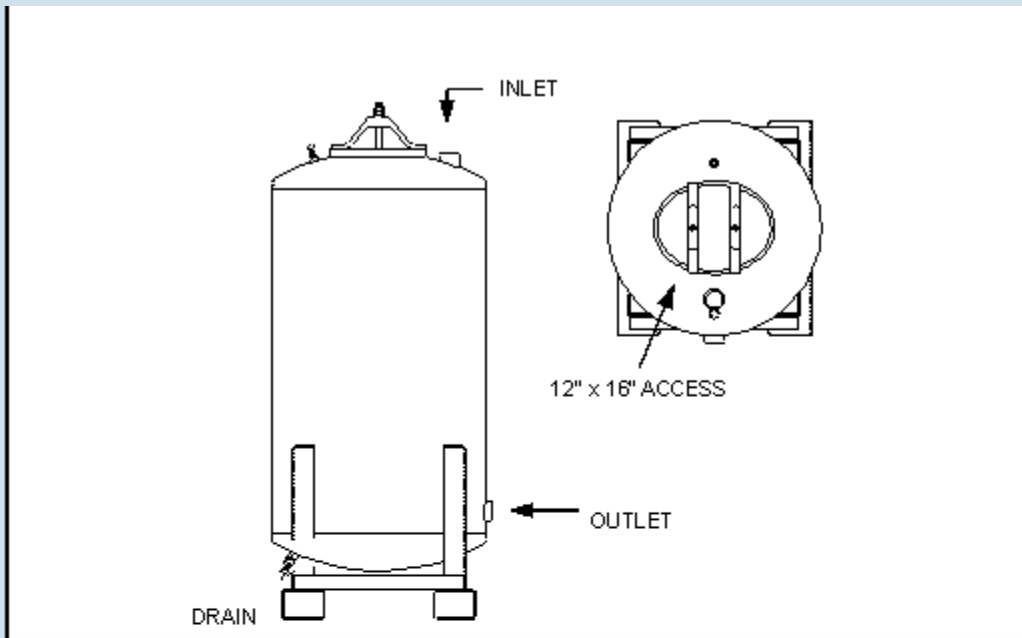
The HPAF-2000 filter is a media filter vessel designed to treat liquid streams. While the typical design application is a activated carbon adsorption unit, the filter can easily accommodate many medias. Some applications include:

- Dissolved Organic Removal (Activated Carbon)
- Suspended Solids Removal (Sand Filter)
- Dissolved Minerals (Softener Resin)
- Oil and Grease Removal (Organo-Clays)
- Dissolved and Precipitated Metals Removal
- Special Organics (Resin/Carbon Blend)
- Catalytic Reactor (Chlorine and Peroxide Removal)
- Bio-Remediation Contactor Unit



PRESSURE DROP GRAPH
(As Filled - 8"30 GAC)





HPAF-2000 SPECIFICATIONS			
Overall Height	8'6"	Vessel/Internal Piping Materials	CS (SA-36) / SCH 40 PVC
Diameter	48"	Internal Coating	Polyamide Epoxy Resin
Inlet / Outlet (FNPT)	3"	External Coating	Epoxy Mastic
Drain / Vent (FNPT)	3/4" / 1/2"	Maximum Pressure / Temp	75 PSIG / 140° F
GAC Fill (lbs)	2,000	Cross Sectional Bed Area	12.5 FT ²
Shipping / Operational Weight (lbs)	1,295 / 3,295	Bed Depth/Volume	5.5 FT / 68.7 FT ³



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

FILTRATION MEDIA :

8x30 RE-ACTIVATED CARBON

4x10 RE-ACTIVATED CARBON

GENERAL DESCRIPTION

Select Re-Activated carbon from domestic sources is quality screened during our purchasing process for activity, density and fines. The use of re-activated carbon is recommended as a lower cost alternative for most sites where drinking water quality is not necessary. In many cases our re-activated carbon meets and exceeds imported virgin carbon. In addition all carbon either sold by itself or installed in our filtration units traced by lot number to the installation or sale.

8x30 (Liquid Phase) Standard Specifications:	Standard	Value
Iodine Number	ASTM D-4607	800 Minimum
Moisture Content	ASTM D-2867	5% Maximum (as packed)
Particle Size	ASTM D-2862	8x30 US Mesh
Ash		10% Maximum
Total Surface Area (N2BET)		1050 Minimum
Pore Volume (cc/g)		0.75

4*10 (Vapor Phase) Standard Specifications:	Standard	Value
Carbon Tetrachloride Activity Level	ASTM D-3467	40 Minimum
Moisture Content	ASTM D-2867	5% Maximum (as packed)
Particle Size	ASTM D-2862	4x10 US Mesh
Ash		10% Maximum
Total Surface Area (N2BET)		1050 Minimum
Pore Volume (cc/g)		0.75

RESINTECH CGS is a sodium form standard crosslinked gel strong acid cation resin. CGS is optimized for residential applications that require good regeneration efficiency and high capacity. RESINTECH CGS is intended for use in all residential and commercial softening applications that do not have significant amounts of chlorine in the feedwater. CGS is supplied in the sodium form.



**NSF/ANSI 44-61 CERTIFIED FOR
MATERIAL SAFETY**

FEATURES & BENEFITS

- RESIDENTIAL SOFTENING APPLICATIONS**

Resin parameters are optimized for residential softeners

- LOW COLOR THROW**

- SUPERIOR PHYSICAL STABILITY**

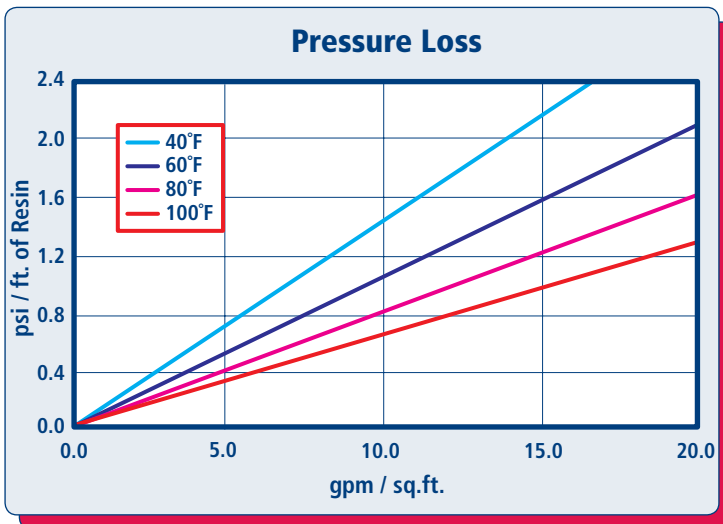
93% plus sphericity and high crush strengths together with carefully controlled particle distribution provides long life and low pressure drop

- COMPLIES WITH US FDA REGULATIONS**

Conforms to paragraph 21CFR173.25 of the Food Additives Regulations of the US FDA

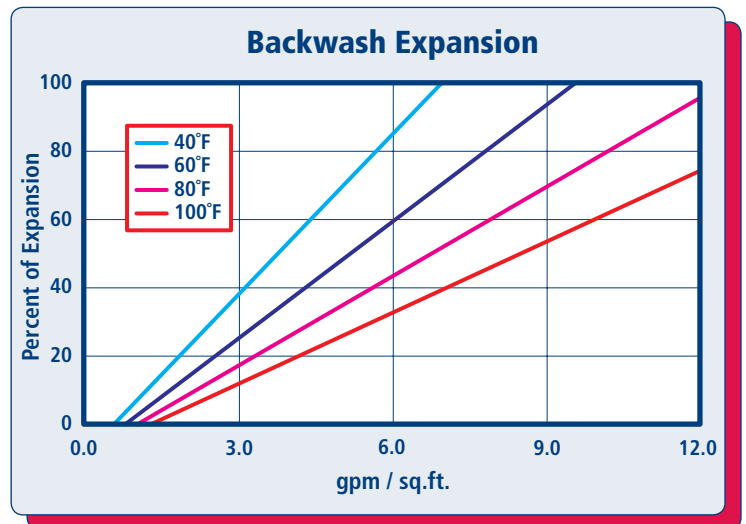
Prior to first use for potable water, resin should be backwashed for a minimum of 20 minutes, followed by 10 bed volumes of downflow rinse.

HYDRAULIC PROPERTIES



PRESSURE LOSS

The graph above shows the expected pressure loss of ResinTech CGS per foot of bed depth as a function of flow rate at various temperatures.



BACKWASH

The graph above shows the expansion characteristics of ResinTech CGS as a function of flow rate at various temperatures.

PHYSICAL PROPERTIES

Polymer Structure	Styrene/DVB
Polymer Type	Gel
Functional Group	Sulfonic Acid
Physical Form	Spherical beads
Ionic Form as shipped	Sodium
Total Capacity Sodium form	>1.8 meq/mL
Water Retention Sodium form	40 to 52 percent
Approximate Shipping Weight Sodium form	50 lbs./cu.ft.
Screen Size Distribution (U.S. mesh)	16 to 50
Maximum Fines Content (<50 mesh)	1 percent
Minimum Sphericity	90 percent
Uniformity Coefficient	1.6 approx.
Resin Color	Amber

Note: Physical properties can be certified on a per lot basis, available upon request

SUGGESTED OPERATING CONDITIONS

Maximum continuous temperature Sodium form	250°F
Minimum bed depth	24 inches
Backwash expansion	25 to 50 percent
Maximum pressure loss	25 psi
Operating pH range	0 to 14 SU
Regenerant Concentration Salt cycle	10 to 15 percent NaCl
Regenerant level	4 to 15 lbs./cu.ft.
Regenerant flow rate.	0.5 to 1.5 gpm/cu.ft.
Regenerant contact time	>20 minutes
Displacement flow rate	Same as dilution water
Displacement volume	10 to 15 gallons/cu.ft.
Rinse flow rate	Same as service flow
Rinse volume	35 to 60 gallons/cu.ft.
Service flow rate	1 to 10 gpm/cu.ft.

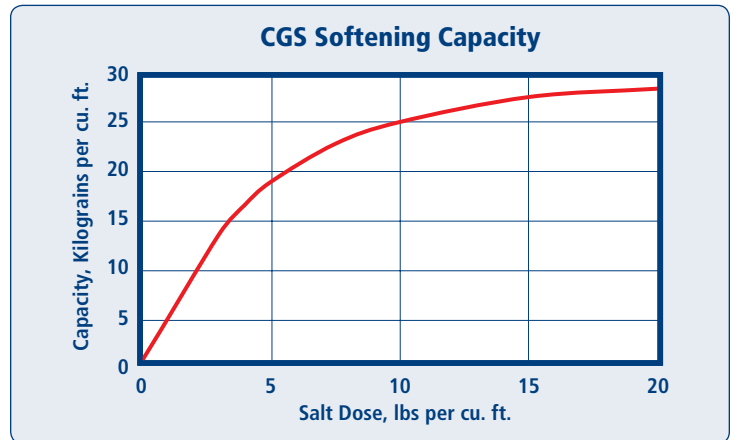
Note: These guidelines describe average low risk operating conditions. They are not intended to be absolute minimums or maximums.

For operation outside these guidelines, contact ResinTech Technical Support

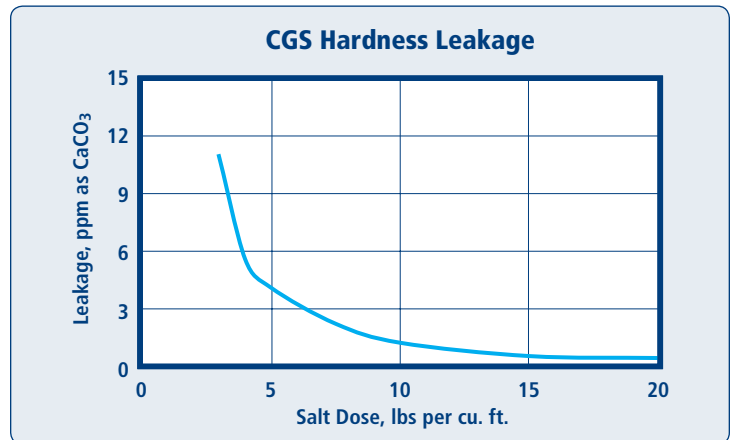
APPLICATIONS

SOFTENING

RESINTECH CGS is a standard crosslinked cation resin optimized for residential and commercial applications. This type of resin is easier to regenerate than the higher crosslinked resins. CGS has marginal resistance to chlorine and other oxidants and is not ideal for high temperature and other high stress applications.



Capacity and leakage data are based on the following: 2:1 Ca:Mg ratio, 500 ppm TDS as CaCO₃, 0.2% hardness in the salt and 10% brine concentration applied co-currently through the resin over 30 minutes. No engineering downgrade has been applied.



East Coast - West Berlin, NJ p:856.768.9600 • Midwest - Chicago, IL p:708.777.1167 • West Coast - Los Angeles, CA p:323.262.1600

CAUTION: DO NOT MIX ION EXCHANGE RESIN WITH STRONG OXIDIZING AGENTS. Nitric acid and other strong oxidizing agents can cause explosive reactions when mixed with organic materials, such as ion exchange resins. MATERIAL SAFETY DATA SHEETS (MSDS) are available for all ResinTech Inc. products. To obtain a copy, contact your local ResinTech sales representative or our corporate headquarters. They contain important health and safety information. That information may be needed to protect your employees and customers from any known health and safety hazards associated with our products. We recommend that you secure and study the pertinent MSDS for our products and any other products being used. These suggestions and data are based on information we believe to be reliable. They are offered in good faith. However we do not make any guarantee or warranty. We caution against using these products in an unsafe manner or in violation of any patents; further we assume no liability for the consequences of any such actions.

RESINTECH is a registered trademark © of RESINTECH INC.

CGS rev 1.1



SBG1

**ANION EXCHANGE RESIN
TYPE ONE GEL
CI OR OH FORM**

RESINTECH SBG1 is a high capacity, shock resistant, gelular, Type 1, strongly basic anion exchange resin supplied in the chloride or hydroxide form as moist, tough, uniform, spherical beads. *RESINTECH SBG1* is intended for use in all types of deionization systems and chemical processing applications. It is similar to *RESINTECH SBG1P* but has a higher volumetric capacity and exhibits lower TOC leach rates. This makes it the better performer in single use applications such as in cartridge deionization and when high levels of regeneration are used such as in polishing mixed beds. On the other hand, *RESINTECH SBG1P* is more resistant to organic fouling and gives higher operating capacities at low regeneration levels such as those used in make up demineralizers.

FEATURES & BENEFITS

- **COMPLIES WITH FDA REGULATIONS FOR POTABLE WATER APPLICATIONS.**

Conforms to paragraph 21CFR173.125 of the Food Additives Regulations of the F.D.A.*

- **HIGH TOTAL CAPACITY**

Provides longer run lengths in single use applications or where high levels of regeneration are used such as in mixed bed polishers, cartridge demineralizers.

- **UNIFORM PARTICLE SIZE**

16 to plus 50 mesh range; gives a LOWER PRESSURE DROP while maintaining SUPERIOR KINETICS.

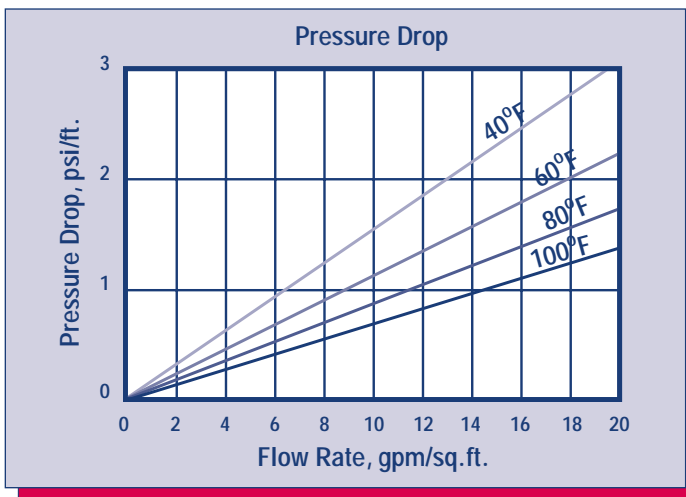
- **SUPERIOR PHYSICAL STABILITY**

- **LOWER TOC LEACH RATE**

Makes it ideal for polishing mixed beds in wafer washing and other high purity water polishing applications.

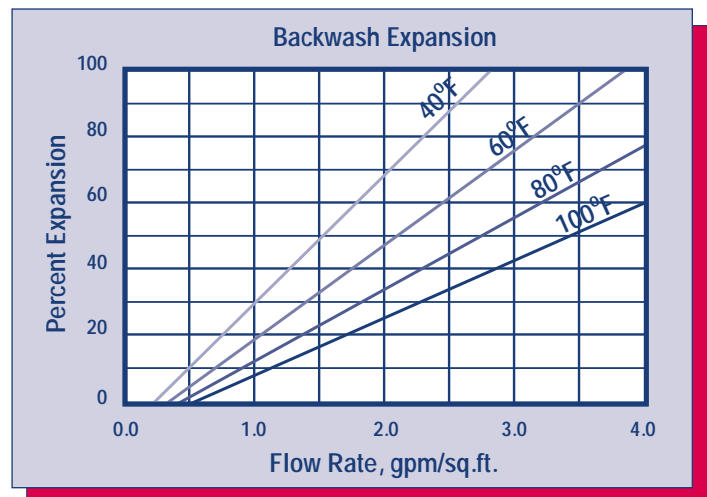
*For potable water applications, the resin must be properly pre-treated, usually by multiple exhaustion and regeneration cycles, to ensure compliance with extractable levels.

HYDRAULIC PROPERTIES



PRESSURE DROP

The graph above shows the expected pressure loss per foot of bed depth as a function of flow rate, at various temperatures.



BACKWASH

After each cycle the resin bed should be backwashed at a rate that expands the bed 50 to 75 percent. This will remove any foreign matter and reclassify the bed. The graph above shows the expansion characteristics of *RESINTECH SBG1* in the sodium form.

RESINTECH® SBG1

PHYSICAL PROPERTIES

Polymer Structure	Styrene Crosslinked with DVB
Functional Group	R-N-(CH ₃) ₃ ⁺ Cl ⁻
Ionic Form, as shipped	Chloride or Hydroxide
Physical Form	Tough, Spherical Beads
Screen Size Distribution	16 to 50
+16 mesh (U.S. Std)	< 5 percent
-50 mesh (U.S. Std)	< 1 percent
pH Range	0 to 14
Sphericity	> 93 percent
Uniformity Coefficient	Approx. 1.6
Water Retention	
Chloride Form	43 to 50 percent
Hydroxide Form	Approx. 53 to 60 percent
Solubility	Insoluble
Approximate Shipping Weight	
Cl Form	44 lbs/cu.ft.
OH Form	41 lbs/cu.ft.
Swelling Cl- to OH-	18 to 25 percent
Total Capacity	
Cl Form	1.45 meq/ml min
OH Form	1.15 meq/ml min

SUGGESTED OPERATING CONDITIONS

Maximum Continuous Temperature	
Hydroxide Form	140°F
alt Form	170°F
Minimum Bed Depth	24 inches
Backwash Rate	50 to 75 percent Bed Expansion
Regenerant Concentration*	2 to 6 percent
Regenerant Flow Rate	0.25 to 1.0 gpm/cu.ft.
Regenerant Contact Time	At least 40 Minutes
Regenerant Level	4 to 10 pounds/cu.ft.
Displacement Rinse Rate	Same as Regenerant Flow Rate
Displacement Rinse Volume	10 to 15 gals/cu.ft.
Fast Rinse Rate	Same as Service Flow Rate
Fast Rinse Volume	35 to 60 gals/cu.ft.
Service Flow Rates	
Polishing Mixed Beds	3 to 15 gpm/cu.ft.
Non-Polishing Apps.	2 to 4 gpm/cu.ft.

OPERATING CAPACITY

The operating capacity of *RESINTECH SBG1* for a variety of acids at various regeneration levels when treating an influent with a concentration 500 ppm, expressed as CaCO₃ is shown in the following table:

Pounds NaOH/ft ³	Capacity Kilograms per cubic foot			
	HCl	H ₂ SO ₄	H ₂ SiO ₃	H ₂ CO ₃
4	11.3	14.0	14.7	18.6
6	12.8	16.3	17.3	19.8
8	14.3	13.3	19.5	21.6
10	15.5	20.0	22.2	22.2

APPLICATIONS

DEMINEERALIZATION – *RESINTECH SBG1* is highly recommended for use in mixed bed demineralizers, wherever complete ion removal; superior physical and osmotic stability and low TOC leachables are required such as in wafer fabrication and other ultrapure applications.

RESINTECH SBG1 has high total capacity and low swelling on regeneration and provides maximum operating capacity in cartridge deionization applications. It is ideal for single use applications such as precious metal recovery, radwaste disposal and purification of toxic waste streams.

Highly crosslinked Type 1, styrenic anion exchangers have greater thermal and oxidation resistance than other types of strong base resins. They can be operated and regenerated at higher temperatures. The combination of lower porosity, high total capacity and Type 1 functionality make *RESINTECH SBG1* the resin of choice when water temperatures exceed 85°F and where the combination of carbon dioxide, borate and silica exceed 40% of the total anions.

RESINTECH SBG1P and *RESINTECH SBG1* are quite similar; the difference between them is the degree of porosity. *RESINTECH SBG1P* has greater porosity that gives it faster kinetics, and greater ability to reversibly sorb slow moving ions such as Naturally occurring Organic Matter (NOM). At lower regeneration levels and where chlorides make up a substantial portion of the anion load, or where the removal and elution of naturally occurring organics is of concern *RESINTECH SBG1P*, SBACR or SBG2 should be considered. At the higher regeneration levels used in mixed bed polishers *RESINTECH SBG1* provides higher capacity, and the lowest possible TOC leach rates.

***CAUTION:DO NOT MIX ION EXCHANGE RESIN WITH STRONG OXIDIZING AGENTS.** Nitric acid and other strong oxidizing agents can cause explosive reactions when mixed with organic materials,such as ion exchange resins.

Material Safety Data Sheets (MSDS) are available for all ResinTech Inc.products.To obtain a copy,contact your local ResinTech sales representative or our corporate headquarters. They contain important health and safety information.That information may be needed to protect your employees and customers from any known health and safety hazards associated with our products.We recommend that you secure and study the pertinent MSDS for our products and any other products being used These suggestions and data are based on information we believe to be reliable.They are offered in good faith.However we do not make any guarantee or warranty. We caution against using these products in an unsafe manner or in violation of any patents;further we assume no liability for the consequences of any such actions.

RESINTECH is a registered trademark ® of RESINTECH INC.

SBG1serv050102

GROOVED & SMOOTH-END FLOWMETER MODEL MG/MS100

SPECIFICATIONS

PERFORMANCE

ACCURACY/REPEATABILITY: ±2% of reading guaranteed throughout full range. ±1% over reduced range. Repeatability 0.25% or better.

RANGE: (see dimensions chart below)

HEAD LOSS: (see dimensions chart below)

MAXIMUM TEMPERATURE: (Standard Construction)
160°F constant

PRESSURE RATING: 150 psi

MATERIALS

TUBE: Epoxy-coated carbon steel.

BEARING ASSEMBLY: Impeller shaft is 316 stainless steel. Ball bearings are 440C stainless steel.

MAGNETS: (Permanent type) Cast or sintered alnico

BEARING HOUSING: Brass; Stainless Steel optional

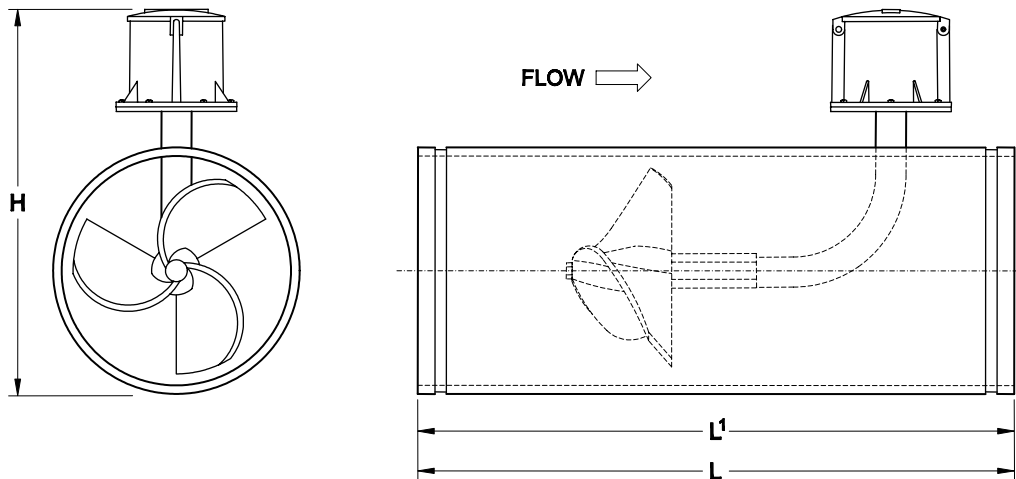
IMPELLER: Impellers are manufactured of high-impact plastic, retaining their shape and accuracy over the life of the meter. High temperature impeller is optional.

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

COATING: Fusion-bonded epoxy

OPTIONS

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



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

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

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

Larger flowmeters on special order.

Safety Data Sheets
(SDS)



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

SAFETY DATA SHEET

Revision Date: 11/11

1.1 IDENTIFICATION OF PRODUCT.

Designation: - Activated carbon

1.2 COMPANY.

Lockwood Remediation Technologies, LLC Phone: 774-450-7177
 89 Crawford Street Fax: 888-835-0617
 Leominster, MA 01453

2 HAZARDOUS AND OTHER INGREDIENTS.

Exposure limits may vary. It is recommended that information about locally applicable exposure limits be obtained.

%w/w Compound mg/m ³	CAS No	MAK mg/m ³ (Germany)	TLV mg/m ³ (ACGIH)	PEL
100 mg/m ³	7440-44-0		2 mg/m ³	15
		T Dust	T dust	

3 PHYSICAL DATA.

State: Solid
 Appearance: Black granule, extradite, or powder
 pH: Not applicable
 Boiling point or range: Sublimes
 Melting point or range: 3550 C (6422 F)
 Vapor pressure: 1 @3586 C (6487 F)
 Vapor density: 0.4
 Density relative to water: 1.5 – 1.8 Specific gravity
 Solubility in water: Insoluble in water
 Partition coefficient:
 (n-octanol/water):
 Other data: odorless

4 FIRE AND EXPLOSION HAZARD DATA.

Fire, explosion and reactivity hazards:	Flammable.
Flammability and flammability limits:	Flammable.
Autoflammability:	Not applicable.
Explosive properties:	Non explosive.
Oxidizing properties:	Non oxidizing.

Fire fighting measures:

As with most organic solids, fire is possible at elevated temperatures or by contact with an ignition source.

Explosion:

Fine dust dispersed in air in sufficient concentrations, and in the presence of an ignition source is a potential dust explosion hazard. Minimum explosible concentration 0.140 g/l.

Fire Extinguishing Media:

Water or water spray.

Unusual Fire and Explosion Hazards:

Contact with strong oxidize such as ozone, liquid oxygen, chlorine, permanganate, etc., may result in fire.

Special Information:

In the event of a fire, wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full facepiece operated in the pressure demand or other positive pressure mode.

5 STABILITY AND REACTIVITY DATA.

The product is stable under normal handling and storage conditions.

Conditions to avoid:	Incompatibilities.
Materials to avoid:	Liquid air and oxidizing materials. Strong oxidizers such as ozone, liquid oxygen, chlorine, permanganate, etc
Hazardous decomposition products: and carbon monoxide.	Involvement in a fire causes formation of carbon dioxide

Emergency Overview

WARNING! FLAMMABLE SOLID. ACTIVATED CARBON AFFECTS THE RESPIRATORY AND CARDIOVASCULAR SYSTEMS.

CAUTION!!! Wet activated carbon removes oxygen from air causing a severe hazard to workers inside carbon vessels and enclosed or confined spaces. Before entering such an area, sampling and work procedures for low oxygen levels should be taken to ensure ample oxygen availability, observing all local, state, and federal regulations.

J.T. Baker SAF-T-DATA^(tm) Ratings (Provided here for your convenience)

Health Rating: 1 - Slight
Flammability Rating: 3 - Severe (Flammable)
Reactivity Rating: 1 - Slight
Contact Rating: 1 - Slight
Lab Protective Equip: GOGGLES; LAB COAT; CLASS B EXTINGUISHER
Storage Color Code: Orange (General Storage)

Potential Health Effects

Inhalation:

May cause mild irritation to the respiratory tract. The acute inhalation LC50 (Rat) is >64.4 mg/l (nominal concentration) for activated carbon.

Ingestion:

No adverse effects expected. May cause mild irritation to the gastrointestinal tract. The acute oral LD50 (Rat) is >10g/kg.

Skin Contact:

Not expected to be a health hazard from skin exposure. May cause mild irritation and redness. The primary skin irritation index (Rabbit) is 0.

Eye Contact:

No adverse effects expected. May cause mild irritation, possible reddening.

Chronic Exposure:

Prolonged inhalation of excessive dust may produce pulmonary disorders. The effects of long-term, low-level exposures to this product have not been determined. Safe handling of this material on a long-term basis should emphasize the avoidance of all effects from repetitive acute exposures.

Aggravation of Pre-existing Conditions:

No information found.

6. First Aid Measures

Inhalation:

Remove to fresh air. Get medical attention for any breathing difficulty.

Ingestion:

Give several glasses of water to drink to dilute. If large amounts were swallowed, seek medical attention.

Skin Contact:

Not expected to require first aid measures. Wash exposed area with soap and water. Seek medical attention if irritation develops.

Eye Contact:

Wash thoroughly with running water for at least 15 minutes. Seek medical attention if irritation develops.

7. Accidental Release Measures

Remove all sources of ignition. Ventilate area of leak or spill. Wear appropriate personal protective equipment as specified in Section 8. Spills: Clean up spills in a manner that does not disperse dust into the air. Use non-sparking tools and equipment. Reduce airborne dust and prevent scattering by moistening with water. Pick up spill for recovery or disposal and place in a closed container. Warning! Spent product may have absorbed hazardous materials.

8. Handling and Storage

Protect against physical damage. Store in a cool, dry well-ventilated location, away from any area where the fire hazard may be acute. Outside or detached storage is preferred. Separate from incompatibles. Containers should be bonded and grounded for transfers to avoid static sparks. Storage and use areas should be No Smoking areas. Use non-sparking type tools and equipment, including explosion proof ventilation. Containers of this material may be hazardous when empty since they retain product residues (dust, solids); observe all warnings and precautions listed for the product.

CAUTION!! Wet activated carbon removes oxygen from air causing a severe hazard to workers inside carbon vessels and enclosed or confined spaces. Before entering such an area, sampling and work procedures for low oxygen levels should be taken to ensure ample oxygen availability, observing all local, state, and federal or national regulations.

9. Exposure Controls/Personal Protection

Exposure Guidelines:

OSHA PEL*:

5mg/M3 (Respirable)

ACGIH TLV*:

10 mg/M3 (Total)

*PELs and TLVs are 8-hour TWAs unless otherwise noted.

Ventilation System:

A system of local and/or general exhaust is recommended to keep employee exposures below the Airborne Exposure Limits. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. Please refer to the ACGIH document, *Industrial Ventilation, A Manual of Recommended Practices*, most recent edition, for details.

Personal Respirators (NIOSH Approved):

For conditions of use where exposure to the dust or mist is apparent, a half-face dust/mist respirator may be worn. For emergencies or instances where the exposure levels are not known, use a full-face positive-pressure, air-supplied respirator. WARNING: Air-purifying respirators do not protect workers in oxygen-deficient atmospheres.

Skin Protection:

Wear protective gloves and clean body-covering clothing.

Eye Protection:

Use chemical safety goggles. Maintain eye wash fountain and quick-drench facilities in work area.

10. Toxicological Information

Investigated as a reproductive effector.

-----\Cancer Lists\-----			
Ingredient	---NTP Carcinogen---		IARC Category
	Known	Anticipated	
Activated Carbon (7440-44-0)	No	No	None

11. Ecological Information

Environmental Fate:

No information found.

Environmental Toxicity:

No information found.

12. Disposal Considerations

Whatever cannot be saved for recovery or recycling should be managed in an appropriate and approved waste disposal facility. Processing, use or contamination of this product may change the waste management options. State and local disposal regulations may differ from federal disposal regulations. Dispose of container and unused contents in accordance with federal, state and local requirements.

13. Transport Information**Proper Shipping Name:**

NOT REGULATED

Hazard Class:

N/A

Identification Number:

N/A

Packing Group:

N/A

This product has been tested according to the United Nations *Transport of Dangerous Goods* test protocol for spontaneously combustible materials. It has been specifically determined that this product does not meet the definition of a self heating substance or any hazard class, and therefore is not a hazardous material and not regulated.

14. Regulatory Information**SARA TITLE III:**

N/A

TSCA:

The ingredients of this product are on the TSCA Inventory List.

OSHA:

Nonhazardous according to definitions of health hazard and physical hazard provided in the Hazard Communication Standard (29 CFR 1910.1200)

CANADA**WHMIS CLASSIFICATION:**

Not Classified

DSL#:

6798

EEC

Council Directives relating to the classification, packaging, and labeling of dangerous substances and preparations.

Risk (R) and Safety (S) phrases:

May be irritating to eyes (R36).

15. Other Information

NFPA Ratings: Health: 0 Flammability: 1 Reactivity: 0

Label Hazard Warning:

WARNING! FLAMMABLE SOLID. ACTIVATED CARBON AFFECTS THE RESPIRATORY AND CARDIOVASCULAR SYSTEMS.

Label Precautions:

Keep away from heat, sparks and flame. Avoid contact with eyes, skin and clothing. Avoid breathing dust. Keep container closed. Use with adequate ventilation. Wash thoroughly after handling.

Label First Aid:

If inhaled, remove to fresh air. Get medical attention for any breathing difficulty.



Safety Data Sheet

Product Names: SBG1, SBG1-HP, SBG1-UPS, SBG1-C, SBG1-F, SBMP1, SBMP1-UPS, GP-SBA, SBG1P, SBG1P-UPS

(Type I Strong Base Anion Exchange Resin Chloride Form)

Effective date 31 March 2015

Section 1: Identification

- 1a Product Names ResinTech SBG1, SBG1-HP, SBG1-UPS, SBG1-C, SBG1-F, SBMP1, SBMP1-UPS, GP-SBA, SBG1P, SBG1P-UPS
- 1b Common Name Type I Strong base anion resin in the chloride form.
- 1c Intended use All general purpose anion exchanges for general use including salt form and demineralization.
- 1d Manufacturer Address ResinTech, Inc.
160 Cooper Road,
West Berlin, NJ 08091 USA
- Phone 856-768-9600
Email ixresin@resintech.com

Section 2: Hazard Identification

- 2a Hazard classification Not hazardous or dangerous

Product Hazard Rating	Scale
Health = 0	0 = Negligible
Fire = 1	1 = Slight
Reactivity = 0	2 = Moderate
Special – N/A	3 = High
	4 = Extreme

- 2b Product description White, yellow, or orange colored solid beads approximately 0.6 mm diameter with little or no odor.
- 2c Precautions for use Safety glasses and gloves recommended.
Slipping hazard if spilled.
- 2c Potential health effects Will cause eye irritation.
Will cause skin skin irritation.
Ingestion is not likely to pose a health risk.
- 2d Environmental effects This product may alter the pH of any water that contacts it.

Section 2A: Hazard classification UN OSHA globally harmonized system



WARNING

(contains ion exchange resin)

H320: Causes eye irritation

Precautionary Statements

P264: Wash hands thoroughly after handling.

P280: Wear protective gloves/protective clothing/eye protection/face protection

P305+351+338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do – continue rinsing.

P333+313: If skin irritation or a rash occurs: Get medical advice/attention.

P337+313: If eye irritation persists get medical advice/attention.

P403+233: Store in a well-ventilated place. Keep container tightly closed.

P411: Store at temperatures not exceeding 50 °C/ 122 °F.

Please refer to the safety data sheet for additional information regarding this product

ResinTech, Inc.
160 Cooper Road
West Berlin, NJ 08091-9234
856 768-9600
lxresin@resintech.com

Section 3: Composition/ Information on Ingredients

3a	Chemical name	Trimethylamine functionalized chloromethylated copolymer of polystyrene in the chloride form.
3b	Ingredients	
	Trimethylamine functionalized Chloromethylated copolymer of Styrene and divinylbenzene in the Chloride form	CAS# 60177-39-1 (35 - 65%)
	Water	CAS# 7732-18-5 (35 – 65%)

Section 4: First Aid Measures

4a	Inhalation	No adverse effects expected- normal use of product does not produce odors or vapors.
4b	Skin	Wash with soap and water- seek medical attention if a rash develops.
4c	Eye contact	Wash immediately with water- seek attention if discomfort continues.
4d	Ingestion	No adverse effects expected for small amounts, larger amounts can cause stomach irritation. Seek medical attention if discomfort occurs.

Section 5: Fire Fighting Measures

5a	Flammability	NFPA Fire rating = 1
5b	Extinguishing media	Water, CO2, foam, dry powder.
5c	Fire fighting Procedures	Follow general fire fighting procedures indicated in the work place. Seek medical attention if discomfort continues.
5d	Protective Equipment	MSHA/NIOSH approved self-contained breathing gear, full protective clothing.
5e	Combustion Products	Carbon oxides and other toxic gasses and vapors.
5f	Unusual Hazards	Product is not combustible until moisture is removed. Resin begins to burn at approximately 230° C. Auto ignition can occur above 500° C.

Section 6: Accidental Release Measures

- | | | |
|----|---------------------------|---|
| 6a | Personal Precautions | Keep people away, spilled resin can be a slipping hazard, wear gloves and safety glasses to minimize skin or eye contact. |
| 6b | Incompatible Chemicals | Strong oxidants can create risk of combustion products similar to burning, exposure to strong bases can cause a rapid temperature increase. |
| 6c | Environmental Precautions | Keep out of public sewers and waterways. |
| 6d | Containment Materials | Use plastic or paper containers, unlined metal containers not recommended. |
| 6e | Methods of Clean-up | Sweep up material and transfer to containers. |

Section 7: Handling and Storage

- | | | |
|----|---------------------|--|
| 7a | Handling | Avoid prolonged skin contact. Keep resin moist and avoid allowing resin to completely dry. |
| 7b | Storage | Store in a cool dry place (0° to 45° C) in the original shipping container. This product is thermally sensitive and will have reduced shelf life if subjected to extended periods of time at temperatures exceeding 50° C. Although freezing does not usually damage ion exchange resins, avoid repeated freeze thaw cycles. |
| 7c | TSCA considerations | Ion exchange resins should be listed on the TSCA Inventory in compliance with State and Federal Regulations. |

Section 8: Exposure Controls/Personal Protection

- | | | |
|----|------------------------------|---|
| 8a | OSHA exposure limits | None noted. |
| 8b | Engineering Controls | Provide adequate ventilation. |
| 8c | Personal Protection Measures | |
| | Eye Protection | Safety glasses or goggles. |
| | Respiratory Protection | Not required for normal use. |
| | Protective Gloves | Not required for limited exposure but recommended for extended contact. |

Section 9: Physical and Chemical Properties

Appearance	Amber, yellow, or red beads approx. 0.6 mm diameter.
Flammability or explosive limits	Flammable above 500° C
Odor	Little or no odor
Physical State	Solid
Vapor pressure	Not available
Odor threshold	Not available
Vapor density	Not available
pH	Near neutral (6 to 8 typical)
Relative density	Approx 710 grams/Liter
Melting point/freezing point	Does not melt, freezes at approx. 0 C
Solubility	Insoluble in water and most solvents
Boiling point	Does not boil
Flash point	Approx 500° C
Evaporation rate	Does not evaporate
Partition Coefficient (n-octanol/water)	Not applicable
Auto-ignition temperature	Approx 500° C
Decomposition temperature	Above 230° C
Viscosity	Not applicable

Section 10: Stability and Reactivity

10a Stability	Stable under normal conditions.
10b Conditions to Avoid	Heat, exposure to strong oxidants.
10c Hazardous by-products	Trimethylamine, charred polystyrene, aromatic acids and hydrocarbons, organic amines, nitrogen oxides, carbon oxides, chlorinated hydrocarbons.
10d Incompatible materials	Strong oxidizing agents, e.g. nitric acid (such as HNO ₃)
10e Hazardous Polymerization	Does not occur

Section 11: Toxicological Information

11a	Likely Routes of Exposure	Oral, skin or eye contact.
11b	Effects of exposure	
	Delayed	None known.
	Immediate (acute)	None known.
	Chronic	None known.
11c	Toxicity Measures	
	Skin Adsorption	Unlikely, some transfer of acidity is possible.
	Ingestion	Oral toxicity believed to be low but no LD50 has been established.
	Inhalation	Unknown, vapors are very unlikely due to physical properties (insoluble solid).
11d	Toxicity Symptoms	
	Skin Adsorption	Mild Rash.
	Ingestion	Indigestion or general malaise.
	Inhalation	Unknown.
11e	Carcinogenicity	None known

Section 12: Ecological information

12a	Eco toxicity	Not acutely harmful to plant or animal life.
12b	Mobility	Insoluble, acidity or causticity may escape if wet.
12c	Biodegradability	Not biodegradable.
12d	Bioaccumulation	Insignificant.
12e	Other adverse effects	Not Harmful to the environment.

Section 13: Disposal Considerations

13a	General considerations	Material is non-hazardous. However, unused material can cause a pH change when wetted.
13b	Disposal Containers	Most plastic and paper containers are suitable. Avoid use of unlined metal containers.
13c	Disposal methods	No specific method necessary.
13d	Sewage Disposal	Not recommended.

13e Precautions for incineration	May release trimethylamine and toxic vapors when burned.
13f Precautions for landfills	Resins used to remove hazardous materials may then become hazardous mixtures

Section 14: Transportation Information

14a Transportation Class	Not classified as a dangerous good for transport by land, sea, or air.
14b TDG	Not regulated.
14c IATA	Not regulated.
14d DOT (49 CFR 172.101)	Not Regulated.

Section 15: Regulatory Information

15a CERCLA	Not regulated
15b SARA Title III	Not regulated
15c Clean Air act	Not regulated
15d Clean Water Act	Not regulated
15e TSCA	Not regulated
15f Canadian Regulations WHMIS TDG	Not a controlled product Not regulated
15g Mexican Regulations	Not Dangerous

Section 16: Other Information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features. Regulatory requirements are subject to change and may differ from one location to another. It is the buyer's responsibility to ensure that their activities comply with federal, state, and local laws.

16a Date of Revision 31 March 2015



Safety Data Sheet

Product Names: CGS, CGS-BL, CG8, CG8-BL, CG8-C, CG8-F, CG8-UPS, CG8-HP, CG8-NS, CG10, CG10-BL, CG10-UPS, CG10-HP, SACMP, SACMP-UPS

(Cation Exchange Resin in the Sodium Form)

Effective date 31 March 2015

Section 1: Identification

1a Product Names	ResinTech CGS, CGS-BL, CG8, CG8-BL, CG8-C, CG8-F, CG8-UPS, CG8-HP, CG8-NS, CG10, CG10-BL, CG10-UPS, CG10-HP, SACMP, SACMP-UPS
1b Common Name	Cation exchange resin in the sodium form.
1c Intended use	All general purpose cation exchange for general use including water softening and demineralization.
1d Manufacturer Address	ResinTech, Inc. 160 Cooper Road, West Berlin, NJ 08091 USA
Phone	856-768-9600
Email	ixresin@resintech.com

Section 2: Hazard Identification

2a OSHA Hazard classification Not hazardous or dangerous

Product Hazard Rating	Scale
Health = 0	0 = Negligible
Fire = 1	1 = Slight
Reactivity = 0	2 = Moderate
Special – N/A	3 = High
	4 = Extreme

2b Product description	Amber, tan or black colored solid beads with little or no odor.
2c Precautions for use	Safety glasses and gloves recommended. Slipping hazard if spilled.
2c Potential health effects	Will cause eye irritation. Ingestion is not likely to pose a health risk.
2d Environmental effects	Little or none.



Warning (contains ion exchange resin)

H320: Causes eye irritation (Category 2B)

Precautionary Statements

P264: Wash hands thoroughly after handling.

P280: Wear protective gloves/protective clothing/eye protection/face protection

P305+351+338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do – continue rinsing.

P333+313: If skin irritation or a rash occurs: Get medical advice/attention.

P337+313: If eye irritation persists get medical advice/attention.

P403+233: Store in a well-ventilated place. Keep container tightly closed.

P411: Store at temperatures not exceeding 50 °C/ 122 °F.

Please refer to the safety data sheet for additional information regarding this product

ResinTech, Inc.
160 Cooper Road
West Berlin, NJ 08091-9234
856 768-9600
lxresin@resintech.com

Section 3: Composition/ Information on Ingredients

3a	Chemical name	Polystyrene sulfonate in the sodium form
3b	Ingredients	
	Polystyrene sulfonate in the sodium form	CAS# 69011-22-9 (40 - 60%)
	Water	CAS# 7732-18-5 (40 – 60%)

Section 4: First Aid Measures

4a	Inhalation	No adverse effects expected- normal use of product does not produce odors or vapors.
4b	Skin	Wash with soap and water- seek medical attention if a rash develops.
4c	Eye contact	Wash immediately with water- seek attention if discomfort continues.
4d	Ingestion	No adverse effects expected for small amounts, larger amounts can cause stomach irritation. Seek medical attention if discomfort occurs.

Section 5: Fire Fighting Measures

5a	Flammability	NFPA Fire rating = 1
5b	Extinguishing media	Water, CO2, foam, dry powder
5c	Fire fighting Procedures	Follow general fire fighting procedures indicated in the work place.
5d	Protective Equipment	MSHA/NIOSH approved self-contained breathing gear, full protective clothing.
5e	Combustion Products	Carbon oxides and other toxic gasses and vapors.
5f	Unusual Hazards	Product is not combustible until moisture is removed. Resin begins to burn at approximately 230° C. Auto ignition can occur above 500° C.

Section 6: Accidental Release Measures

- | | | |
|----|---------------------------|---|
| 6a | Personal Precautions | Keep people away, spilled resin can be a slipping hazard, wear gloves and safety glasses to minimize skin or eye contact. |
| 6b | Incompatible Chemicals | Strong oxidants can create risk of combustion products similar to burning. |
| 6c | Environmental Precautions | Keep out of public sewers and waterways. |
| 6d | Containment Materials | Use plastic, paper, or metal containers. |
| 6e | Methods of Clean-up | Sweep up material and transfer to containers. |

Section 7: Handling and Storage

- | | | |
|----|---------------------|--|
| 7a | Handling | Avoid prolonged skin contact. Avoid contact with salts or with salty water to prevent premature exhaustion of the resin. Keep resin moist and avoid allowing resin to completely dry. |
| 7b | Storage | Store in a cool dry place (0° to 45° C) in the original shipping container. This product is thermally sensitive and will have reduced shelf life if subjected to extended periods of time at temperatures exceeding 50° C. Although freezing does not usually damage ion exchange resins, avoid repeated freeze thaw cycles. |
| 7c | TSCA considerations | Ion exchange resins should be listed on the TSCA Inventory in compliance with State and Federal Regulations. |

Section 8: Exposure Controls/Personal Protection

- | | | |
|----|------------------------------|-----------------------------------|
| 8a | OSHA exposure limits | None noted. |
| 8b | Engineering Controls | Provide adequate ventilation. |
| 8c | Personal Protection Measures | |
| | Eye Protection | Safety glasses or goggles. |
| | Respiratory Protection | Not required for normal use. |
| | Protective Gloves | Recommended for extended contact. |

Section 9: Physical and Chemical Properties

Appearance	Amber, tan, or black beads.
Flammability or explosive limits	Flammable above 500° C
Odor	None
Physical State	Solid
Vapor pressure	Not available
Odor threshold	Not available
Vapor density	Not available
pH	Near neutral (6 to 8 typical)
Relative density	Approx 800 grams/Liter
Melting point/freezing point	Does not melt, freezes at approx. 0 C
Solubility	Insoluble in water and most solvents
Boiling point	Does not boil
Flash point	Approx 500° C
Evaporation rate	Does not evaporate
Partition Coefficient (n-octanol/water)	Not applicable
Auto-ignition temperature	Approx 500° C
Decomposition temperature	Above 230° C
Viscosity	Not applicable

Section 10: Stability and Reactivity

10a Stability	Stable under normal conditions.
10b Conditions to Avoid	Heat, exposure to strong oxidants.
10c Hazardous by-products	Organic sulfonates, charred polystyrene, aromatic acids and hydrocarbons, organic amines, nitrogen oxides, carbon oxides, chlorinated hydrocarbons.
10d Incompatible materials	Strong oxidizing agents (such as HNO ₃)
10e Hazardous Polymerization	Does not occur

Section 11: Toxicological Information

11a	Likely Routes of Exposure	Oral, skin or eye contact.
11b	Effects of exposure	
	Delayed	None known.
	Immediate (acute)	None known.
	Chronic	None known.
11c	Toxicity Measures	
	Skin Adsorption	Unlikely.
	Ingestion	Oral toxicity believed to be low but no LD50 has been established.
	Inhalation	Unknown, vapors are very unlikely due to physical properties (insoluble solid).
11d	Toxicity Symptoms	
	Skin Adsorption	Mild rash.
	Ingestion	Indigestion or general malaise.
	Inhalation	Unknown.
11e	Carcinogenicity	None known

Section 12: Ecological information

12a	Eco toxicity	Not harmful to plant or animal life.
12b	Mobility	Insoluble.
12c	Biodegradability	Not biodegradable.
12d	Bioaccumulation	Insignificant.
12e	Other adverse effects	Not Harmful to the environment.

Section 13: Disposal Considerations

13a	General considerations	Material is non-hazardous.
13b	Disposal Containers	Most plastic and paper containers are suitable.
13c	Disposal methods	No specific method necessary
13d	Sewage Disposal	Not recommended
13e	Precautions for incineration	May release toxic vapors when burned
13f	Precautions for landfills	Resins used to remove hazardous materials may then become hazardous mixtures.

Section 14: Transportation Information

14a	Transportation Class	Not classified as a dangerous good for transport by land, sea, or air.
14b	TDG	Not regulated.
14c	IATA	Not regulated.
14d	DOT (49 CFR 172.101)	Not Regulated.

Section 15: Regulatory Information

15a	CERCLA	Not regulated
15b	SARA Title III	Not regulated
15c	Clean Air act	Not regulated
15d	Clean Water Act	Not regulated
15e	TSCA	Not regulated
15f	Canadian Regulations WHMIS TDG	Not a controlled product Not regulated
15g	Mexican Regulations	Not Dangerous

Section 16: Other Information

The information provided in this safety data sheet is presented in good faith and believed to be accurate as of the effective date shown above. However, no warranty or guarantee of accuracy, express or implied is given. Regulatory requirements are subject to change and may differ from one location to another. It is the buyer's responsibility to ensure that their activities comply with federal, state, and local laws.

16a Date of Revision 31 March 2015

SECTION 1: IDENTIFICATION

Product Identifier

Product Form: Mixture

Product Name: Sulfuric Acid, 70-100%

Formula: H₂-O₄-S

Intended Use of the Product

Use Of The Substance/Mixture: Industrial use.

Name, Address, and Telephone of the Responsible Party

Manufacturer

CHEMTRADE LOGISTICS INC.

155 Gordon Baker Road

Suite 300

Toronto, Ontario M2H 3N5

For SDS Info: (416) 496-5856

www.chemtradelogistics.com

Emergency Telephone Number

Emergency Number :

Canada: CANUTEC +1-613-996-6666 / US: CHEMTREC +1-800-424-9300

INTERNATIONAL: +1-703-741-5970

Chemtrade Emergency Contact: (866) 416-4404

For Chemical Emergency, Spill, Leak, Fire, Exposure, or Accident, call CHEMTREC – Day or Night

SECTION 2: HAZARDS IDENTIFICATION

Classification of the Substance or Mixture

GHS Classification

Met. Corr. 1 H290

Skin Corr. 1A H314

Eye Dam. 1 H318

Carc. 1A H350

Aquatic Acute 3 H402

Full text of hazard classes and H-statements : see section 16

Label Elements

GHS Labeling

Hazard Pictograms



Signal Word

: Danger

Hazard Statements

: H290 - May be corrosive to metals.
 H314 - Causes severe skin burns and eye damage.
 H318 - Causes serious eye damage.
 H350 - May cause cancer (Inhalation).
 H402 - Harmful to aquatic life.

Precautionary Statements

: P201 - Obtain special instructions before use.
 P202 - Do not handle until all safety precautions have been read and understood.
 P234 - Keep only in original container.
 P260 - Do not breathe vapors, mist, or spray.
 P264 - Wash hands, forearms, and other exposed areas thoroughly after handling.
 P273 - Avoid release to the environment.
 P280 - Wear protective gloves, protective clothing, and eye protection.
 P301+P330+P331 - IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

Sulfuric Acid, 70-100%

Safety Data Sheet

According to U.S. Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules And Regulations and according to Canada's Hazardous Products Regulation, February 11, 2015.

P303+P361+P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water.
P304+P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308+P313 - If exposed or concerned: Get medical advice/attention.
P310 - Immediately call a POISON CENTER or doctor.
P321 - Specific treatment (see section 4 on this SDS).
P363 - Wash contaminated clothing before reuse.
P390 - Absorb spillage to prevent material damage.
P405 - Store locked up.
P406 - Store in corrosive resistant container with a resistant inner liner.
P501 - Dispose of contents/container in accordance with local, regional, national, territorial, provincial, and international regulations.

Other Hazards

Exposure may aggravate pre-existing eye, skin, or respiratory conditions.

Unknown acute toxicity

No data available

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Mixture

Name	Product Identifier	%*	GHS Ingredient Classification
Sulfuric acid**	(CAS-No.) 7664-93-9	70 - 100	Met. Corr. 1, H290 Skin Corr. 1A, H314 Eye Dam. 1, H318 Carc. 1A, H350 Aquatic Acute 3, H402
Water	(CAS-No.) 7732-18-5	0.1 - 30	Not classified

Full text of H-phrases: see section 16

*Percentages are listed in weight by weight percentage (w/w%) for liquid and solid ingredients. Gas ingredients are listed in volume by volume percentage (v/v%).

**Strong inorganic acid aerosols/mists containing this substance are carcinogenic to humans via inhalation. Under normal conditions of use this route of exposure is not expected.

SECTION 4: FIRST AID MEASURES

Description of First-aid Measures

General: Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).

Inhalation: When symptoms occur: go into open air and ventilate suspected area. Obtain medical attention if breathing difficulty persists.

Skin Contact: Remove contaminated clothing. Immediately flush skin with plenty of water for at least 30 minutes. Get immediate medical advice/attention. Wash contaminated clothing before reuse.

Eye Contact: Rinse cautiously with water for at least 30 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get immediate medical advice/attention.

Ingestion: Rinse mouth. Do NOT induce vomiting. Obtain medical attention.

Most Important Symptoms and Effects Both Acute and Delayed

General: Corrosive to eyes, respiratory system and skin. May cause cancer.

Inhalation: May be corrosive to the respiratory tract.

Skin Contact: Causes severe irritation which will progress to chemical burns.

Eye Contact: Causes permanent damage to the cornea, iris, or conjunctiva.

Ingestion: May cause burns or irritation of the linings of the mouth, throat, and gastrointestinal tract.

Sulfuric Acid, 70-100%

Safety Data Sheet

According to U.S. Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules And Regulations and according to Canada's Hazardous Products Regulation, February 11, 2015.

Chronic Symptoms: Strong inorganic acid mists containing sulfuric acid are carcinogenic to humans. Prolonged inhalation of fumes or mists may cause erosion of the teeth.

Indication of Any Immediate Medical Attention and Special Treatment Needed

If exposed or concerned, get medical advice and attention. If medical advice is needed, have product container or label at hand.

SECTION 5: FIRE-FIGHTING MEASURES

Extinguishing Media

Suitable Extinguishing Media: Foam, carbon dioxide, dry chemical.

Unsuitable Extinguishing Media: Do not use water. Do not get water inside containers. Do not apply water stream directly at source of leak.

Special Hazards Arising From the Substance or Mixture

Fire Hazard: Not flammable.

Explosion Hazard: Product is not explosive.

Reactivity: May be corrosive to metals. Contact with metals may evolve flammable hydrogen gas. May react exothermically with water releasing heat. Adding an acid to a base or base to an acid may cause a violent reaction. This product may act as an oxidizer.

Advice for Firefighters

Precautionary Measures Fire: Exercise caution when fighting any chemical fire.

Firefighting Instructions: Use water spray or fog for cooling exposed containers.

Protection During Firefighting: Do not enter fire area without proper protective equipment, including respiratory protection.

Hazardous Combustion Products: Toxic fumes are released.

Other Information: Do not allow run-off from fire fighting to enter drains or water courses.

Reference to Other Sections

Refer to Section 9 for flammability properties.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment and Emergency Procedures

General Measures: Do not get in eyes, on skin, or on clothing. Do not breathe vapor, mist or spray. Do not handle until all safety precautions have been read and understood.

For Non-Emergency Personnel

Protective Equipment: Use appropriate personal protective equipment (PPE).

Emergency Procedures: Evacuate unnecessary personnel.

For Emergency Personnel

Protective Equipment: Equip cleanup crew with proper protection.

Emergency Procedures: Upon arrival at the scene, a first responder is expected to recognize the presence of dangerous goods, protect oneself and the public, secure the area, and call for the assistance of trained personnel as soon as conditions permit. Ventilate area.

Environmental Precautions

Prevent entry to sewers and public waters. Avoid release to the environment.

Methods and Materials for Containment and Cleaning Up

For Containment: Contain any spills with dikes or absorbents to prevent migration and entry into sewers or streams. As an immediate precautionary measure, isolate spill or leak area in all directions.

Methods for Cleaning Up: Clean up spills immediately and dispose of waste safely. Absorb spillage to prevent material damage. Cautiously neutralize spilled liquid. Transfer spilled material to a suitable container for disposal. Contact competent authorities after a spill.

Reference to Other Sections

See Section 8 for exposure controls and personal protection and Section 13 for disposal considerations.

SECTION 7: HANDLING AND STORAGE

Precautions for Safe Handling

Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Handle empty containers with care because they may still present a hazard. Do not get in eyes, on skin, or on clothing. Do not breathe vapors, mist, spray. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood.

Additional Hazards When Processed: May be corrosive to metals. May release corrosive vapors. NEVER pour water into this substance; when dissolving or diluting always add it slowly to the water.

Sulfuric Acid, 70-100%

Safety Data Sheet

According to U.S. Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules And Regulations and according to Canada's Hazardous Products Regulation, February 11, 2015.

Hygiene Measures: Handle in accordance with good industrial hygiene and safety procedures.

Conditions for Safe Storage, Including Any Incompatibilities

Technical Measures: Comply with applicable regulations.

Storage Conditions: Keep container closed when not in use. Store in a dry, cool place. Keep/Store away from extremely high or low temperatures and incompatible materials. Store in original container or corrosive resistant and/or lined container.

Incompatible Materials: Combustible materials. Reducing agents. Strong oxidizers. Strong bases. Metals. Water.

Specific End Use(s)

Industrial use.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Control Parameters

For substances listed in section 3 that are not listed here, there are no established Exposure limits from the manufacturer, supplier, importer, or the appropriate advisory agency including: ACGIH (TLV), AIHA (WEEL), NIOSH (REL), OSHA (PEL), Canadian provincial governments, or the Mexican government.

Sulfuric acid (7664-93-9)		
Mexico	OEL TWA (mg/m ³)	1 mg/m ³
USA ACGIH	ACGIH TWA (mg/m ³)	0.2 mg/m ³ (thoracic particulate matter)
USA ACGIH	ACGIH chemical category	Suspected Human Carcinogen contained in strong inorganic acid mists
USA OSHA	OSHA PEL (TWA) (mg/m ³)	1 mg/m ³
USA NIOSH	NIOSH REL (TWA) (mg/m ³)	1 mg/m ³
USA IDLH	US IDLH (mg/m ³)	15 mg/m ³
Alberta	OEL STEL (mg/m ³)	3 mg/m ³
Alberta	OEL TWA (mg/m ³)	1 mg/m ³
British Columbia	OEL TWA (mg/m ³)	0.2 mg/m ³ (Thoracic, contained in strong inorganic acid mists)
Manitoba	OEL TWA (mg/m ³)	0.2 mg/m ³ (thoracic particulate matter)
New Brunswick	OEL STEL (mg/m ³)	3 mg/m ³
New Brunswick	OEL TWA (mg/m ³)	1 mg/m ³
Newfoundland & Labrador	OEL TWA (mg/m ³)	0.2 mg/m ³ (thoracic particulate matter)
Nova Scotia	OEL TWA (mg/m ³)	0.2 mg/m ³ (thoracic particulate matter)
Nunavut	OEL STEL (mg/m ³)	0.6 mg/m ³ (thoracic fraction)
Nunavut	OEL TWA (mg/m ³)	0.2 mg/m ³ (thoracic fraction)
Northwest Territories	OEL STEL (mg/m ³)	0.6 mg/m ³ (thoracic fraction, strong acid mists only)
Northwest Territories	OEL TWA (mg/m ³)	0.2 mg/m ³ (thoracic fraction, strong acid mists only)
Ontario	OEL TWA (mg/m ³)	0.2 mg/m ³ (thoracic)
Prince Edward Island	OEL TWA (mg/m ³)	0.2 mg/m ³ (thoracic particulate matter)
Québec	VECD (mg/m ³)	3 mg/m ³
Québec	VEMP (mg/m ³)	1 mg/m ³
Saskatchewan	OEL STEL (mg/m ³)	0.6 mg/m ³ (thoracic fraction)
Saskatchewan	OEL TWA (mg/m ³)	0.2 mg/m ³ (thoracic fraction)
Yukon	OEL STEL (mg/m ³)	1 mg/m ³
Yukon	OEL TWA (mg/m ³)	1 mg/m ³

Exposure Controls

Appropriate Engineering Controls: Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure. Ensure adequate ventilation, especially in confined areas. Ensure all national/local regulations are observed.

Personal Protective Equipment: Gloves. Protective clothing. Protective goggles. Face shield. Insufficient ventilation: wear respiratory protection.



Sulfuric Acid, 70-100%

Safety Data Sheet

According to U.S. Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules And Regulations and according to Canada's Hazardous Products Regulation, February 11, 2015.

Materials for Protective Clothing: Acid-resistant clothing.

Hand Protection: Wear protective gloves.

Eye Protection: Chemical safety goggles and face shield.

Skin and Body Protection: Wear suitable protective clothing.

Respiratory Protection: If exposure limits are exceeded or irritation is experienced, approved respiratory protection should be worn. In case of inadequate ventilation, oxygen deficient atmosphere, or where exposure levels are not known wear approved respiratory protection.

Other Information: When using, do not eat, drink or smoke.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Information on Basic Physical and Chemical Properties

Physical State	: Liquid
Appearance	: Clear, Colorless to Amber, Oily
Odor	: Pungent
Odor Threshold	: Not available
pH	: 0.3
Evaporation Rate	: Not available
Melting Point	: 10.56 °C (51.01 °F)
Freezing Point	: Not available
Boiling Point	: 290 °C (554 °F)
Flash Point	: Not applicable
Auto-ignition Temperature	: Not applicable
Decomposition Temperature	: Not available
Flammability (solid, gas)	: Not applicable
Lower Flammable Limit	: Not applicable
Upper Flammable Limit	: Not applicable
Vapor Pressure	: 0.00027 - 0.16 kPa at 25 °C (77 °F)
Relative Vapor Density at 20°C	: 3.4 (air = 1)
Relative Density	: Not available
Specific Gravity	: 1.84 g/l
Solubility	: Water: Miscible
Partition Coefficient: N-Octanol/Water	: Not available
Viscosity	: Not available

SECTION 10: STABILITY AND REACTIVITY

Reactivity: May be corrosive to metals. Contact with metals may evolve flammable hydrogen gas. May react exothermically with water releasing heat. Adding an acid to a base or base to an acid may cause a violent reaction. This product may act as an oxidizer.

Chemical Stability: Stable under recommended handling and storage conditions (see section 7).

Possibility of Hazardous Reactions: Hazardous polymerization will not occur.

Conditions to Avoid: Extremely high or low temperatures and incompatible materials.

Incompatible Materials: Combustible materials. Reducing agents. Strong bases. Strong oxidizers. Metals. Water.

Hazardous Decomposition Products: Thermal decomposition generates: Corrosive vapors.

SECTION 11: TOXICOLOGICAL INFORMATION

Information on Toxicological Effects - Product

Acute Toxicity (Oral): Not classified

Acute Toxicity (Dermal): Not classified

Acute Toxicity (Inhalation): Not classified

LD50 and LC50 Data: Not available

Skin Corrosion/Irritation: Causes severe skin burns and eye damage.

pH: 0.3

Eye Damage/Irritation: Causes serious eye damage.

Sulfuric Acid, 70-100%

Safety Data Sheet

According to U.S. Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules And Regulations and according to Canada's Hazardous Products Regulation, February 11, 2015.

pH: 0.3

Respiratory or Skin Sensitization: Not classified

Germ Cell Mutagenicity: Not classified

Carcinogenicity: May cause cancer (Inhalation).

Specific Target Organ Toxicity (Repeated Exposure): Not classified

Reproductive Toxicity: Not classified

Specific Target Organ Toxicity (Single Exposure): Not classified

Aspiration Hazard: Not classified

Symptoms/Effects After Inhalation: May be corrosive to the respiratory tract.

Symptoms/Effects After Skin Contact: Causes severe irritation which will progress to chemical burns.

Symptoms/Effects After Eye Contact: Causes permanent damage to the cornea, iris, or conjunctiva.

Symptoms/Effects After Ingestion: May cause burns or irritation of the linings of the mouth, throat, and gastrointestinal tract.

Chronic Symptoms: Strong inorganic acid mists containing sulfuric acid are carcinogenic to humans. Prolonged inhalation of fumes or mists may cause erosion of the teeth.

Information on Toxicological Effects - Ingredient(s)

LD50 and LC50 Data:

Water (7732-18-5)	
LD50 Oral Rat	> 90000 mg/kg
Sulfuric acid (7664-93-9)	
LD50 Oral Rat	2140 mg/kg
LC50 Inhalation Rat	510 mg/m ³ (Exposure time: 2 h)
Sulfuric acid (7664-93-9)	
IARC Group	1
OSHA Hazard Communication Carcinogen List	In OSHA Hazard Communication Carcinogen list.
Strong inorganic acid mists containing sulfuric acid	
National Toxicology Program (NTP) Status	Known Human Carcinogens.

SECTION 12: ECOLOGICAL INFORMATION

Toxicity

Ecology - General: Harmful to aquatic life.

Sulfuric acid (7664-93-9)	
LC50 Fish 1	500 mg/l (Exposure time: 96 h - Species: Brachydanio rerio [static])
LC50 Fish 2	42 mg/l (Exposure time: 96 h - Species: Gambusia affinis [static])

Persistence and Degradability

Sulfuric Acid, 70-100%	
Persistence and Degradability	Not established.

Bioaccumulative Potential

Sulfuric Acid, 70-100%	
Bioaccumulative Potential	Not established.
Sulfuric acid (7664-93-9)	
BCF Fish 1	(no bioaccumulation)

Mobility in Soil Not available

Other Adverse Effects

Other Information: Avoid release to the environment.

SECTION 13: DISPOSAL CONSIDERATIONS

Waste Disposal Recommendations: Dispose of contents/container in accordance with local, regional, national, territorial, provincial, and international regulations.

Additional Information: Container may remain hazardous when empty. Continue to observe all precautions.

Ecology - Waste Materials: Avoid release to the environment. This material is hazardous to the aquatic environment. Keep out of sewers and waterways.





Sulfuric Acid, 70-100%

Safety Data Sheet

According to U.S. Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules And Regulations and according to Canada's Hazardous Products Regulation, February 11, 2015.

SECTION 14: TRANSPORT INFORMATION

The shipping description(s) stated herein were prepared in accordance with certain assumptions at the time the SDS was authored, and can vary based on a number of variables that may or may not have been known at the time the SDS was issued.

TRANSPORTATION CLASSIFICATION	DOT	TDG	IMDG	IATA
Identification Number	UN1830	UN1830	UN1830	UN1830
Proper Shipping Name	SULFURIC ACID	SULFURIC ACID	SULPHURIC ACID	SULPHURIC ACID
Transport Hazard Class(es)	8	8	8	8
				
Packing Group	II	II	II	II
Environmental Hazards	Marine Pollutant : No	Marine Pollutant : No	Marine Pollutant : No	Marine Pollutant: N/A
Emergency Response	ERG Number : 137	ERAP Index: 3 000	EMS: F-A, S-B	ERG code (IATA): 8L
Additional Information	Not applicable	Not applicable	Not applicable	Not applicable

SECTION 15: REGULATORY INFORMATION

US Federal Regulations

Chemical Name (CAS No.)	CERCLA RQ	EPCRA 304 RQ	SARA 302 TPQ	SARA 313
Sulfuric acid (7664-93-9)	1000 lb	1000 lb	1000 lb	Yes

SARA 311/312

Sulfuric Acid, 70-100%
Immediate (acute) health hazard. Delayed (chronic) health hazard. Reactive hazard

US TSCA Flags Not present

US State Regulations

California Proposition 65

Chemical Name (CAS No.)	Carcinogenicity	Developmental Toxicity	Female Reproductive Toxicity	Male Reproductive Toxicity
Sulfuric acid (7664-93-9)	Yes	No	No	No
Strong inorganic acid mists containing sulfuric acid	Yes	No	No	No

State Right-To-Know Lists

Sulfuric acid (7664-93-9)
U.S. - Massachusetts - Right To Know List - Yes
U.S. - New Jersey - Right to Know Hazardous Substance List - Yes
U.S. - Pennsylvania - RTK (Right to Know) - Environmental Hazard List - Yes
U.S. - Pennsylvania - RTK (Right to Know) - Special Hazardous Substances - No
U.S. - Pennsylvania - RTK (Right to Know) List - Yes

Canadian Regulations

Sulfuric acid (7664-93-9)
Listed on the Canadian DSL (Domestic Substances List)
Not listed on the Canadian NDSL (Non-Domestic Substances List)

International Inventories/Lists

Chemical Name (CAS No.)	Australia AICS	Turkey CICR	Korea ECL	EU EINECS	EU ELINCS	EU SVHC	EU NLP	Mexico INSQ
Sulfuric acid (7664-93-9)	Yes	No	Yes	Yes	No	No	No	No

Sulfuric Acid, 70-100%

Safety Data Sheet

According to U.S. Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules And Regulations and according to Canada's Hazardous Products Regulation, February 11, 2015.

Chemical Name (CAS No.)	China IECSC	Japan ENCS	Japan ISHL	Japan PDSCCL	Japan PRTR	Philippines PICCS	New Zealand NZIOC	US TSCA
Sulfuric acid (7664-93-9)	Yes	Yes	No	Yes	No	Yes	Yes	Yes

SECTION 16: OTHER INFORMATION, INCLUDING DATE OF PREPARATION OR LAST REVISION

Date of Preparation or Latest Revision : 05/07/2018

Revision Summary

Section	Change	Date Changed
16	Data modified	05/07/2018

Other Information : This document has been prepared in accordance with the SDS requirements of the OSHA Hazard Communication Standard 29 CFR 1910.1200 and Canada's Hazardous Products Regulations (HPR).

GHS Full Text Phrases:

Aquatic Acute 3	Hazardous to the aquatic environment - Acute Hazard Category 3
Carc. 1A	Carcinogenicity Category 1A
Eye Dam. 1	Serious eye damage/eye irritation Category 1
Met. Corr. 1	Corrosive to metals Category 1
Skin Corr. 1A	Skin corrosion/irritation Category 1A
H290	May be corrosive to metals
H314	Causes severe skin burns and eye damage
H318	Causes serious eye damage
H350	May cause cancer
H402	Harmful to aquatic life

NFPA 704

NFPA Health Hazard : 3
 NFPA Fire Hazard : 0
 NFPA Reactivity Hazard : 2
 NFPA Specific Hazards : W



HMIS Rating

Health : 3
 Flammability : 0
 Physical : 2
 PPE See Section 8

Abbreviations and Acronyms

AICS – Australian Inventory of Chemical Substances
 ACGIH – American Conference of Governmental Industrial Hygienists
 AIHA – American Industrial Hygiene Association
 ATE - Acute Toxicity Estimate
 BCF - Bioconcentration factor
 BEI - Biological Exposure Indices (BEI)
 CAS No. - Chemical Abstracts Service number
 CERCLA RQ - Comprehensive Environmental Response, Compensation, and Liability Act - Reportable Quantity
 CICR - Turkish Inventory and Control of Chemicals
 DOT – 49 CFR – US Department of Transportation – Code of Federal Regulations Title 49 – Transportation.
 EC50 - Median effective concentration
 ECL - Korea Existing Chemicals List
 EINECS - European Inventory of Existing Commercial Chemical Substances
 ELINCS - European List of Notified Chemical Substances
 EmS - IMDG Emergency Schedule Fire & Spillage
 ENCS - Japanese Existing and New Chemical Substances Inventory

LC50 - Median Lethal Concentration
 LD50 - Median Lethal Dose
 LOAEL - Lowest Observed Adverse Effect Level
 LOEC - Lowest-observed-effect Concentration
 Log Pow - Octanol/water Partition Coefficient
 NFPA 704 – National Fire Protection Association - Standard System for the Identification of the Hazards of Materials for Emergency Response
 NIOSH - National Institute for Occupational Safety and Health
 NLP - Europe No Longer Polymers List
 NOAEL - No-Observed Adverse Effect Level
 NOEC - No-Observed Effect Concentration
 NZIOC - New Zealand Inventory of Chemicals
 OEL - Occupational Exposure Limits
 OSHA – Occupational Safety and Health Administration
 PEL - Permissible Exposure Limits
 PICCS - Philippine Inventory of Chemicals and Chemical Substances
 PDSCCL - Japan Poisonous and Deleterious Substances Control Law
 PPE – Personal Protective Equipment

Sulfuric Acid, 70-100%

Safety Data Sheet

According to U.S. Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules And Regulations and according to Canada's Hazardous Products Regulation, February 11, 2015.

EPA – Environmental Protection Agency	PRTR - Japan Pollutant Release and Transfer Register
EPCRA 304 RQ – EPCRA 304 Extremely Hazardous Substance Emergency	REL - Recommended Exposure Limit
Planning and Community Right-to-Know-Act – Reportable Quantity	SADT - Self Accelerating Decomposition Temperature
ERAP Index – Emergency Response Assistance Plan Quantity Limit	SARA - Superfund Amendments and Reauthorization Act
ErC50 - EC50 in Terms of Reduction Growth Rate	SARA 302 - Section 302, 40 CFR Part 355
ERG code (IATA) - Emergency Response Drill Code as found in the International Civil Aviation Organization (ICAO)	SARA 311/312 - Sections 311 and 312, 40 CFR Part 370 Hazard Categories
ERG No. - Emergency Response Guide Number	SARA 313 - Section 313, 40 CFR Part 372
HCCL - Hazard Communication Carcinogen List	SRCL - Specifically Regulated Carcinogen List
HMIS – Hazardous Materials Information System	STEL - Short Term Exposure Limit
IARC - International Agency for Research on Cancer	SVHC – European Candidate List of Substance of Very High Concern
IATA - International Air Transport Association – Dangerous Goods Regulations	TDG – Transport Canada Transport of Dangerous Goods Regulations
IDLH - Immediately Dangerous to Life or Health	TLM - Median Tolerance Limit
IECSC - Inventory of Existing Chemical Substances Produced or Imported in China	TLV - Threshold Limit Value
IMDG - International Maritime Dangerous Goods Code	TPQ - Threshold Planning Quantity
INSQ - Mexican National Inventory of Chemical Substances	TSCA – United States Toxic Substances Control Act
ISHL - Japan Industrial Safety and Health Law	TWA - Time Weighted Average
	WEEL - Workplace Environmental Exposure Levels

Handle product with due care and avoid unnecessary contact. This information is supplied under U.S. OSHA'S "Right to Know" (29 CFR 1910.1200) and Canada's WHMIS regulations. Although certain hazards are described herein, we cannot guarantee these are the only hazards that exist. The information contained herein is based on data available to us and is believed to be true and accurate but it is not offered as a product specification. No warranty, expressed or implied, regarding the accuracy of this data, the hazards connected with the use of the product, or the results to be obtained from the use thereof, is made and Chemtrade and its affiliates assume no responsibility. Chemtrade is a member of the CIAC (Chemistry Industry Association of Canada) and adheres to the codes and principles of Responsible Care™.



Chemtrade NA GHS SDS 2015

**ATTACHMENT D:
STREAM STATS**

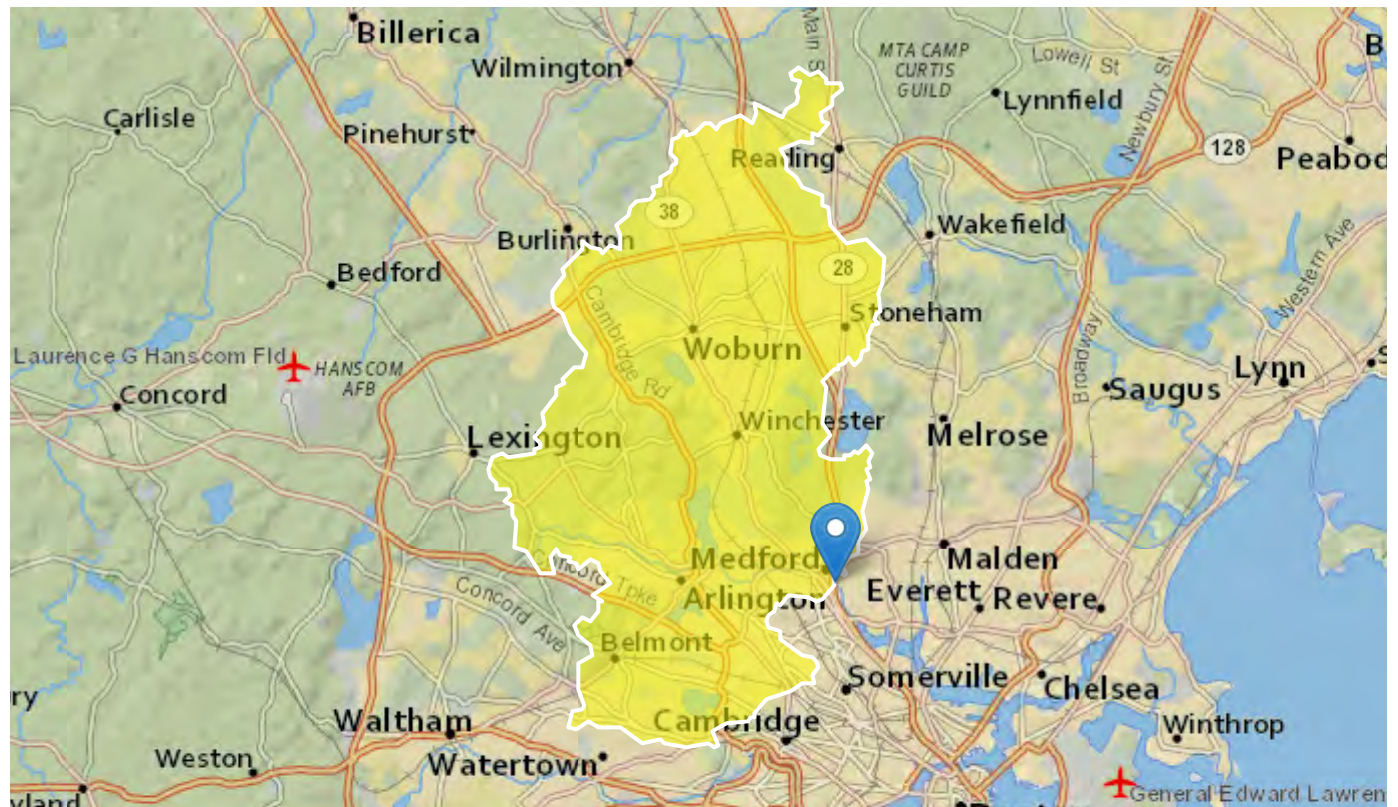
StreamStats Report

Region ID: MA

Workspace ID: MA20191017184817794000

Clicked Point (Latitude, Longitude): 42.41478, -71.10328

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Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
ACRSDFT	Area underlain by stratified drift	21.6	square miles
BSLDEM10M	Mean basin slope computed from 10 m DEM	5.966	percent
BSLDEM250	Mean basin slope computed from 1:250K DEM	2.429	percent
CENTROIDX	Basin centroid horizontal (x) location in state plane coordinates	228913.4	meters
CENTROIDY	Basin centroid vertical (y) location in state plane units	911495.1	meters

Parameter Code	Parameter Description	Value	Unit
CRSDFT	Percentage of area of coarse-grained stratified drift	44.76	percent
DRFTPERSTR	Area of stratified drift per unit of stream length	0.26	square mile per mile
DRNAREA	Area that drains to a point on a stream	48.2	square miles
ELEV	Mean Basin Elevation	115	feet
FOREST	Percentage of area covered by forest	11.77	percent
LAKEAREA	Percentage of Lakes and Ponds	3.78	percent
LC06STOR	Percentage of water bodies and wetlands determined from the NLCD 2006	5.24	percent
LC11DEV	Percentage of developed (urban) land from NLCD 2011 classes 21-24	80.9	percent
LC11IMP	Average percentage of impervious area determined from NLCD 2011 impervious dataset	44.6	percent
MAREGION	Region of Massachusetts 0 for Eastern 1 for Western	0	dimensionless
MAXTEMPC	Mean annual maximum air temperature over basin area, in degrees Centigrade	15	feet per mi
OUTLETX	Basin outlet horizontal (x) location in state plane coordinates	232655	feet
OUTLETY	Basin outlet vertical (y) location in state plane coordinates	907215	feet
PCTSNDGRV	Percentage of land surface underlain by sand and gravel deposits	44.76	percent
PRECPRI00	Basin average mean annual precipitation for 1971 to 2000 from PRISM	47.7	inches
STRMTOT	total length of all mapped streams (1:24,000-scale) in the basin	84.9	miles
WETLAND	Percentage of Wetlands	3.68	percent

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

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
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Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	48.2	square miles	1.61	149
BSLDEM250	Mean Basin Slope from 250K DEM	2.429	percent	0.32	24.6
DRFTPERSTR	Stratified Drift per Stream Length	0.26	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	7.31	ft ³ /s	2.2	23.4	49.5	49.5
7 Day 10 Year Low Flow	3.52	ft ³ /s	0.867	13.3	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.

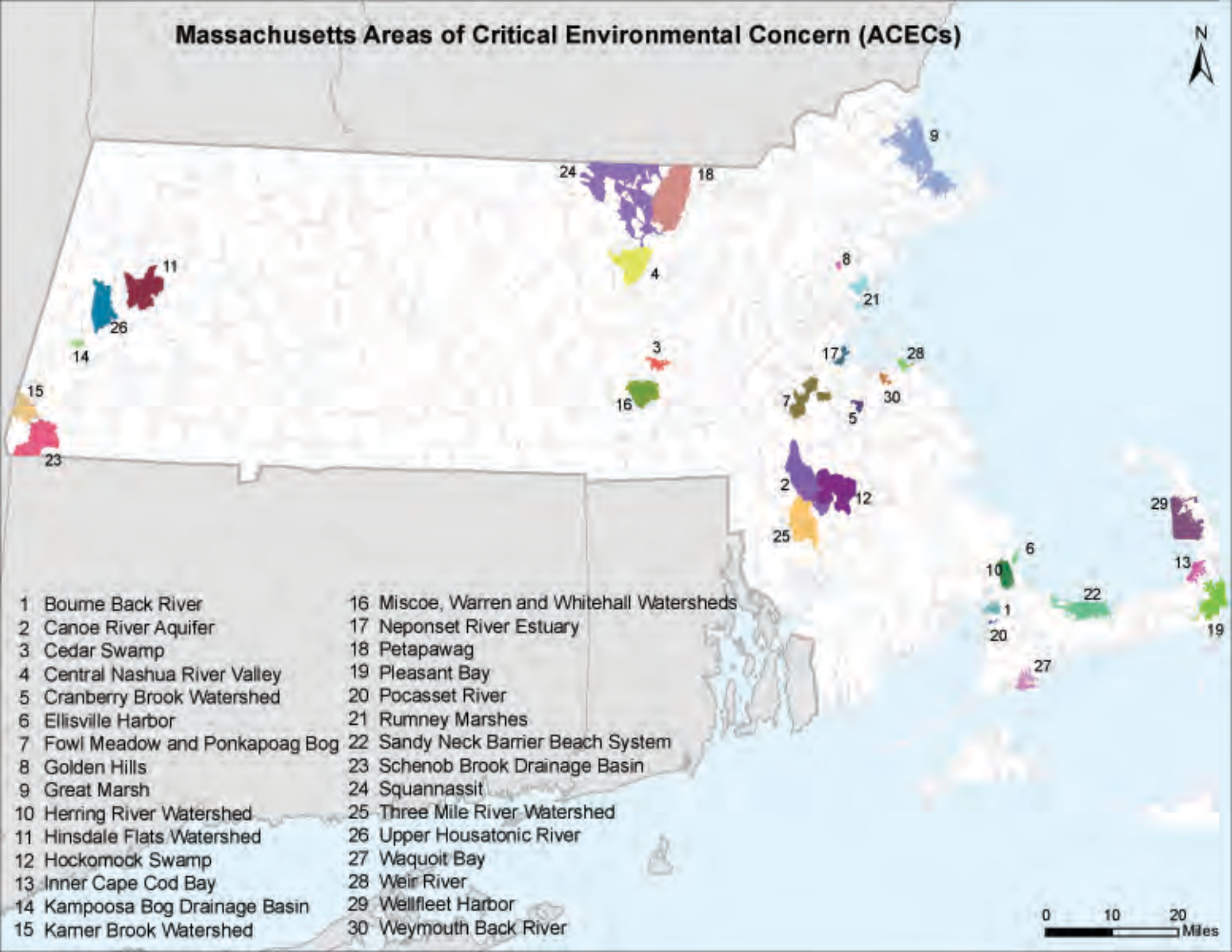
USGS Software Disclaimer: This software has been approved for release by the U.S. Geological Survey (USGS). Although the software has been subjected to rigorous review, the USGS reserves the right to update the software as needed pursuant to further analysis and review. No warranty, expressed or implied, is made by the USGS or the U.S. Government as to the functionality of the software and related material nor shall the fact of release constitute any such warranty. Furthermore, the software is released on condition that neither the USGS nor the U.S. Government shall be held liable for any damages resulting from its authorized or unauthorized use.

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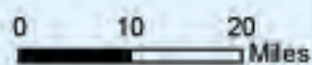
Application Version: 4.3.8

**ATTACHMENT E:
AREAS OF CRITICAL ENVIRONMENTAL CONCERN
DOCUMENTATION**

Massachusetts Areas of Critical Environmental Concern (ACECs)



- | | |
|---------------------------------|--|
| 1 Bourns Back River | 16 Miscoe, Warren and Whitehall Watersheds |
| 2 Canoe River Aquifer | 17 Neponset River Estuary |
| 3 Cedar Swamp | 18 Petapawag |
| 4 Central Nashua River Valley | 19 Pleasant Bay |
| 5 Cranberry Brook Watershed | 20 Pocasset River |
| 6 Ellisville Harbor | 21 Rummey Marshes |
| 7 Fowl Meadow and Ponkapoag Bog | 22 Sandy Neck Barrier Beach System |
| 8 Golden Hills | 23 Schenob Brook Drainage Basin |
| 9 Great Marsh | 24 Squannassit |
| 10 Herring River Watershed | 25 Three Mile River Watershed |
| 11 Hinsdale Flats Watershed | 26 Upper Housatonic River |
| 12 Hockomock Swamp | 27 Waquoit Bay |
| 13 Inner Cape Cod Bay | 28 Weir River |
| 14 Kamposoa Bog Drainage Basin | 29 Wellfleet Harbor |
| 15 Kamer Brook Watershed | 30 Weymouth Back River |



MASSACHUSETTS AREAS OF CRITICAL ENVIRONMENTAL CONCERN

November 2010

Total Approximate Acreage: 268,000 acres

Approximate acreage and designation date follow ACEC names below.

Bourne Back River

(1,850 acres, 1989) Bourne

Canoe River Aquifer and Associated Areas (17,200 acres, 1991) Easton, Foxborough, Mansfield, Norton, Sharon, and Taunton

Cedar Swamp

(1,650 acres, 1975) Hopkinton and Westborough

Central Nashua River Valley

(12,900 acres, 1996) Bolton, Harvard, Lancaster, and Leominster

Cranberry Brook Watershed

(1,050 acres, 1983) Braintree and Holbrook

Ellisville Harbor

(600 acres, 1980) Plymouth

Fowl Meadow and Ponkapoag Bog

(8,350 acres, 1992) Boston, Canton, Dedham, Milton, Norwood, Randolph, Sharon, and Westwood

Golden Hills

(500 acres, 1987) Melrose, Saugus, and Wakefield

Great Marsh (originally designated as Parker River/Essex Bay)

(25,500 acres, 1979) Essex, Gloucester, Ipswich, Newbury, and Rowley

Herring River Watershed

(4,450 acres, 1991) Bourne and Plymouth

Hinsdale Flats Watershed

(14,500 acres, 1992) Dalton, Hinsdale, Peru, and Washington

Hockomock Swamp

(16,950 acres, 1990) Bridgewater, Easton, Norton, Raynham, Taunton, and West Bridgewater

Inner Cape Cod Bay

(2,600 acres, 1985) Brewster, Eastham, and Orleans

Kampoosa Bog Drainage Basin

(1,350 acres, 1995) Lee and Stockbridge

Karner Brook Watershed

(7,000 acres, 1992) Egremont and Mount Washington

Miscoe, Warren, and Whitehall Watersheds

(8,700 acres, 2000) Grafton, Hopkinton, and Upton

Neponset River Estuary

(1,300 acres, 1995) Boston, Milton, and Quincy

Petapawag

(25,680 acres, 2002) Ayer, Dunstable, Groton, Pepperell, and Tyngsborough

Pleasant Bay

(9,240 acres, 1987) Brewster, Chatham, Harwich, and Orleans

Pocasset River

(160 acres, 1980) Bourne

Rumney Marshes

(2,800 acres, 1988) Boston, Lynn, Revere, Saugus, and Winthrop

Sandy Neck Barrier Beach System

(9,130 acres, 1978) Barnstable and Sandwich

Schenob Brook Drainage Basin

(13,750 acres, 1990) Mount Washington and Sheffield

Squannassit

(37,420 acres, 2002) Ashby, Ayer, Groton, Harvard, Lancaster, Lunenburg, Pepperell, Shirley, and Townsend

Three Mile River Watershed

(14,280 acres, 2008) Dighton, Norton, Taunton

Upper Housatonic River

(12,280 acres, 2009) Lee, Lenox, Pittsfield, Washington

Waquoit Bay

(2,580 acres, 1979) Falmouth and Mashpee

Weir River

(950 acres, 1986) Cohasset, Hingham, and Hull

Wellfleet Harbor

(12,480 acres, 1989) Eastham, Truro, and Wellfleet

Weymouth Back River

(800 acres, 1982) Hingham and Weymouth

Towns with ACECs within their Boundaries
November 2010

TOWN	ACEC	TOWN	ACEC
Ashby	Squannassit	Mt. Washington	Karner Brook Watershed
Ayer	Petapawag		Schenob Brook
	Squannassit	Newbury	Great Marsh
Barnstable	Sandy Neck Barrier Beach System	Norton	Hockomock Swamp
Bolton	Central Nashua River Valley		Canoe River Aquifer
Boston	Rumney Marshes		Three Mile River Watershed
	Fowl Meadow and Ponkapoag Bog	Norwood	Fowl Meadow and Ponkapoag Bog
	Neponset River Estuary	Orleans	Inner Cape Cod Bay
Bourne	Pocasset River		Pleasant Bay
	Bourne Back River	Pepperell	Petapawag
	Herring River Watershed		Squannassit
Braintree	Cranberry Brook Watershed	Peru	Hinsdale Flats Watershed
Brewster	Pleasant Bay	Pittsfield	Upper Housatonic River
	Inner Cape Cod Bay	Plymouth	Herring River Watershed
Bridgewater	Hockomock Swamp		Ellisville Harbor
Canton	Fowl Meadow and Ponkapoag Bog	Quincy	Neponset River Estuary
Chatham	Pleasant Bay	Randolph	Fowl Meadow and Ponkapoag Bog
Cohasset	Weir River	Raynham	Hockomock Swamp
Dalton	Hinsdale Flats Watershed	Revere	Rumney Marshes
Dedham	Fowl Meadow and Ponkapoag Bog	Rowley	Great Marsh
Dighton	Three Mile River Watershed	Sandwich	Sandy Neck Barrier Beach System
Dunstable	Petapawag	Saugus	Rumney Marshes
Eastham	Inner Cape Cod Bay		Golden Hills
	Wellfleet Harbor	Sharon	Canoe River Aquifer
Easton	Canoe River Aquifer		Fowl Meadow and Ponkapoag Bog
	Hockomock Swamp	Sheffield	Schenob Brook
Egremont	Karner Brook Watershed	Shirley	Squannassit
Essex	Great Marsh	Stockbridge	Kampoosa Bog Drainage Basin
Falmouth	Waquoit Bay	Taunton	Hockomock Swamp
Foxborough	Canoe River Aquifer		Canoe River Aquifer
Gloucester	Great Marsh		Three Mile River Watershed
Grafton	Miscoe-Warren-Whitehall Watersheds	Truro	Wellfleet Harbor
		Townsend	Squannassit
Groton	Petapawag	Tyngsborough	Petapawag
	Squannassit	Upton	Miscoe-Warren-Whitehall Watersheds
Harvard	Central Nashua River Valley		
	Squannassit	Wakefield	Golden Hills
Harwich	Pleasant Bay	Washington	Hinsdale Flats Watershed
Hingham	Weir River		Upper Housatonic River
	Weymouth Back River	Wellfleet	Wellfleet Harbor
Hinsdale	Hinsdale Flats Watershed	W Bridgewater	Hockomock Swamp
Holbrook	Cranberry Brook Watershed	Westborough	Cedar Swamp
Hopkinton	Miscoe-Warren-Whitehall Watersheds	Westwood	Fowl Meadow and Ponkapoag Bog
		Weymouth	Weymouth Back River
	Cedar Swamp	Winthrop	Rumney Marshes
Hull	Weir River		
Ipswich	Great Marsh		
Lancaster	Central Nashua River Valley		
	Squannassit		
Lee	Kampoosa Bog Drainage Basin		
	Upper Housatonic River		
Lenox	Upper Housatonic River		
Leominster	Central Nashua River Valley		
Lunenburg	Squannassit		
Lynn	Rumney Marshes		
Mansfield	Canoe River Aquifer		
Mashpee	Waquoit Bay		
Melrose	Golden Hills		
Milton	Fowl Meadow and Ponkapoag Bog		
	Neponset River Estuary		

**ATTACHMENT F:
NATIONAL REGISTER OF HISTORIC PLACES AND
MASSACHUSETTS HISTORICAL COMMISSION
DOCUMENTATION**

Massachusetts Cultural Resource Information System

MACRIS

MACRIS Search Results

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

Inv. No.	Property Name	Street	Town	Year
SMV.A	Bow Street Historic District		Somerville	
SMV.B	Tufts, Nathan Park		Somerville	
SMV.C	Central Hill		Somerville	
SMV.D	Summit Avenue		Somerville	
SMV.E	Davis Square		Somerville	
SMV.F	Powder House - Winter Hill Industrial Area		Somerville	
SMV.G	Union Square Commercial District		Somerville	
SMV.H	Ward Two Industrial Area		Somerville	
SMV.I	Assembly Square		Somerville	
SMV.J	Teele Square		Somerville	
SMV.K	Ball Square		Somerville	
SMV.L	Magoun Square		Somerville	
SMV.M	Gilman Square		Somerville	
SMV.N	Campbell Park - Meacham Road Historic District		Somerville	
SMV.O	Brastow and Harvard Street Subdivision		Somerville	
SMV.P	Concord Square - Concord Avenue		Somerville	
SMV.Q	Homer Square		Somerville	
SMV.R	Houghton - Oak Streets Area		Somerville	
SMV.S	Jacques - Bond - Heath Streets Subdivision		Somerville	
SMV.T	Kent Court		Somerville	
SMV.U	Mount Benedict		Somerville	
SMV.V	Clyde - Murdock Brickworker's Neighborhood		Somerville	
SMV.W	Russell, William A. Subdivision		Somerville	
SMV.X	Somerville Avenue		Somerville	
SMV.Y	Thurston - Dartmouth - School Streets Area		Somerville	
SMV.Z	Wesley Park		Somerville	
SMV.AA	Garrison Streetscape		Somerville	

Inv. No.	Property Name	Street	Town	Year
SMV.AB	Partridge Street Area		Somerville	
SMV.AC	McGregor Street Area		Somerville	
SMV.AD	Highland Road Area		Somerville	
SMV.AE	Hall Street Area		Somerville	
SMV.AF	Bay State Avenue Area		Somerville	
SMV.AG	Fountain Avenue Area		Somerville	
SMV.AH	Florence Street Area		Somerville	
SMV.AI	Ellsworth Streetscape		Somerville	
SMV.AJ	Harrison Street Area		Somerville	
SMV.AK	Church Street Area		Somerville	
SMV.AL	Beacon Streetscape		Somerville	
SMV.AM	Powder House Boulevard Area		Somerville	
SMV.AN	Paulina Streetscape		Somerville	
SMV.AO	Ossippe Road Area		Somerville	
SMV.AP	Westwood Road Historic District		Somerville	
SMV.AQ	Spring Hill Historic District		Somerville	
SMV.AR	Mount Vernon Street Historic District		Somerville	
SMV.AS	Professor's Row		Somerville	
SMV.AT	Westwood Road Historic District		Somerville	
SMV.AU	Hollander Blocks		Somerville	
SMV.AV	Chester Street Historic District		Somerville	
SMV.AW	Columbus Avenue - Warren Avenue Historic District		Somerville	
SMV.AX	Pleasant Avenue Historic District		Somerville	
SMV.AY	Somerville Multiple Resource Area		Somerville	
SMV.AZ	Water Supply System of Metropolitan Boston		Somerville	
SMV.BA	Somerville Single Building Local Historic District		Somerville	
SMV.BB	Metropolitan Park System of Greater Boston		Somerville	
SMV.BC	Diners of Massachusetts		Somerville	
SMV.BD	Middlesex Canal Historic and Archaeological		Somerville	
SMV.BE	Middlesex Canal Historic and Archaeological		Somerville	
SMV.BF	Aldersey - Summit Historic District		Somerville	
SMV.BG	Alewife Brook Parkway		Somerville	
SMV.BH	Immaculate Conception Roman Catholic Church		Somerville	
SMV.BI	Cambridge Multiple Resource Area		Somerville	
SMV.BJ	Mystic Valley Parkway		Somerville	
SMV.BK	Orchard Street Area		Somerville	
SMV.BL	Central - Atherton - Spring - Summer Streets		Somerville	

Inv. No.	Property Name	Street	Town	Year
SMV.BM	Dane Street Local Historic District		Somerville	
SMV.BN	Florence - Myrtle Streets Local Historic District		Somerville	
SMV.BO	Everett Street Local Historic District		Somerville	
SMV.BP	Lowell Historic District		Somerville	
SMV.BQ	Lower Franklin Street Local Historic District		Somerville	
SMV.BR	Morrison Avenue Local Historic District		Somerville	
SMV.BS	Mount Vernon Street Local Historic District		Somerville	
SMV.BT	Linden Avenue, 60, Local Historic District		Somerville	
SMV.BU	Upper Perkins - Webster Streets Local Historic		Somerville	
SMV.BV	East Somerville Local Historic District		Somerville	
SMV.BW	Flint Street Local Historic District		Somerville	
SMV.BX	Pearl Street Local Historic District		Somerville	
SMV.BY	Prospect Hill Local Historic District		Somerville	
SMV.BZ	Thurston - Walnut Local Historic District		Somerville	
SMV.CA	Union Square Local Historic District		Somerville	
SMV.CB	Nine Brastow Avenue Local Historic District		Somerville	
SMV.CC	Bennett Street Industrial Area		Somerville	
SMV.CD	Properzi Way Area		Somerville	
SMV.CE	American Tube Works Company Complex		Somerville	
SMV.CF	Harvard Hill Historic District		Somerville	
SMV.331	Harlow, George H. House	7 Adams St	Somerville	1893
SMV.145	Keyes, Amos House	12 Adams St	Somerville	c 1860
SMV.332	Bentley, Emma House	15 Adams St	Somerville	1894
SMV.493		30 Adams St	Somerville	c 1890
SMV.144	Downer Rowhouses	55-63 Adams St	Somerville	c 1880
SMV.143	Williams, F. G. House	37 Albion St	Somerville	c 1860
SMV.1144	Vinal, Quincy A. - Cheever, Albert House	6 Aldersey St	Somerville	c 1895
SMV.1143	Vinal, Quincy A. - Tead, Rev. Edward Sampson House	8 Aldersey St	Somerville	c 1880
SMV.1139	Vinal, Quincy A. House	9-11 Aldersey St	Somerville	c 1849
SMV.1142	Hammond, Stephen G. - Lovering, Joseph House	12 Aldersey St	Somerville	1869
SMV.1141	Elizabeth S. - Steven, Fenno House	14-16 Aldersey St	Somerville	1870
SMV.277	Taylor, Adoniram House and Stable	17-19A Aldersey St	Somerville	1868
SMV.1140	Lord, David D. House	18 Aldersey St	Somerville	r 1890
SMV.142	Mystic Pumping Station	Alewife Brook Pkwy	Somerville	1863
SMV.930	Alewife Brook Parkway - Northern Segment	Alewife Brook Pkwy	Somerville	1908
SMV.932	Alewife Brook Parkway Tree Border	Alewife Brook Pkwy	Somerville	r 1920

Inv. No.	Property Name	Street	Town	Year
SMV.1280	Harding, Chester E. - Psilopoulos, Harry House	279 Alewife Brook Pkwy	Somerville	1928
SMV.1281	Pollock, James N. and Thomas House	283 Alewife Brook Pkwy	Somerville	1928
SMV.689	Alewife Brook Pumping Station	392 Alewife Brook Pkwy	Somerville	c 1927
SMV.367	Rowe, John House	10 Allen Ct	Somerville	c 1860
SMV.368		21 Allen St	Somerville	r 1845
SMV.369		42 Allen St	Somerville	r 1835
SMV.708	Faulkner Brothers Garage	11-15 Alpine St	Somerville	1950
SMV.494		41 Ames St	Somerville	r 1895
SMV.521	Kempton, Charles House	27 Appleton St	Somerville	c 1865
SMV.522	Parkhurst, Charles House	29 Appleton St	Somerville	c 1860
SMV.1008	Building #29	Arlington St	Somerville	c 1925
SMV.141	Williams, Charles Jr. House	1 Arlington St	Somerville	c 1858
SMV.140		10 Arlington St	Somerville	c 1885
SMV.1151	Saint Benedict's Roman Catholic Church Rectory	25 Arlington St	Somerville	1934
SMV.566	Rawson, James House	28 Arlington St	Somerville	1860
SMV.70	Carr, Martin W. School	25 Atherton St	Somerville	1898
SMV.93	Robinson, Enoch House	36 Atherton St	Somerville	1856
SMV.92	Robinson, William House	40 Atherton St	Somerville	c 1860
SMV.91		44-48 Atherton St	Somerville	c 1850
SMV.1031		47 Atherton St	Somerville	c 1880
SMV.1032	Rogers, Artemas House	53 Atherton St	Somerville	c 1850
SMV.1033	Frost, John O. House	54 Atherton St	Somerville	c 1880
SMV.1034	Dwyer, James A. - Murphy, Elizabeth House	55-57 Atherton St	Somerville	1916
SMV.90		58-60 Atherton St	Somerville	c 1850
SMV.1035	Edgerton, W. L. House	61 Atherton St	Somerville	c 1860
SMV.1036		65-67 Atherton St	Somerville	c 1870
SMV.915	Mystic Valley Parkway - Auburn Street Bridge	Auburn St	Somerville	1906
SMV.567	Baker, James B. T. House	7 Auburn St	Somerville	c 1860
SMV.617	Woods, John M. House	3 Avon St	Somerville	c 1890
SMV.2	Boston Engine Terminal Budd House	B & M Railroad	Somerville	1957
SMV.3	Boston Engine Terminal Yard #5 Shanty	B & M Railroad	Somerville	c 1930
SMV.4	Boston Engine Terminal Diesel Locomotive Shop	B & M Railroad	Somerville	1948
SMV.5	Boston Engine Terminal Tin Store House	B & M Railroad	Somerville	1932
SMV.7	Boston Engine Terminal Office Building	B & M Railroad	Somerville	1930
SMV.8	Boston Engine Terminal Service and Inspection Hse	B & M Railroad	Somerville	1972
SMV.9	Boston Engine Terminal Engine House	B & M Railroad	Somerville	1931
SMV.908	High Line Bridge	B & M Railroad	Somerville	1927

Inv. No.	Property Name	Street	Town	Year
SMV.1152	Harris, Samuel T. - Scott, Herbert K. House	41 Bartlett St	Somerville	1894
SMV.913	Beacon Street Bridge over B and M Railroad	Beacon St	Somerville	1899
SMV.779	Beacon Street Garage	6-8 Beacon St	Somerville	1917
SMV.778	Boston Knitting Mill - Cambridge Rubber Company	10-12 Beacon St	Somerville	c 1925
SMV.777	Graff, George B. Manufacturing Company Factory	14-18 Beacon St	Somerville	1920
SMV.139		28-36 Beacon St	Somerville	c 1880
SMV.138	Wyatt, George House	33 Beacon St	Somerville	c 1860
SMV.370		38 Beacon St	Somerville	c 1885
SMV.371		46-48 Beacon St	Somerville	c 1886
SMV.1025	Delay, Honora Apartment House	50 Beacon St	Somerville	c 1890
SMV.1153	Dimmick, Calvin House	69-71 Beacon St	Somerville	1899
SMV.372		76 Beacon St	Somerville	c 1870
SMV.1459		94 Beacon St	Somerville	1976
SMV.1154	Forsberg, Eric Bakery	99 Beacon St	Somerville	c 1926
SMV.1460	McGerrish, George - Rice, Samuel House	101 Beacon St	Somerville	c 1845
SMV.1461	Smith, Stephen House	102 Beacon St	Somerville	c 1874
SMV.780		108 Beacon St	Somerville	c 1890
SMV.373		185-187 Beacon St	Somerville	c 1890
SMV.783		189-191 Beacon St	Somerville	c 1928
SMV.784	Colonial Repair Service	225-227 Beacon St	Somerville	1925
SMV.227	Durell, George W. School	245 Beacon St	Somerville	1894
SMV.374		321-323 Beacon St	Somerville	c 1890
SMV.375		328 Beacon St	Somerville	c 1880
SMV.376		336 Beacon St	Somerville	c 1850
SMV.1338	Conant, George F. - Knapp, Oren S. House	11 Belmont St	Somerville	c 1855
SMV.216	James, Joseph Knightley House	83 Belmont St	Somerville	1893
SMV.618		2-4 Belmont Terr	Somerville	c 1848
SMV.568		23 Benedict St	Somerville	c 1868
SMV.1344	Bennett Auto Exchange Body Shop	26 Bennett St	Somerville	c 1941
SMV.1345	Prospect Iron and Steel Corporation Warehouse	32 Bennett St	Somerville	c 1970
SMV.1346	Prospect Iron and Steel Corporation Warehouse	38 Bennett St	Somerville	1989
SMV.619	Benton, Reuben - Corwin, Charles R. House	1 Benton Rd	Somerville	c 1890
SMV.1088	Benton, Reuben - Hood, Charles H. House	2 Benton Rd	Somerville	c 1890
SMV.19	Raymond, Francis House	12 Benton Rd	Somerville	c 1910
SMV.18	Carr, Eugene House	18 Benton Rd	Somerville	c 1910
SMV.621	Haskell, Richard House	40 Benton Rd	Somerville	c 1858

Inv. No.	Property Name	Street	Town	Year
SMV.137	Snow, Lemuel Jr. House	81 Benton Rd	Somerville	c 1890
SMV.136	Crowell, C. C. House	85 Benton Rd	Somerville	c 1890
SMV.622		70 Berkely St	Somerville	r 1895
SMV.1262	Morse, George H. House	4 Berwick St	Somerville	1890
SMV.272	Robbins, Henry House	2 Bigelow St	Somerville	1886
SMV.1155	Bean, Ivory - Bailey, Mary E. House	10 Bigelow St	Somerville	c 1887
SMV.464	Sharpe, Robert - Klenert, John F. House	4 Billingham St	Somerville	c 1890
SMV.465	Robie, Alma M. House	14 Billingham St	Somerville	c 1890
SMV.792	Boston Ice Company Building	Bleachery Ct	Somerville	c 1915
SMV.378		2-4 Bolton St	Somerville	r 1865
SMV.1026		6-8 Bolton St	Somerville	r 1865
SMV.239	Bonner, William House	17 Bonner Ave	Somerville	r 1850
SMV.1115	Bromfield - Pearson School and Engineering Bldg.	Boston Ave	Somerville	
SMV.1362	Somerville Automobile Company	662-664 Boston Ave	Somerville	1906
SMV.926	Boston Engine Terminal Oil Separation House	Boston Eng. Terminal	Somerville	c 1932
SMV.1017	Boston Engine Terminal Power Plant	Boston Eng. Terminal	Somerville	1932
SMV.273	Blodgett, Elizabeth House	65 Boston St	Somerville	1887
SMV.1156	Dugan, John House	71-73 Boston St	Somerville	c 1845
SMV.450		79 Boston St	Somerville	r 1855
SMV.274	Marden, Jennie House	83 Boston St	Somerville	1892
SMV.55	Munroe, Edwin and Benjamin House	91 Boston St	Somerville	c 1850
SMV.775	Somerville National Bank	11-15 Bow St	Somerville	1908
SMV.1370	Liggett's Drug Store	14 Bow St	Somerville	c 1925
SMV.774	U. S. Post Office - Union Square Branch	16-18 Bow St	Somerville	1919
SMV.20	Prospect Hill Congregational Church	17 Bow St	Somerville	1887
SMV.1371	Haderbolets, Anthony Building	19 Bow St	Somerville	c 1887
SMV.1372	Durrell, Dr. Thomas M. and Alma L. House and Doctor Office	21 Bow St	Somerville	c 1884
SMV.1373	J. B. Adams Company Dry Goods Store	22 Bow St	Somerville	c 1927
SMV.1374	Townsend, Pamela W. Building	25 Bow St	Somerville	c 1889
SMV.22	Bell, Dr. - Lambert House	26 Bow St	Somerville	c 1874
SMV.21	Orcutt, W. House	30 Bow St	Somerville	c 1874
SMV.1279	Dearborn, Dr. Alvah B. House	32 Bow St	Somerville	c 1890
SMV.26	Richmond, The	33-37 Bow St	Somerville	1892
SMV.23	Sanborn, Robert - Dearborn, Dr, Alvah B. House	34 Bow St	Somerville	c 1852
SMV.24	Plummer, S. N. House	36 Bow St	Somerville	c 1874
SMV.25	Market Building	38-40 Bow St	Somerville	c 1928

Inv. No.	Property Name	Street	Town	Year
SMV.28		39-49 Bow St	Somerville	c 1900
SMV.33	Crumbie, William G. House	42 Bow St	Somerville	c 1874
SMV.29	Mann, Dr. E. C. House	46 Bow St	Somerville	c 1874
SMV.32	Somerville Police Station	50 Bow St	Somerville	1874
SMV.1375	Downing, Thomas A. and Sara House	51 Bow St	Somerville	c 1871
SMV.1376	Wahlers, William and Margaret House	53 Bow St	Somerville	r 1890
SMV.1377	Manhattan Laundry	55 Bow St	Somerville	c 1920
SMV.31	Couch, Dr. - Arnold House	56 Bow St	Somerville	c 1874
SMV.30	Bow Street Hotel	58-68 Bow St	Somerville	c 1900
SMV.1378	Cox, Edward A. House	59-61 Bow St	Somerville	r 1890
SMV.1379	Elliot, Charles D. House	63 Bow St	Somerville	r 1890
SMV.776	Cities Service Refining Company Fuel Station	69-71 Bow St	Somerville	c 1925
SMV.752	New England Telephone Building	2-6 Bradley St	Somerville	1904
SMV.623	Sewall, Charles E. House	9 Brastow Ave	Somerville	c 1873
SMV.1157	Sewall, Charles E. Stable	9R Brastow Ave	Somerville	c 1873
SMV.718	Arthur, The	102-114 Bristol Rd	Somerville	1909
SMV.927	Revere, Paul Park	Broadway	Somerville	
SMV.1011	Hurst's Broadway Theater	79-83 Broadway	Somerville	1915
SMV.1009	Columbia Building	84-86 Broadway	Somerville	1902
SMV.1010	Franklin Building	88-90 Broadway	Somerville	1919
SMV.1012		132-146 Broadway	Somerville	c 1915
SMV.1013	Park Garage Company Building	161 Broadway	Somerville	1914
SMV.1014	Somerville Fire Station Engine #2	165 Broadway	Somerville	1895
SMV.318	Holt, Chauncey House	257 Broadway	Somerville	1877
SMV.1466	Broadway Methodist Episcopal Church Rectory	275 Broadway	Somerville	c 1910
SMV.1465	Broadway Methodist Episcopal Church	277 Broadway	Somerville	1882
SMV.736	Welden Hall - Broadway Theater	310-318 Broadway	Somerville	c 1880
SMV.737		315-321A Broadway	Somerville	1924
SMV.735		322 Broadway	Somerville	1911
SMV.319	Princeton, The	333 Broadway	Somerville	1914
SMV.733	Princeton Garage	337-345 Broadway	Somerville	1926
SMV.734	Somerville Trust Company	338 Broadway	Somerville	1926
SMV.135	Langmaid Terrace	359-365 Broadway	Somerville	1892
SMV.333	Glidden, Walter House	380 Broadway	Somerville	1898
SMV.334		392-394 Broadway	Somerville	c 1874
SMV.1023		396-398 Broadway	Somerville	c 1874
SMV.1024		400 Broadway	Somerville	c 1874
SMV.134	Broadway Winter Hill Congregational Church	404 Broadway	Somerville	1890

Inv. No.	Property Name	Street	Town	Year
SMV.335	Foote, Edward House	419 Broadway	Somerville	c 1865
SMV.133	Adams - Magoun House	438 Broadway	Somerville	c 1783
SMV.748		491-495 Broadway	Somerville	c 1915
SMV.740	Broadway Garage	643-645 Broadway	Somerville	c 1930
SMV.715	Ball Square Block	674-694 Broadway	Somerville	1910
SMV.1337	Kelly's Diner	674 Broadway	Somerville	1953
SMV.716	North Somerville Railroad Station	675R Broadway	Somerville	c 1880
SMV.717	Hillson Building	693-701 Broadway	Somerville	1925
SMV.714		710-712 Broadway	Somerville	1924
SMV.709		736-744 Broadway	Somerville	1924
SMV.1158	McDonough, Thomas E. House	771 Broadway	Somerville	1903
SMV.1159	Lewis, Andrew R. House	773 Broadway	Somerville	1904
SMV.1160	Cook, George House	787 Broadway	Somerville	1902
SMV.466	Valentine, Herbert E. House	1098 Broadway	Somerville	c 1875
SMV.686		1112-1122 Broadway	Somerville	c 1910
SMV.681	Cliff, The	1137-1147 Broadway	Somerville	c 1906
SMV.687		1150-1152 Broadway	Somerville	c 1906
SMV.682	Cliff, Zebedee E. Building	1151-1165 Broadway	Somerville	1905
SMV.683	Teele Square Theater	1154-1164 Broadway	Somerville	1922
SMV.1161	Saint James Episcopal Church	1170 Broadway	Somerville	1876
SMV.684		1198-1212 Broadway	Somerville	1923
SMV.1162	Hammond, Horace W. - Howard, Ralph House	66 Bromfield Rd	Somerville	1908
SMV.624	Morse, Albert House	10 Burnside St	Somerville	c 1845
SMV.187	Murphy, Thomas - Lea, James L. House	3-5 Campbell Pk	Somerville	1892
SMV.186	Simonds, Nathan House	7 Campbell Pk	Somerville	1891
SMV.185	Buttimer, Maurice House	9-11 Campbell Pk	Somerville	c 1891
SMV.184	Hillman, John House	13 Campbell Pk	Somerville	1891
SMV.183	Holbrook, Julia A. House	15 Campbell Pk	Somerville	1892
SMV.182	Weeks, Henry A. House	19 Campbell Pk	Somerville	1891
SMV.917	Cedar Street Bridge over B and M Railroad	Cedar St	Somerville	1888
SMV.524	Merrill, Seth W. House	111 Cedar St	Somerville	c 1890
SMV.661	White Cross Laundry	154 Cedar St	Somerville	1909
SMV.719	Royal White Laundry	165 Cedar St	Somerville	c 1929
SMV.938	Central Street Bridge over MBTA - B & M Railroad	Central St	Somerville	1889
SMV.1163	Stone, Jonathan House	7 Central St	Somerville	c 1870
SMV.1164	Stone, Nathaniel T. House	15 Central St	Somerville	1869
SMV.1165	Elk Club Meeting Hall	29 Central St	Somerville	1922

Inv. No.	Property Name	Street	Town	Year
SMV.1037	Thierry, William O. - Galvin, James J. House	34 Central St	Somerville	c 1904
SMV.1038	Cox, Edward F. House	36 Central St	Somerville	c 1890
SMV.1039	Hemenway, Charles M. House	40 Central St	Somerville	1892
SMV.625	Haigh, John House	44 Central St	Somerville	c 1890
SMV.1090		58 Central St	Somerville	c 1898
SMV.626	Carnervan, The	60 Central St	Somerville	c 1895
SMV.627	Stevens, George House	71 Central St	Somerville	r 1865
SMV.495	Dacey, John House	121 Central St	Somerville	r 1865
SMV.327	Veazie, William Rowhouses	137-145 Central St	Somerville	1889
SMV.496	Keyes, Amos House	154 Central St	Somerville	c 1872
SMV.328	Yeaton, Martha and May House	155 Central St	Somerville	1889
SMV.329	Darling, Samuel House	158 Central St	Somerville	1879
SMV.330	Downer, Cutler House	170 Central St	Somerville	1868
SMV.132	Adams, Charles - Locke, Woodbury House	178 Central St	Somerville	c 1840
SMV.131	Downer Rowhouses	192-200 Central St	Somerville	c 1880
SMV.1166	Temple B'Nai B'Rith Synagogue	201 Central St	Somerville	1919
SMV.343	French, Horace F. House	9 Chandler St	Somerville	1873
SMV.467	Wade, Mary House	44 Chandler St	Somerville	c 1894
SMV.344	Snow, J. Parker House	58 Chandler St	Somerville	1890
SMV.1167	College Avenue Methodist Episcopal Church	14 Chapel St	Somerville	1925
SMV.469	Baldwin, Robert E. House	17 Chapel St	Somerville	c 1890
SMV.210		8 Cherry St	Somerville	1908
SMV.628		17 Cherry St	Somerville	c 1820
SMV.631		30 Cherry St	Somerville	c 1860
SMV.629	Demmon, D. L. House - Fireman's Hospital and Home	31 Cherry St	Somerville	1855
SMV.630	Vincent, George House	32 Cherry St	Somerville	c 1855
SMV.130	Mentzner, W. C. House	36 Cherry St	Somerville	1890
SMV.1169	Fletcher, William G. - Haskell, Frederika E. House	19 Chester St	Somerville	1867
SMV.206	Chapman, Kendrick W. House	20 Chester St	Somerville	1873
SMV.205	Perry, John - Page, Lemuel House	23 Chester St	Somerville	1867
SMV.207	Smith, Alonzo R. House	24 Chester St	Somerville	1857
SMV.129	Bacon, Clifton House	27 Chester St	Somerville	c 1885
SMV.540	Poor, F. N. House	30 Chester St	Somerville	r 1880
SMV.128		14 Chestnut St	Somerville	c 1860
SMV.1168	Tripp, George H. House	7 Clarendon Ave	Somerville	1875
SMV.231	Clark, J. H. House	11 Clark St	Somerville	c 1860

Inv. No.	Property Name	Street	Town	Year
SMV.379	Clark, Joseph House	17 Clark St	Somerville	c 1860
SMV.433		37 Clark St	Somerville	r 1825
SMV.726	Uzeit Soap Manufacturing Company	32 Clifton Ave	Somerville	c 1900
SMV.525		5 Clyde St	Somerville	r 1855
SMV.526		9 Clyde St	Somerville	r 1855
SMV.127		25 Clyde St	Somerville	c 1850
SMV.721	Carlisle-Ayer Door Manufacturing Company	50 Clyde St	Somerville	1926
SMV.720	Agar Manufacturing Corrugated Box Company Building	55 Clyde St	Somerville	c 1928
SMV.702		12-14 College Ave	Somerville	1909
SMV.703		28 College Ave	Somerville	c 1890
SMV.65	West Somerville Branch Library	40 College Ave	Somerville	1909
SMV.342	Third Universalist Church	45 College Ave	Somerville	1884
SMV.345	Lockhardt, Charles H. House	88 College Ave	Somerville	1889
SMV.1171	First Congregational Church of West Somerville	89 College Ave	Somerville	1912
SMV.470	Porter, Isaac House	97 College Ave	Somerville	r 1895
SMV.1172	Garten, Rev. J. Vanor House	113 College Ave	Somerville	1901
SMV.1173	Colson, H. W. P. - Knowles, David S. House	149 College Ave	Somerville	1897
SMV.1174	Dartnell, M. - Winward, Edwin Double House	151 College Ave	Somerville	1897
SMV.1175	Cook, Washington - Brisben, Edwin R. House	215 College Ave	Somerville	1903
SMV.1112	Cook, Thomas House	21 College Hill Rd	Somerville	c 1850
SMV.240	Gustin, Julia House	27 Columbus Ave	Somerville	1892
SMV.451	Richardson, Artemas C. House	39 Columbus Ave	Somerville	1870
SMV.241	Richardson, Artemus C. House	41 Columbus Ave	Somerville	c 1865
SMV.242	Richardson, Artemus C. House	45 Columbus Ave	Somerville	1889
SMV.243	Eberle, Phillip House	47 Columbus Ave	Somerville	c 1882
SMV.267	Gould, Aaron House	50 Columbus Ave	Somerville	1897
SMV.244		53 Columbus Ave	Somerville	1874
SMV.245	McCormic, Thomas J. House	55 Columbus Ave	Somerville	r 1880
SMV.266	Cushman, Charles A. House	56 Columbus Ave	Somerville	1875
SMV.246	Canavan, William - High, William C. House	57 Columbus Ave	Somerville	1877
SMV.265	Kimball, George House	58 Columbus Ave	Somerville	c 1874
SMV.247	Canavan, William - High, William C. House	59 Columbus Ave	Somerville	1877
SMV.126	Brooks, James H. House	61 Columbus Ave	Somerville	c 1880
SMV.52	Brackett, S. E. House	63 Columbus Ave	Somerville	c 1880
SMV.248	Ryder, Henry House	67 Columbus Ave	Somerville	c 1873
SMV.255	Ambrose, John House	68 Columbus Ave	Somerville	1890
SMV.249	Thompson, Benjamin - Flanders, John C. House	69 Columbus Ave	Somerville	1885

Inv. No.	Property Name	Street	Town	Year
SMV.254	Sturtevant, Lindley - Coolidge, Aaron House	70 Columbus Ave	Somerville	1875
SMV.250	Drouet, Charles House	73 Columbus Ave	Somerville	c 1885
SMV.251	Sturtevant, Richard House	75-77 Columbus Ave	Somerville	c 1884
SMV.253	Sanborn, Robert - Sturtevant, Lindley House	76 Columbus Ave	Somerville	c 1882
SMV.1021	Sanborn, Robert - Sturtevant, Lindley Barn	76 Columbus Ave	Somerville	c 1882
SMV.252	Sanborn, Robert - Sturtevant, Richard House	78 Columbus Ave	Somerville	c 1882
SMV.380	Downing, M. C. House	69 Concord Ave	Somerville	c 1880
SMV.1335		22 Connecticut Ave	Somerville	c 1910
SMV.541	Bower, F. E. Milk Company Stable	6 Cottage Ave	Somerville	r 1875
SMV.542		12 Cottage Ave	Somerville	r 1865
SMV.543		18 Cottage Ave	Somerville	c 1853
SMV.544	Morse, Perley House	24 Cottage Ave	Somerville	r 1865
SMV.546	Wilson, Nathan House	3 Cottage Cir	Somerville	c 1850
SMV.214	Spring, Andrew Craigie House	23 Craigie St	Somerville	c 1860
SMV.1176	Dickerman, Frank E. House	47 Craigie St	Somerville	1892
SMV.632		63 Craigie St	Somerville	c 1890
SMV.215	Brownell, William S. House	70 Craigie St	Somerville	1873
SMV.569	Trott, H. House	24 Crescent St	Somerville	c 1870
SMV.923	Cross Street Bridge over B and M Railroad	Cross St	Somerville	1928
SMV.572		16 Cross St	Somerville	c 1855
SMV.316	Grace Baptist Church	59 Cross St	Somerville	1892
SMV.573		67 Cross St	Somerville	c 1885
SMV.1015		76-78 Cross St	Somerville	1922
SMV.112	Williams, Charles House	108 Cross St	Somerville	c 1848
SMV.571	First Universalist Church	138-140 Cross St	Somerville	1869
SMV.315	Klous, Seman Rowhouses	8-16 Cross St East	Somerville	1879
SMV.1334		44 Cross St East	Somerville	c 1940
SMV.1016	M and M Transportation Company Building	60 Cross St East	Somerville	c 1934
SMV.471	Holden, Simon House	97 Curtis St	Somerville	c 1860
SMV.914	Dane Street Bridge over B and M Railroad	Dane St	Somerville	1913
SMV.1109	C.J. Maney Company - Builders Iron Works Building	24 Dane St	Somerville	c 1915
SMV.381	Hadley and Lombard House	50 Dane St	Somerville	c 1880
SMV.382	Hodson, Richard - Branagan, James House	62 Dane St	Somerville	c 1855
SMV.1177	Littlefield, Rufus - James, William House	64 Dane St	Somerville	c 1851
SMV.1178	Mills, William - Proctor, Levi H. House	65 Dane St	Somerville	c 1856
SMV.1179	Mills, William - Healey, Michael House	66 Dane St	Somerville	c 1855
SMV.102		72R Dane St	Somerville	r 1775

Inv. No.	Property Name	Street	Town	Year
SMV.100		21 Dartmouth St	Somerville	c 1890
SMV.701		37-39 Davis Sq	Somerville	c 1885
SMV.660	Somerville Theatre	55 Davis Sq	Somerville	1914
SMV.547	Collins, Richard House	23-25 Day St	Somerville	c 1865
SMV.204	Stebbins, Eliza House	30 Day St	Somerville	1878
SMV.125	Knight, R. A. - Lacount, Eugene House	34 Day St	Somerville	c 1870
SMV.662	Sprague, W.D. and Hathaway, J. F. Studio Annex	58 Day St	Somerville	1890
SMV.1180	Mendum, Samuel W. - Lambert, Frederick D. House	16 Dearborn Rd	Somerville	c 1894
SMV.1310		29 Derby St	Somerville	c 1910
SMV.1309		33 Derby St	Somerville	c 1910
SMV.1308		35 Derby St	Somerville	c 1910
SMV.1305		41 Derby St	Somerville	c 1915
SMV.1304		45 Derby St	Somerville	c 1910
SMV.549	Lovering, John W. House	55 Dover St	Somerville	c 1874
SMV.550		72 Dover St	Somerville	c 1880
SMV.551		74 Dover St	Somerville	c 1870
SMV.552		89 Dover St	Somerville	c 1860
SMV.553	Blanchard, B. House	93 Dover St	Somerville	c 1860
SMV.663	Dolleris, Neils A. Automotible Service Station	102 Dover St	Somerville	c 1910
SMV.1181	Abbot, Alice K. - Mayo, Frank A. House	24 Electric Ave	Somerville	1916
SMV.472		81 Electric St	Somerville	c 1890
SMV.1041	Johnson, Josiah D. House	21-23 Elm Pl	Somerville	c 1870
SMV.1040		22-24 Elm Pl	Somerville	c 1910
SMV.1042		25 Elm Pl	Somerville	c 1890
SMV.900	British Soldiers Graves Marker	Elm St	Somerville	
SMV.633	Henderson, William House	20 Elm St	Somerville	1870
SMV.729		143-149 Elm St	Somerville	1923
SMV.696		240-244 Elm St	Somerville	c 1931
SMV.699		245-249 Elm St	Somerville	c 1926
SMV.697		246-254 Elm St	Somerville	c 1940
SMV.700	Medina, John Block	263-269 Elm St	Somerville	1888
SMV.698	Studio Building	274-282 Elm St	Somerville	c 1933
SMV.1380	Brum, Antonio E. and Eliza House	2 Emerson St	Somerville	r 1863
SMV.1381	Dennett, Nathaniel and Theodore House	3 Emerson St	Somerville	r 1863
SMV.1382	Guthrie, James F. and Annie House	4 Emerson St	Somerville	r 1863
SMV.1383	Neil, J. D. House	8 Emerson St	Somerville	r 1863
SMV.1384	Diebner, Charles T. and Caroline - O'Connell,	10 Emerson St	Somerville	c 1869

Inv. No.	Property Name	Street	Town	Year
	John J. and Mary T. House			
SMV.1149	Cambridge Almshouse	Endicott Ave	Somerville	1850
SMV.1150	Matignon Central Catholic High School	Endicott Ave	Somerville	1946
SMV.124	Cooper - Davenport Tavern Wing	81 Eustis St	Somerville	1808
SMV.575	Horton, Calvin House	26 Everett Ave	Somerville	c 1885
SMV.1385	Everett, The	8 Everett St	Somerville	c 1912
SMV.1182	Tuttle, Samuel A. - Phillips, George House	14 Everett St	Somerville	c 1852
SMV.1386	Hutchinson, A. B. - Adams House	17-19 Everett St	Somerville	r 1863
SMV.1387	Runey, John House	25 Everett St	Somerville	r 1863
SMV.634		1-8 Evergreen Sq	Somerville	c 1865
SMV.123	Dow, L. W. Farmhouse	13 Fairmount Ave	Somerville	1848
SMV.434		18 Farragut St	Somerville	c 1885
SMV.943	Foss Park	Fellsway West	Somerville	
SMV.562	Smith, T. G. Rowhouse	18-26 Fellsway West	Somerville	r 1880
SMV.563	Keene, Helen House	56 Fellsway West	Somerville	c 1890
SMV.1183	Christ Episcopal Church	66 Fellsway West	Somerville	1914
SMV.1263	Hennesey, Michael House	23 Fisk Ave	Somerville	1870
SMV.1184	Knox, Warren - Mahoney, Cornelius House	25 Fisk Ave	Somerville	c 1871
SMV.1185	Farnham, William House	37 Fisk Ave	Somerville	c 1866
SMV.905	New Hampshire Railroad Bridge	Fitchburg Railroad	Somerville	1924
SMV.664	Great Atlantic & Pacific Tea Co. Distribution Ctr	1 Fitchburg St	Somerville	1920
SMV.1186	Matson, Edward A. - Hoyt, Alfred D. House	11-13 Flint St	Somerville	1858
SMV.1187	Davis, John - Nickerson, John F. House	14 Flint St	Somerville	1857
SMV.1188	Whitman, William D. House	15-17 Flint St	Somerville	1860
SMV.1189	Nickerson, John Double House	16-18 Flint St	Somerville	1883
SMV.1190	Donahoe, Patrick - Davis, Charles M. House	22 Flint St	Somerville	1857
SMV.577	Furber, W. H. House	37 Florence St	Somerville	c 1870
SMV.578	Wood, James Wood Row House	39-43 Florence St	Somerville	c 1875
SMV.1191	Higgins, Charles - Jewell, Nathan Double House	42-44 Florence St	Somerville	c 1874
SMV.579	Conant, Ezra Double House	45-47 Florence St	Somerville	1878
SMV.580	Cole, Herbert A. - Wilson, Seth Apartment House	46-48 Florence St	Somerville	1885
SMV.1030	Cole, Herbert A. - Wilson, Seth Apartment House	50-52 Florence St	Somerville	1885
SMV.581	Bagley, John T. House	61 Florence St	Somerville	1855
SMV.1192	Hardy, Isaac House	67 Florence St	Somerville	1857
SMV.582	Cole, Herbert A. Apartment House	69-71 Florence St	Somerville	1886
SMV.583	Buffam, Thomas J. House	75 Florence St	Somerville	1866
SMV.1004	First National Store Warehouse	Foley St	Somerville	c 1929
SMV.1005	B & M Railroad East Somerville Locomotive	Foley St	Somerville	c 1925

Inv. No.	Property Name	Street	Town	Year
	Shop			
SMV.1006	Porter, H. K. Tool Manufacturing Company	74 Foley St	Somerville	c 1945
SMV.226	Phillips, Franklin House	30 Forest St	Somerville	c 1870
SMV.1193	Chandler, John T. House	8 Franklin St	Somerville	1889
SMV.1194	Bowers, Alonzo House	47 Franklin St	Somerville	c 1870
SMV.584	Blodgett, Nathan - Slade, Frederick W. House	74 Franklin St	Somerville	c 1848
SMV.1117		77 Franklin St	Somerville	c 1874
SMV.1118		79-79A Franklin St	Somerville	c 1875
SMV.1195	Blodgett, Nathan - Gee, John Double House	80 Franklin St	Somerville	c 1848
SMV.1119		81 Franklin St	Somerville	c 1897
SMV.1120		83 Franklin St	Somerville	c 1897
SMV.1121		85A Franklin St	Somerville	c 1897
SMV.1122		87 Franklin St	Somerville	c 1874
SMV.1123		91-93 Franklin St	Somerville	c 1874
SMV.1124		95R Franklin St	Somerville	c 1897
SMV.586		10-12 George St	Somerville	r 1835
SMV.311	Lattimore - Pratt House	20 George St	Somerville	r 1880
SMV.53	Phillips, Joseph P. and Nora Three-Decker	6 Giles Pk	Somerville	c 1895
SMV.1388	Felch, Susie E. and Gilbert Row House	8-12 Giles Pk	Somerville	r 1890
SMV.1389	Blaikie, Luther House	11 Giles Pk	Somerville	c 1892
SMV.497	Gilman, Charles E. House	108 Gilman St	Somerville	r 1840
SMV.636		6 Gilson Terr	Somerville	c 1885
SMV.1196	Horton, Calvin Double House	34 Glen St	Somerville	1857
SMV.587	Rigg, Alfred Double House	116 Glen St	Somerville	c 1880
SMV.1125		127-133 Glen St	Somerville	c 1889
SMV.1126		137-139 Glen St	Somerville	c 1925
SMV.1127		147-151 Glen St	Somerville	c 1889
SMV.1128		152-154 Glen St	Somerville	c 1889
SMV.483		34 Glenwood Rd	Somerville	c 1870
SMV.554		3 Glover Cir	Somerville	c 1880
SMV.665	Carr, M. W. and Company Factory - Building #1	63 Gorham St	Somerville	c 1894
SMV.1363	Carr, M. W. and Company Factory - Building #2	63 Gorham St	Somerville	c 1900
SMV.1364	Carr, M. W. and Company Factory - Building #3	63 Gorham St	Somerville	1979
SMV.1365	Carr, M. W. and Company Factory - Building #4	63 Gorham St	Somerville	r 1920
SMV.1366	Carr, M. W. and Company Factory - Building #5	63 Gorham St	Somerville	c 1955
SMV.1367	Carr, M. W. and Company Factory - Building #6	63 Gorham St	Somerville	c 1955
SMV.1368	Carr, M. W. and Company Factory - Building #7	63 Gorham St	Somerville	c 1895
SMV.1369	Carr, M. W. and Company Factory - Infill Building	63 Gorham St	Somerville	r 1955

Inv. No.	Property Name	Street	Town	Year
SMV.452		12 Grandview Ave	Somerville	c 1870
SMV.1029		14 Grandview Ave	Somerville	c 1870
SMV.453	Taylor, Charles - Briggs, J. Albion House	23 Grandview Ave	Somerville	1891
SMV.1316		51 Grant St	Somerville	c 1920
SMV.1315		55 Grant St	Somerville	c 1910
SMV.1314		59 Grant St	Somerville	c 1920
SMV.1313		62 Grant St	Somerville	c 1910
SMV.1312		64 Grant St	Somerville	c 1920
SMV.1311		72 Grant St	Somerville	c 1910
SMV.454	Dugan, John - Twombly, Joseph Q. House	19 Greenville St	Somerville	c 1850
SMV.383		8 Greenwood Terr	Somerville	
SMV.384	Price, E. House	12-14 Greenwood Terr	Somerville	c 1895
SMV.707	Harding, Arthur Oil Can Manufacturing Company	48-50 Grove St	Somerville	c 1924
SMV.1129		10 Hadley Ct	Somerville	c 1874
SMV.11		14 Hall Ave	Somerville	c 1895
SMV.1113		15 Hall Ave	Somerville	
SMV.1197	Chick, Herbert A. - Jenness, Mary S. Stable	25 Hamlet St	Somerville	1887
SMV.666	McGann, Thomas F. Bronze Foundry	Hanson St	Somerville	1909
SMV.97	Chestnut Court Houses	1-3 Harvard Pl	Somerville	c 1850
SMV.96	Chestnut Court Houses	9-11 Harvard Pl	Somerville	c 1850
SMV.1043	Johnson, Amos - Purdy, Edmund C. House	10 Harvard Pl	Somerville	r 1865
SMV.1044	Purdy, Edmund C. - Clark, Joseph House	14 Harvard Pl	Somerville	r 1865
SMV.1045		7-9 Harvard St	Somerville	c 1910
SMV.1046		11 Harvard St	Somerville	c 1920
SMV.1047	Boyden, Dr. Wyatt C. - Bradford, William R. House	12 Harvard St	Somerville	1850
SMV.1048		16 Harvard St	Somerville	c 1920
SMV.1049		18 Harvard St	Somerville	c 1920
SMV.1050		20 Harvard St	Somerville	c 1950
SMV.1051		22 Harvard St	Somerville	c 1950
SMV.1052		35 Harvard St	Somerville	c 1890
SMV.1053		37 Harvard St	Somerville	c 1880
SMV.1054	Stetson, Susan House	38 Harvard St	Somerville	1891
SMV.1055		40 Harvard St	Somerville	c 1885
SMV.588	Gilman, Sarah House	11 Hathorn St	Somerville	c 1890
SMV.1198	Saint Benedict's Roman Catholic Church	25 Hathorn St	Somerville	1911
SMV.1390	Sturtevant, George F. Double House	3-5 Hawkins St	Somerville	r 1863
SMV.1391	Hawkins Street Auto Body Shop - J. and E. Auto	3-5 Hawkins St	Somerville	r 1955

Inv. No.	Property Name	Street	Town	Year
	Body Shop			
SMV.1392	McGinty, Rachel House	11 Hawkins St	Somerville	c 1883
SMV.1393	Atherton, Adams and James House	14 Hawkins St	Somerville	c 1892
SMV.1394	W. B. Brown Plumbing and Heating Company Building	16 Hawkins St	Somerville	1900
SMV.1264	Zweireiltes, John House	10 Henderson St	Somerville	1890
SMV.1265	Corey, Frank J. House	13 Henderson St	Somerville	1890
SMV.1266	McDonald, Allen J. House	21 Henderson St	Somerville	1890
SMV.1267	Kennedy, Thomas F. House	22 Henderson St	Somerville	1897
SMV.1268	Bezanson, John G. House	23 Henderson St	Somerville	1890
SMV.1199	Zinn, Gilbert J. - Gertz, Erwin A. House	25-27 High St	Somerville	c 1921
SMV.69	Somerville High School	Highland Ave	Somerville	1928
SMV.302		13-15 Highland Ave	Somerville	c 1884
SMV.1022		17-19 Highland Ave	Somerville	c 1884
SMV.301	Carvill, Alphonso and Jemima House	28 Highland Ave	Somerville	1894
SMV.359	Cumberland, The	40-42 Highland Ave	Somerville	c 1890
SMV.300	Langmaid Building	48-52 Highland Ave	Somerville	1889
SMV.101	Highland, The	66 Highland Ave	Somerville	1892
SMV.358	Legg, George M. D. House	72 Highland Ave	Somerville	c 1890
SMV.36	Loring, George House	76 Highland Ave	Somerville	c 1895
SMV.66	Central Library	79 Highland Ave	Somerville	1914
SMV.936	Somerville Spanish War Monument	79 Highland Ave	Somerville	1929
SMV.937	Somerville Civil War Memorial	79 Highland Ave	Somerville	1908
SMV.37	Somerville City Hall	93 Highland Ave	Somerville	1852
SMV.919	Dilboy, George Bust	93 Highland Ave	Somerville	1930
SMV.755	Somerville Y. M. C. A.	101-103 Highland Ave	Somerville	1904
SMV.322		117-119 Highland Ave	Somerville	c 1850
SMV.122	First Universalist Church	125 Highland Ave	Somerville	r 1920
SMV.121	First Unitarian Church	130 Highland Ave	Somerville	1894
SMV.323	Wadleigh, William House	135 Highland Ave	Somerville	1893
SMV.38	Gaut, Samuel House	137 Highland Ave	Somerville	c 1850
SMV.39	Barnes, Melissa E. and Walter S. House	140 Highland Ave	Somerville	r 1890
SMV.363	Conant, Harlan Page House	145 Highland Ave	Somerville	c 1870
SMV.728		148-152 Highland Ave	Somerville	c 1915
SMV.756	Central Building, The	149-153 Highland Ave	Somerville	1921
SMV.360	Lovejoy, George S. House	167 Highland Ave	Somerville	1899
SMV.361		169 Highland Ave	Somerville	c 1910
SMV.710	Somerville Armory	191 Highland Ave	Somerville	1903

Inv. No.	Property Name	Street	Town	Year
SMV.711		215-217 Highland Ave	Somerville	c 1917
SMV.712	Somerville Fire Station Engine #7	265 Highland Ave	Somerville	c 1890
SMV.362	Lawrence, Bernard House	289 Highland Ave	Somerville	c 1885
SMV.1205	Curran, John House	309 Highland Ave	Somerville	c 1871
SMV.713	Taylor, Mary Dry Good Store	317 Highland Ave	Somerville	1914
SMV.120		343 Highland Ave	Somerville	c 1880
SMV.727	Somerville Sales and Service Building	363 Highland Ave	Somerville	1922
SMV.555	Rice, W. P. House	368 Highland Ave	Somerville	c 1885
SMV.705	A and W Hastings Door Company Factory	373 Highland Ave	Somerville	r 1923
SMV.695	Davis Building	402 Highland Ave	Somerville	c 1928
SMV.694	Somerville Trust Company Building	406-408 Highland Ave	Somerville	1919
SMV.692	Beal, A. B. Commercial Block	407 Highland Ave	Somerville	1909
SMV.693	Dreyfus, Edwin J. Building	420-424 Highland Ave	Somerville	1922
SMV.1202	Hobbs, Joseph House	8 Hinckley St	Somerville	1871
SMV.1203	Peters, Cyrus S. - Ring, Matthew C. House	12 Hinckley St	Somerville	c 1870
SMV.1204	Kane, Patrick House	16 Hinckley St	Somerville	1886
SMV.1269	Chute, David A. House	23 Hinckley St	Somerville	1867
SMV.1270	Hood, James H. - Doyle, Andrew House	80 Hinckley St	Somerville	1890
SMV.1271	Stengard, Peter House	84 Hinckley St	Somerville	1890
SMV.918	Deco Panels	14-48 Holland St	Somerville	1989
SMV.688	Teele Square Fire Station	218-220 Holland St	Somerville	c 1920
SMV.685		235-237 Holland St	Somerville	c 1890
SMV.667	Norton, George W. Soap Works	Horace St	Somerville	1903
SMV.786	Mystic Valley Foundry	14-16 Horace St	Somerville	c 1940
SMV.1027		26-32 Houghton St	Somerville	r 1865
SMV.385		36-40 Houghton St	Somerville	r 1865
SMV.229	Fairborn, T. House	39 Houghton St	Somerville	c 1854
SMV.119		53 Hudson St	Somerville	c 1890
SMV.529	Blaikie, Thomas House	145 Hudson St	Somerville	c 1890
SMV.386	Tarbell and Tarbell Apartment House	2-6 Ivaloo St	Somerville	c 1890
SMV.387	Chase, Daniel E. House	8-10 Ivaloo St	Somerville	c 1860
SMV.388	Chase, Daniel E. House	16 Ivaloo St	Somerville	c 1860
SMV.798	Amercian Radiator Company Warehouse	17 Ivaloo St	Somerville	c 1928
SMV.389	Mansfield, E. G. House	18 Ivaloo St	Somerville	c 1895
SMV.390	Stevens, Charles House	36 Ivaloo St	Somerville	c 1870
SMV.564	Littlefield, Samuel House	60-64 Jacques St	Somerville	c 1850
SMV.565		93 Jacques St	Somerville	r 1845
SMV.1323		12 Jaques St	Somerville	c 1900

Inv. No.	Property Name	Street	Town	Year
SMV.1320		13 Jaques St	Somerville	c 1920
SMV.1322		14 Jaques St	Somerville	c 1885
SMV.1319		15 Jaques St	Somerville	c 1920
SMV.1321		16 Jaques St	Somerville	c 1885
SMV.1318		17 Jaques St	Somerville	c 1920
SMV.1317		19 Jaques St	Somerville	c 1920
SMV.1018	New England Baking Company	66-68 Joy St	Somerville	1919
SMV.391		2 Kent Ct	Somerville	c 1840
SMV.118		6 Kent Ct	Somerville	c 1750
SMV.392		14 Kent Ct	Somerville	c 1840
SMV.393		47 Kent Ct	Somerville	r 1835
SMV.394	Flemming, Nicolas House	53 Kent Ct	Somerville	c 1850
SMV.668	Victoria Iron Works	32 Kent St	Somerville	1889
SMV.530		22 Kidder Ave	Somerville	
SMV.338	Lewis, Laurence House	44 Kidder Ave	Somerville	1895
SMV.1395	Hildebrand, Rebecca House	6 Kilby St	Somerville	r 1890
SMV.1396	Harrigan, Mary and Jeremiah House	10 Kilby St	Somerville	c 1890
SMV.1397	Frost, Martha E. Building	12 Kilby St	Somerville	r 1890
SMV.1398	Priestly, Oscar R. and Annie House	9 Kingman Rd	Somerville	r 1890
SMV.1399	Flanagan, Patrick House	13 Kingman Rd	Somerville	r 1890
SMV.1402	Snow, Harriet House	14 Kingman Rd	Somerville	c 1871
SMV.1400	Devlin, Rebecca A. House	15 Kingman Rd	Somerville	r 1890
SMV.1403	Mullen, William House	16 Kingman Rd	Somerville	c 1871
SMV.1401	Scott, Mary A. and Peter House	17 Kingman Rd	Somerville	r 1890
SMV.1404	Fay, Martin House	18 Kingman Rd	Somerville	c 1871
SMV.1405	Foster, Charles House	20 Kingman Rd	Somerville	c 1871
SMV.635		10 Knapp St	Somerville	c 1890
SMV.1170	Sawyer, Augustus T. - Lange, Adolphus House	14 Knapp St	Somerville	c 1893
SMV.1130		32 Knowlton St	Somerville	c 1894
SMV.1131		35-37 Knowlton St	Somerville	c 1894
SMV.1106	American Tube Works - Building #2	Lake St	Somerville	1912
SMV.1406	St. George, Ellen and John House	4 Lake St	Somerville	r 1879
SMV.395		5 Lake St	Somerville	r 1855
SMV.794	American Tube Works Garage and Warehouse	40 Lake St	Somerville	c 1912
SMV.224	Bonner - Snow House	16-18 Laurel St	Somerville	c 1860
SMV.637	Lockwood, Rhodes Apartment House	35-41 Laurel St	Somerville	c 1890
SMV.117	Foster, Alexander House	45 Laurel St	Somerville	c 1860
SMV.531	Parsons, John House	96 Lexington St	Somerville	c 1890

Inv. No.	Property Name	Street	Town	Year
SMV.589	Wild, Charles D. Jr. Double House	12-14 Lincoln Ave	Somerville	c 1871
SMV.1206	Lattermoor, Peter J. House	20 Lincoln Ave	Somerville	1871
SMV.1207	Towle, Albion House	16 Lincoln St	Somerville	1885
SMV.1208	Gulliver, Lemuel Double House	20-22 Lincoln St	Somerville	1873
SMV.1114	Story, Isaac House	11 Linden Ave	Somerville	c 1853
SMV.1201	Clancy, Michael House	60 Linden Ave	Somerville	r 1865
SMV.638	Scott, James House	15 Linden St	Somerville	r 1845
SMV.1462	Smith, Stephen - Sharry, Thomas House	48 Line St	Somerville	c 1880
SMV.396		78 Line St	Somerville	c 1820
SMV.1020	Kiley, James A. Wagon Shop	5-9 Linwood St	Somerville	c 1896
SMV.916	Lowell Street Bridge over B and M Railroad	Lowell St	Somerville	1910
SMV.939	Lowell Street Bridge over MBTA - B & M Railroad	Lowell St	Somerville	1910
SMV.722	Winter Hill Motor Company	226 Lowell St	Somerville	1915
SMV.723	Dad's Cookie Company	231 Lowell St	Somerville	c 1926
SMV.724	Fruit Nut Cereal Company	259 Lowell St	Somerville	1921
SMV.1272	Cotter, Michael House	282 Lowell St	Somerville	1875
SMV.1273	Shannahan, Dennis House	283 Lowell St	Somerville	1867
SMV.484		300 Lowell St	Somerville	c 1850
SMV.337	Spelan, Michael House	302 Lowell St	Somerville	1874
SMV.1274	McGrath, William - Harrington, Jeremiah House	308 Lowell St	Somerville	1876
SMV.1275	Binney, Moses Double House	326-328 Lowell St	Somerville	1851
SMV.1209	Hennesey, Michael House	342 Lowell St	Somerville	1861
SMV.1276	Sumner, Samuel R. - Dugan, Patrick House	5-7 Lowell Terr	Somerville	1851
SMV.1277	Dugan, Patrick House	10 Lowell Terr	Somerville	c 1870
SMV.946	Planar Mountain Sculpture	Lower Campus Rd	Somerville	1971
SMV.336	Hunt, Benjamin House	52 Main St	Somerville	c 1870
SMV.435		25 Malvern St	Somerville	r 1885
SMV.397	Green, Julia Three-Decker	16-18 Mansfield St	Somerville	c 1890
SMV.398	Purcell, Mary Three-Decker	51-53 Mansfield St	Somerville	c 1890
SMV.1212	Jones, William Preble House	13 Maple Ave	Somerville	c 1880
SMV.320	Marston, Elias House	27 Maple Ave	Somerville	1874
SMV.499	Beals, H. M. House	28 Maple Ave	Somerville	c 1870
SMV.1059		7 Mardell Cir	Somerville	c 1880
SMV.1200	Barber, William L. Barn	36A Marshall St	Somerville	r 1890
SMV.1282	Smith, Cyrus A. - Rand, Ira House	36 Marshall St	Somerville	c 1859
SMV.500	Moore, William A. House	72 Marshall St	Somerville	c 1870
SMV.501	Dowd, C. O. House	88 Marshall St	Somerville	c 1870
SMV.911	McGrath Highway Bridge over B and M Railroad	McGrath Hwy	Somerville	1926

Inv. No.	Property Name	Street	Town	Year
SMV.945	Boston and Lowell Railroad Retaining Wall	McGrath Hwy	Somerville	1857
SMV.1332		McGrath Hwy	Somerville	c 1970
SMV.1333		McGrath Hwy	Somerville	c 1970
SMV.1019	Jackson and Newton Door and Sash Manufacturing Co.	51 McGrath Hwy	Somerville	r 1905
SMV.590	Griffin Florist Shop	561 McGrath Hwy	Somerville	c 1925
SMV.1331		709 McGrath Hwy	Somerville	c 1940
SMV.116	Sparrow, Edmund House	27 Meacham Rd	Somerville	c 1890
SMV.203	Waters, Lucretia G. House	38 Meacham Rd	Somerville	c 1891
SMV.188	Lea, James L. House	39-41 Meacham Rd	Somerville	1892
SMV.202	Taylor, Nellie F. House	42 Meacham Rd	Somerville	c 1891
SMV.201	Glover, Henry R. House	44 Meacham Rd	Somerville	c 1892
SMV.189	Glover, Henry R. House	45 Meacham Rd	Somerville	1892
SMV.200	Glover, Henry R. House	46 Meacham Rd	Somerville	c 1892
SMV.190	Glover, Henry R. House	47 Meacham Rd	Somerville	c 1892
SMV.199	Glover, Henry R. House	48 Meacham Rd	Somerville	c 1892
SMV.191	Farnham, Wilbert D. House	51 Meacham Rd	Somerville	1890
SMV.192	Glover, Henry R. House	53-55 Meacham Rd	Somerville	1892
SMV.198	Glover, Henry R. House	54 Meacham Rd	Somerville	1892
SMV.197	Simpson House	56 Meacham Rd	Somerville	c 1874
SMV.193	Glover, Henry R. House	57 Meacham Rd	Somerville	1892
SMV.196	Glover, Henry R. House	58 Meacham Rd	Somerville	c 1892
SMV.195	Glover, Henry R. House	62 Meacham Rd	Somerville	c 1892
SMV.194	Smith, W. and T. G. House	64 Meacham Rd	Somerville	c 1874
SMV.556	Glover, Henry R. House	36 Meacham St	Somerville	c 1885
SMV.557	Glover, Henry R. Stable	50-52 Meacham St	Somerville	c 1880
SMV.474	Austin House	18 Mead St	Somerville	c 1870
SMV.6	Boston and Maine Signal System Tower H	Medford St	Somerville	1927
SMV.909	B and M Railroad Bridge over Medford Street	Medford St	Somerville	1913
SMV.922	Medford Street Bridge over B and M Railroad	Medford St	Somerville	1910
SMV.1001	Squire, John P. and Company	33 Medford St	Somerville	1916
SMV.799	North Packing and Provision Company	35-37 Medford St	Somerville	c 1880
SMV.1000	North Packing and Provision Company	37R Medford St	Somerville	c 1880
SMV.400		46 Medford St	Somerville	r 1845
SMV.401		54 Medford St	Somerville	c 1855
SMV.669	Hill - Michie Company Automobile Garage	295-297 Medford St	Somerville	1906
SMV.742	Malta Temple - Signet Commandery #188	339-343 Medford St	Somerville	1902
SMV.1210	Saint Ann's Roman Catholic Church	339 Medford St	Somerville	1897

Inv. No.	Property Name	Street	Town	Year
SMV.753	Reid and Murdock Wholesale Grocery Warehouse	350 Medford St	Somerville	1929
SMV.324	Robinson, James House	371 Medford St	Somerville	1887
SMV.502	Rich, Lyman B. House	381 Medford St	Somerville	1886
SMV.1211	Saint Ann's Roman Catholic Church Rectory	399A Medford St	Somerville	1885
SMV.739		415-415C Medford St	Somerville	c 1930
SMV.503	Brown, Charles H. House	421 Medford St	Somerville	c 1850
SMV.504	Keyes, Charles A. House	481 Medford St	Somerville	c 1880
SMV.746		495-499 Medford St	Somerville	c 1896
SMV.747		498-498B Medford St	Somerville	c 1928
SMV.745		503-505 Medford St	Somerville	c 1924
SMV.744		507-509 Medford St	Somerville	c 1920
SMV.743	Magoun Square Building	529-535 Medford St	Somerville	1924
SMV.670	Ford Motor Company Assembly Plant	Middlesex Ave	Somerville	1926
SMV.1002		Middlesex Ave	Somerville	c 1940
SMV.1003	First National Store Garage	Middlesex Ave	Somerville	c 1927
SMV.671	First National Store Warehouse and office	5 Middlesex Ave	Somerville	c 1927
SMV.942	Middlesex Canal	Middlesex Canal	Somerville	1802
SMV.944	Middlesex Canal	Middlesex Canal	Somerville	1802
SMV.402	Allen, Benjamin - Bonner, George House	4 Milk Pl	Somerville	c 1860
SMV.403		10-12 Miller St	Somerville	r 1830
SMV.680	Miller Brothers Coffin Factory	11 Miller St	Somerville	1881
SMV.404	Chase, Daniel E. Rowhouse	12-26 Mondamon Ct	Somerville	r 1865
SMV.1056	Williston, Belvin T. House	3 Monmouth St	Somerville	c 1896
SMV.1057	Hook, George Greenleaf House	9 Monmouth St	Somerville	c 1845
SMV.1058	Hinckley, William V. T. House	10 Monmouth St	Somerville	1894
SMV.1105	Pushee, John E. - Watts, Albert E. House	17 Monmouth St	Somerville	c 1896
SMV.94	Chestnut Court Houses	23-25 Monmouth St	Somerville	c 1850
SMV.95	Chestnut Court Houses	31-33 Monmouth St	Somerville	c 1850
SMV.505	Fiske, Mary House	16 Montrose St	Somerville	c 1875
SMV.181		53 Moore St	Somerville	
SMV.63	Lowe, Martha Perry School	Morrison Ave	Somerville	1903
SMV.340	Pierce, William Rowhouses	140-148 Morrison Ave	Somerville	c 1870
SMV.532		163 Morrison Ave	Somerville	c 1885
SMV.533		169 Morrison Ave	Somerville	c 1890
SMV.115		197 Morrison Ave	Somerville	c 1860
SMV.534		211 Morrison Ave	Somerville	c 1880
SMV.535	Shedd, William C. House	216-218 Morrison Ave	Somerville	c 1870

Inv. No.	Property Name	Street	Town	Year
SMV.341	Shedd, William House	222 Morrison Ave	Somerville	1873
SMV.639		5 Mossland St	Somerville	c 1820
SMV.211	Foster, Jacob House	10 Mossland St	Somerville	1875
SMV.640		12 Mossland St	Somerville	c 1870
SMV.641		14 Mossland St	Somerville	c 1880
SMV.114	Worthen, Daniel House	8 Mount Pleasant St	Somerville	1841
SMV.591	Robinson, Augustus House	15 Mount Pleasant St	Somerville	c 1840
SMV.592		17 Mount Pleasant St	Somerville	c 1840
SMV.594	Kent's Block	21-39 Mount Pleasant St	Somerville	c 1870
SMV.593	Poor, S. House	28 Mount Pleasant St	Somerville	r 1855
SMV.595	Treadwell, Abbie - Poor, S. Double House	34 Mount Pleasant St	Somerville	c 1850
SMV.87	Davis, Ebenezer House	8 Mount Vernon St	Somerville	r 1845
SMV.85	Howard, Henry House	12R Mount Vernon St	Somerville	c 1820
SMV.86	Howard, Henry House	12 Mount Vernon St	Somerville	c 1850
SMV.84	Hutchins, Harrison M. House	16 Mount Vernon St	Somerville	c 1850
SMV.1213	Fitz, Able - Curtis, Edward House	17 Mount Vernon St	Somerville	1845
SMV.1086		18 Mount Vernon St	Somerville	c 1850
SMV.75		20 Mount Vernon St	Somerville	r 1850
SMV.596	Curtis, E. A. Double House	22-24 Mount Vernon St	Somerville	c 1865
SMV.1214	Cutter, Edmund F. House	26 Mount Vernon St	Somerville	1846
SMV.113		29 Mount Vernon St	Somerville	c 1845
SMV.308	Poole, George House	46 Mount Vernon St	Somerville	1885
SMV.309	Coburn, Fred House	47 Mount Vernon St	Somerville	1885
SMV.1215	Davis, Thomas L. House	50 Mount Vernon St	Somerville	1895
SMV.1216	Hosmer, Frederick H. House	51 Mount Vernon St	Somerville	1892
SMV.307	Webcowit Club	64 Mount Vernon St	Somerville	c 1870
SMV.306	Lombard, Lewis House	68 Mount Vernon St	Somerville	1879
SMV.305	Durell, Walter House	74 Mount Vernon St	Somerville	1873
SMV.597		80-82 Mount Vernon St	Somerville	c 1875
SMV.901	Prospect Hill Tower and Observatory	Munroe St	Somerville	1903
SMV.455	Elliot, Matthew P. House	5-7 Munroe St	Somerville	c 1865
SMV.456	Newton, Alonzo House	12 Munroe St	Somerville	1852
SMV.268	Gilson House	15 Munroe St	Somerville	c 1845
SMV.47		25 Munroe St	Somerville	1900
SMV.49	Grandview, The	82 Munroe St	Somerville	1893
SMV.48	Munroe, Benjamin House	88 Munroe St	Somerville	c 1850
SMV.271	Niles, Louville House	97 Munroe St	Somerville	1890
SMV.598		26 Myrtle St	Somerville	c 1870

Inv. No.	Property Name	Street	Town	Year
SMV.1217	Mullay, John - Mullay, Thomas Double House	37-39 Myrtle St	Somerville	1870
SMV.1219	Stevens, Seth Double House	53-55 Myrtle St	Somerville	1856
SMV.1218	Hubbard, Abraham P. - Merritt, Obediah House	54 Myrtle St	Somerville	1853
SMV.1220	Stevens, Seth Double House	57-59 Myrtle St	Somerville	1853
SMV.1336		Mystic Ave	Somerville	c 1960
SMV.754	Williams Table and Lumber Company	356 Mystic Ave	Somerville	c 1888
SMV.1288		500 Mystic Ave	Somerville	c 2000
SMV.1289		500 Mystic Ave	Somerville	c 1999
SMV.1290		500 Mystic Ave	Somerville	c 1960
SMV.1291		500 Mystic Ave	Somerville	c 1900
SMV.1287		708 Mystic Ave	Somerville	c 1991
SMV.1286		712 Mystic Ave	Somerville	c 1900
SMV.903	B and M Railroad Bridge over Mystic River	Mystic River	Somerville	1894
SMV.904	B and M Railroad Bridge over Mystic River	Mystic River	Somerville	1835
SMV.906	B and M Railroad Bridge over Mystic Valley Parkway	Mystic Valley Pkwy	Somerville	1908
SMV.912	Mystic Valley Parkway - Alewife Brook Bridge	Mystic Valley Pkwy	Somerville	1908
SMV.931	Mystic Valley Rotarty and Miters	Mystic Valley Pkwy	Somerville	r 1920
SMV.934	Mystic Valley Parkway - Central Segment	Mystic Valley Pkwy	Somerville	c 1905
SMV.935	Mystic Valley Parkway Tree Canopy	Mystic Valley Pkwy	Somerville	r 1920
SMV.691		600A Mystic Valley Pkwy	Somerville	c 1915
SMV.1285		600 Mystic Valley Pkwy	Somerville	c 1910
SMV.1278	Donovan, Jeremiah House	28 Nashua St	Somerville	r 1820
SMV.405		411 Norfolk St	Somerville	r 1855
SMV.1223	Dunbar, Victor Y. - Windsor, Percy House	122 North St	Somerville	1921
SMV.1227	Andrews, William H. - Elliot, William M. House	128-130 North St	Somerville	1916
SMV.406	Hunter House	39 Oak St	Somerville	c 1855
SMV.407		43 Oak St	Somerville	c 1855
SMV.408	Haines, Edward House	73 Oak St	Somerville	c 1860
SMV.1407	Towle, Ernest - McCarthy, Michael and Annie House	1 Olive Sq	Somerville	c 1884
SMV.409	Wilkins, Albert House	2 Olive Sq	Somerville	c 1884
SMV.1408	Merritt, Hannah M. - le Gallee, Charles House	3 Olive Sq	Somerville	c 1884
SMV.1410	Wood, Perlin K. - Hutchins, Charles K. House	4 Olive Sq	Somerville	c 1884
SMV.1411	Alves, Joseph - Morgan, Edward B. House	5 Olive Sq	Somerville	c 1884
SMV.1132		20-22 Olive St	Somerville	c 1884
SMV.599		3 Oliver St	Somerville	c 1850
SMV.208	Russell, Edward House	97 Orchard St	Somerville	1868

Inv. No.	Property Name	Street	Town	Year
SMV.558	Wilkins, Henry Stable	135 Orchard St	Somerville	c 1885
SMV.642		Oxford St	Somerville	c 1915
SMV.643	Stanley, T. House	46 Oxford St	Somerville	c 1860
SMV.377	Oxford, The	146-148 Oxford St	Somerville	1901
SMV.1133		5 Palmer Ave	Somerville	c 1887
SMV.476	Stevens, John H. House	11 Park St	Somerville	c 1880
SMV.559	Boyden, F. House	14 Park St	Somerville	c 1870
SMV.477	Collieson, John F. House	21 Park St	Somerville	c 1870
SMV.672	Forg, Peter Hardware Factory	50 Park St	Somerville	c 1892
SMV.304	Wright, Henry House	31 Pearl St	Somerville	1896
SMV.601	Callahan, Charles House	32 Pearl St	Somerville	1887
SMV.602	Reed, Nathan H. House	35 Pearl St	Somerville	1894
SMV.603	Buffram and Adams Double House	45-47 Pearl St	Somerville	c 1890
SMV.1224	Conant, Ezra D. - Hadley, S. Henry House	46 Pearl St	Somerville	r 1870
SMV.1225	Burke, Edward House	70 Pearl St	Somerville	1871
SMV.111		81 Pearl St	Somerville	c 1860
SMV.1226	Davis, Oliver J. House	94 Pearl St	Somerville	1870
SMV.1111	Kemp Nut Company	226 Pearl St	Somerville	r 1922
SMV.741	Litchfield Block	247-251 Pearl St	Somerville	1891
SMV.1228	Teague, Charles I. - Fowler, H. M. House	5 Pearson Rd	Somerville	1902
SMV.1229	Moir, George - Auerbach, Bernard House	31-33 Pearson Rd	Somerville	1905
SMV.507	Fletcher, Annie House	6-12 Pembroke Ct	Somerville	c 1890
SMV.110	Prescott, Gustavus G. House	65-67 Perkins St	Somerville	r 1845
SMV.310	Bailey House	77 Perkins St	Somerville	c 1830
SMV.604	Lockwood, R. Apartment House	79-85 Perkins St	Somerville	c 1880
SMV.605	Dole, Charles A. House	84 Perkins St	Somerville	1870
SMV.606	Whiting, John Apartment House	91 Perkins St	Somerville	c 1890
SMV.607	Hughes, John A. House	129 Perkins St	Somerville	c 1870
SMV.312	Waters, Charles House	132 Perkins St	Somerville	c 1860
SMV.608	Waters, Charles House	136 Perkins St	Somerville	c 1850
SMV.609	Hadley, G. W. House	139 Perkins St	Somerville	r 1865
SMV.313	Hemenway, Dr. Horace House	143-145 Perkins St	Somerville	c 1884
SMV.314	Roberts Brothers House	157 Perkins St	Somerville	c 1850
SMV.1060		4 Phillips Pl	Somerville	c 1900
SMV.610		15 Pinckney St	Somerville	c 1870
SMV.611	Wood, Joseph House	26-28 Pinckney St	Somerville	c 1880
SMV.612	Callahan, Charles House	35-37 Pinckney St	Somerville	1890
SMV.1103	Hollander Block, The	4-6 Pleasant Ave	Somerville	c 1890

Inv. No.	Property Name	Street	Town	Year
SMV.279	Tyler, James L. House	8-10 Pleasant Ave	Somerville	1883
SMV.296	White, Hiram L. House	9 Pleasant Ave	Somerville	r 1885
SMV.295	White, Hiram L. House	11 Pleasant Ave	Somerville	r 1885
SMV.280	Walker, Elijah House	12 Pleasant Ave	Somerville	1873
SMV.294	Clary, John - Hollander, Charles B. House	13 Pleasant Ave	Somerville	1872
SMV.293	Walker, Elijah House	15 Pleasant Ave	Somerville	c 1884
SMV.281	Marston, Walter F. - Walker, Elijah House	16 Pleasant Ave	Somerville	c 1874
SMV.292	Walker, Elijah House	17 Pleasant Ave	Somerville	c 1874
SMV.282	Colson, Henry W. P. House	18 Pleasant Ave	Somerville	1895
SMV.283	Colson, Henry W. P. House	20 Pleasant Ave	Somerville	1895
SMV.291	Harwood, P. Merrick House	21 Pleasant Ave	Somerville	1881
SMV.284	Colson, Henry W. P. House	22 Pleasant Ave	Somerville	c 1890
SMV.290	Colson, Henry W. P. House	23 Pleasant Ave	Somerville	1893
SMV.285	Wellington, J. Frank House	24 Pleasant Ave	Somerville	1875
SMV.212		22 Porter St	Somerville	c 1850
SMV.213		23 Porter St	Somerville	c 1850
SMV.645	Winship, Henry A. - Fisher, Mary G. House	31 Porter St	Somerville	c 1846
SMV.646	Emerson, Enoch House	32 Porter St	Somerville	r 1855
SMV.647		36 Porter St	Somerville	c 1850
SMV.902	Reynolds, James A. Traffic Circle Memorial	Powder House Blvd	Somerville	1940
SMV.933	Powder House Boulevard Rotary and Mitters	Powder House Blvd	Somerville	r 1935
SMV.346		52 Powder House Blvd	Somerville	1916
SMV.479		143 Powder House Blvd	Somerville	c 1905
SMV.1231	Clarendon Hill Presbyterian Church	155 Powder House Blvd	Somerville	1923
SMV.928	Powder House Windmill	Powder House Park	Somerville	c 1704
SMV.929	Tufts, Nathan Park	Powder House Park	Somerville	c 1710
SMV.1104	Tufts, Nathan Park Field House	Powder House Park	Somerville	1935
SMV.108	Cliff, Zebedee E. House	29 Powder House Terr	Somerville	c 1900
SMV.109		16-18 Preston Rd	Somerville	c 1910
SMV.221	Ireland, George House	20 Preston Rd	Somerville	1853
SMV.347	Capen, Elmer Hewitt House	8 Professor's Row	Somerville	1875
SMV.348	Anthony, Gardner C. House	14 Professor's Row	Somerville	r 1895
SMV.349	Ballou, Hosea II - Lewis, Leo R. House	20 Professor's Row	Somerville	1854
SMV.350	Schneider, Jerome - Richardson, Mary House	28 Professor's Row	Somerville	1857
SMV.351	Marshall, John P. House	48 Professor's Row	Somerville	1857
SMV.1145	Metcalf Hall	56 Professor's Row	Somerville	1895
SMV.352	Tweed, Benjamin F. - Dearborn, Heman A. House	72 Professor's Row	Somerville	1857

Inv. No.	Property Name	Street	Town	Year
SMV.353	Shipman, William R. House	80 Professor's Row	Somerville	1868
SMV.354	Fay, Charles Earnest House	92 Professor's Row	Somerville	c 1875
SMV.355	Tufts University - Delta Tau Delta Fraternity	98 Professor's Row	Somerville	1936
SMV.356	Tousey, William C. - Rockwell, Edward H. House	106 Professor's Row	Somerville	1875
SMV.357	Sawyer, Dr. Thomas J. - Knight, George T. House	114 Professor's Row	Somerville	c 1860
SMV.1146	Hooper, William L. House	124 Professor's Row	Somerville	1892
SMV.1147		128 Professor's Row	Somerville	c 1930
SMV.1148	Tufts University - Alpha Tau Omega Fraternity	134 Professor's Row	Somerville	c 1935
SMV.410	Cotter, Thomas House	7-9 Properzi Way	Somerville	c 1890
SMV.1232	Saint Anthony of Padua Roman Catholic Church	12 Properzi Way	Somerville	c 1916
SMV.411		22 Properzi Way	Somerville	c 1870
SMV.1350	Fitzgerald, Peter J. - Lavery, Charles A. House	72 Properzi Way	Somerville	c 1890
SMV.1351	Woodwell, Charles H. - Nelson, Horace House	76 Properzi Way	Somerville	c 1850
SMV.420	Woodwell, Charles H. - McGarr, John H. House	80 Properzi Way	Somerville	c 1850
SMV.1353	Smith, Joseph - O'Brien, John Double House	84-86 Properzi Way	Somerville	c 1870
SMV.1354	Chase, Mary A. House	85 Properzi Way	Somerville	c 1890
SMV.421	Maloy, James W. - Marchant, Albert L. House	88 Properzi Way	Somerville	c 1850
SMV.1356	Maloy, James W. - Marchant, Albert L. House	92 Properzi Way	Somerville	c 1850
SMV.1357	Chase, Daniel E. - Murphy, Muchael J. House	93 Properzi Way	Somerville	c 1870
SMV.45	Hines, Richard A. House	5 Prospect Hill Ave	Somerville	1886
SMV.940	Prospect Street Bridge over B & M Railroad	Prospect St	Somerville	r 1915
SMV.1221	Bennett, Clark House	26-28 Prospect St	Somerville	r 1865
SMV.1222	Frost, John A. House	30 Prospect St	Somerville	r 1890
SMV.1347	Bennett Auto Exchange Garage	32-34 Prospect St	Somerville	c 1924
SMV.1348	Schertzer Offices	36-38 Prospect St	Somerville	c 1973
SMV.412	Sanborn, David A. Double House	41-43 Prospect St	Somerville	r 1860
SMV.1349	Prospect Waste Paper Corporation	50-52R Prospect St	Somerville	c 1951
SMV.413	Briggs, Harris House	75 Prospect St	Somerville	r 1855
SMV.673	O'Neill, James P. Garage	92-96 Prospect St	Somerville	1911
SMV.788	A and P Grocery Store	97 Prospect St	Somerville	c 1925
SMV.414	Norcross, Edmund D. House	105 Prospect St	Somerville	c 1860
SMV.230	Walsh, John House	122 Prospect St	Somerville	c 1880
SMV.235	Lord, David Apartments	5-13 Putnam St	Somerville	1892
SMV.447	Hadley, Benjamin - Giles, Joseph House	35 Putnam St	Somerville	c 1868
SMV.1235	Dyer, Frances S. - Woodman, Herbert K. House	61 Putnam St	Somerville	1867
SMV.448		4-8 Quincy St	Somerville	r 1880
SMV.233	Quincy, The	15 Quincy St	Somerville	1895

Inv. No.	Property Name	Street	Town	Year
SMV.449	Marcy, Rev. Icabod House	22 Quincy St	Somerville	c 1870
SMV.234	Hills, John D. House	29-31 Quincy St	Somerville	1873
SMV.51		46 Quincy St	Somerville	1900
SMV.1134		6 Reed Ct	Somerville	c 1880
SMV.1135		7 Reed Ct	Somerville	c 1880
SMV.1234	Ryan, James House	31 Richardson St	Somerville	r 1850
SMV.107	Russell, Philemon House	25 Russell St	Somerville	c 1850
SMV.560	Bowers, F. E. House	41 Russell St	Somerville	c 1865
SMV.561		51 Russell St	Somerville	1900
SMV.910	Sacramento Street Pedestrian Subway Bridge	Sacramento St	Somerville	1897
SMV.415	Lomax, George House	111 Sacramento St	Somerville	c 1852
SMV.437		12 Sanborn Ave	Somerville	c 1900
SMV.237		18 Sanborn Ave	Somerville	1908
SMV.1236	Brackett - Frost, George Row House	29-33 Sargent Ave	Somerville	c 1880
SMV.1237	Simmons, Peabody House	50 Sargent Ave	Somerville	c 1870
SMV.68	Cummings School	School St	Somerville	1931
SMV.921	School Street Bridge over B and M Railroad	School St	Somerville	r 1900
SMV.648	Ridgeway, Edward W. Rowhouse	5-9 School St	Somerville	c 1880
SMV.439		21 School St	Somerville	c 1900
SMV.440	Craig, James P. House	25 School St	Somerville	c 1875
SMV.649	Landers, Alvin Apartment House	40 School St	Somerville	c 1900
SMV.674	Boston Elevated Railway Somerville Substation	76 School St	Somerville	c 1920
SMV.223		101 School St	Somerville	1889
SMV.441		107 School St	Somerville	r 1865
SMV.222	Long, James House	117 School St	Somerville	c 1870
SMV.321	Montrose, The	156 School St	Somerville	1894
SMV.1238	Stickney, Rufus B. - Babb, Nathaneil T. House	193 School St	Somerville	c 1870
SMV.106	Warren, H. House	205 School St	Somerville	c 1870
SMV.508	Hunt, Georgiana House	218 School St	Somerville	c 1890
SMV.509	Ham, Lemuel House	220 School St	Somerville	c 1890
SMV.510	Miles, Frank House	232 School St	Somerville	c 1885
SMV.511	Bingham, N. W. House	235 School St	Somerville	c 1880
SMV.105	Hopkins, Elisha House	237 School St	Somerville	1867
SMV.1463	Smith, Stephen - Simpson, Eilliam and Mary E. A. House	5 Smith Ave	Somerville	c 1874
SMV.228	Leonard, Patrick House	9 Smith Ave	Somerville	r 1870
SMV.416	Bocligiana, Antonio - O'Brien, Daniel and Annie House	10 Smith Ave	Somerville	c 1895

Inv. No.	Property Name	Street	Town	Year
SMV.1464	Stephen Smith House	13 Smith Ave	Somerville	1874
SMV.771	Northern Artery Filling Station	181 Somerville Ave	Somerville	1927
SMV.1412	Trinity Italian Presbyterian Church	203 Somerville Ave	Somerville	1920
SMV.1360	Llewellyn, Edward J. Building	216 Somerville Ave	Somerville	1896
SMV.1413	Assumption of the Blessed Virgin Mary Greek Orthodox Church	217 Somerville Ave	Somerville	1923
SMV.765		218-222 Somerville Ave	Somerville	1926
SMV.417	Fitzpatrick, Michael and Honora Double Three-Decker	223-225 Somerville Ave	Somerville	c 1890
SMV.766	Barnes and Walsh Auto Body Company	224 Somerville Ave	Somerville	c 1933
SMV.1414	DiNitto, Joseph Building	227-231 Somerville Ave	Somerville	r 1925
SMV.1415	Coliten, Edward Building	250-256 Somerville Ave	Somerville	c 1895
SMV.1339	O'Keefe, Thomas House	261 Somerville Ave	Somerville	c 1890
SMV.772	Union Square Garage	267-271 Somerville Ave	Somerville	1914
SMV.1416	Tilo Roofing Company Warehouse	290 Somerville Ave	Somerville	r 1941
SMV.1417	Tilo Roofing Company Warehouse	298 Somerville Ave	Somerville	r 1917
SMV.1340	Saint Thomas Episcopal Church	300 Somerville Ave	Somerville	c 1870
SMV.1418	Bremner, John A. Company Building	304 Somerville Ave	Somerville	r 1915
SMV.1419		305-315 Somerville Ave	Somerville	r 1915
SMV.767	Rafferty, Patrick - Wasserman, Joseph Shop	314-316 Somerville Ave	Somerville	c 1890
SMV.1341	Rafferty, Patrick Block	318-322 Somerville Ave	Somerville	c 1880
SMV.399	Rafferty, Patrick Rowhouse	322 Somerville Ave	Somerville	c 1880
SMV.768	Young, J. F. Block	324-328 Somerville Ave	Somerville	c 1880
SMV.1420	George's Beverage Store	329 Somerville Ave	Somerville	c 1950
SMV.1421	Sanborn, Albert Livery Stables	337-341 Somerville Ave	Somerville	r 1863
SMV.1422	Turner, James and Sophie House	338 Somerville Ave	Somerville	r 1863
SMV.1423		343 Somerville Ave	Somerville	r 1917
SMV.769	Bremner, John A. and Company Building	344-346 Somerville Ave	Somerville	c 1910
SMV.1343	Bent, Cyrus A. House	349 Somerville Ave	Somerville	c 1860
SMV.1424		352 Somerville Ave	Somerville	c 1900
SMV.1425	Terry, Patrick Building	353 Somerville Ave	Somerville	c 1884
SMV.1426	Frost, Martha D. Building	356 Somerville Ave	Somerville	r 1890
SMV.1427	Smith, Jabel G. Double House	357-359 Somerville Ave	Somerville	r 1890
SMV.1428	Santangelo, Concetta Building	358-362 Somerville Ave	Somerville	r 1890
SMV.1429	Connolly, Annie Building	361 Somerville Ave	Somerville	c 1931
SMV.1430	The Parenting Journey Family Center	366 Somerville Ave	Somerville	c 1900
SMV.1431	Rinn, William Lunch Counter	366A Somerville Ave	Somerville	c 1920
SMV.770	Star Theater	374 Somerville Ave	Somerville	c 1890

Inv. No.	Property Name	Street	Town	Year
SMV.1240	Bennett, William F. Block	380 Somerville Ave	Somerville	1892
SMV.364	Towne, George B. Rowhouse	431-439 Somerville Ave	Somerville	c 1870
SMV.104		437 Somerville Ave	Somerville	c 1830
SMV.800	Old Cemetery - Milk Row Cemetery	438 Somerville Ave	Somerville	1804
SMV.1359	American Tube Works Blacksmith Shop	438R Somerville Ave	Somerville	r 1905
SMV.103	Hollingsworth, Robert House	439-441R Somerville Ave	Somerville	c 1840
SMV.365	Hollingsworth, Robert House	439-441 Somerville Ave	Somerville	c 1880
SMV.793	American Tube Works Machine and Pattern Shop	440R Somerville Ave	Somerville	c 1900
SMV.1110	American Tube Works Administration Office Building	440 Somerville Ave	Somerville	1913
SMV.1107	American Tube Works Drawing Mill	444 Somerville Ave	Somerville	r 1915
SMV.1108	American Tube Works Rolling and Drawing Mill	460 Somerville Ave	Somerville	c 1900
SMV.1241	Ireland, Jonathan - Dane, Osgood House	461 Somerville Ave	Somerville	c 1791
SMV.366	Campbell, William House	467 Somerville Ave	Somerville	c 1868
SMV.731		577-579 Somerville Ave	Somerville	c 1924
SMV.225	Flanagan, Edward House	589 Somerville Ave	Somerville	c 1850
SMV.790	Dahlquist Manufacturing Company	610-620 Somerville Ave	Somerville	c 1940
SMV.791		624 Somerville Ave	Somerville	c 1900
SMV.730		665 Somerville Ave	Somerville	c 1926
SMV.418	Koenig, H. F. - McCue, M. House	26 South St	Somerville	r 1860
SMV.651		16 Spring Hill Terr	Somerville	1896
SMV.89		15 Spring St	Somerville	c 1845
SMV.1061	Marsh, Henry J. - Bradford, William House	18-20 Spring St	Somerville	c 1850
SMV.1062	Bugbee, James R. - Morse, Enoch R. House	22-24 Spring St	Somerville	1854
SMV.1063		28 Spring St	Somerville	c 1960
SMV.1065	Jaskun, Justin J. - Clarke, George A. House	31-33 Spring St	Somerville	c 1925
SMV.1064		32 Spring St	Somerville	c 1950
SMV.1066	Robinson, George N. - Lovejoy, Loyal House	34 Spring St	Somerville	c 1852
SMV.1067		35 Spring St	Somerville	c 1900
SMV.1068		37 Spring St	Somerville	c 1920
SMV.1069	Robinson, Ezra B. - Bird, Henry M. House	38 Spring St	Somerville	c 1852
SMV.1070	Pond, William - Hayden, J. Orlin House	42 Spring St	Somerville	c 1845
SMV.1071	Carlton, Amos D. - Proctor, George O. House	44 Spring St	Somerville	1868
SMV.1072	Lavelli, Edwin C. House	45 Spring St	Somerville	1960
SMV.1073	Sutherland, George E. House	46-46A Spring St	Somerville	r 1890
SMV.1074	Woods, John House	47 Spring St	Somerville	c 1860
SMV.88	Rymes, Christopher House	49 Spring St	Somerville	c 1883

Inv. No.	Property Name	Street	Town	Year
SMV.1075	Freeman, Moses H. - Daniels, Edward S. House	50 Spring St	Somerville	c 1850
SMV.1076	Clark, James - Andrews, Harriet M. House	54 Spring St	Somerville	1850
SMV.1007	Sears Roebuck and Company Warehouse	Sturtevant St	Somerville	1941
SMV.27	First United Methodist Church	1 Summer St	Somerville	r 1865
SMV.1432	Cox, Emma A. House	3-5 Summer St	Somerville	c 1893
SMV.1433	Harmon, G. and H. M. House	6 Summer St	Somerville	c 1879
SMV.442	Simonds, George H. Rowhouse	8-20 Summer St	Somerville	c 1880
SMV.1244	Huff, Orrison - Mullholland, James House	22 Summer St	Somerville	1870
SMV.1245	Odiorne, William - Langley, George M. House	24 Summer St	Somerville	1870
SMV.1246	Price, Rev. Lewis V. House	26 Summer St	Somerville	c 1885
SMV.1247	Fish, Eugene W. - Hart, Mary House	28 Summer St	Somerville	c 1885
SMV.757	Perry, Oscar Barber Shop	36-38 Summer St	Somerville	c 1899
SMV.443	Henry, William G. Rowhouse	57 Summer St	Somerville	c 1880
SMV.652		91 Summer St	Somerville	r 1855
SMV.220		104 Summer St	Somerville	1908
SMV.219	Homer, Jacob House	125 Summer St	Somerville	1848
SMV.653	Durell, Rev. George W. House	137 Summer St	Somerville	c 1865
SMV.654	Locke, Marshall House	139 Summer St	Somerville	c 1860
SMV.655	Rice, Charles F. House	143 Summer St	Somerville	c 1890
SMV.218	Haigh, John House	151 Summer St	Somerville	1891
SMV.98	Crane, Edward House	152 Summer St	Somerville	1895
SMV.1077	Cox, Edward F. - Polsey, Henry S. House	154 Summer St	Somerville	c 1890
SMV.1078	Somerset Chambers	156-158 Summer St	Somerville	r 1935
SMV.1079		162 Summer St	Somerville	c 1960
SMV.1080		166-168 Summer St	Somerville	c 1895
SMV.656	Howie, John House	170 Summer St	Somerville	c 1865
SMV.1082		172 Summer St	Somerville	c 1890
SMV.1083	Hayden, J. Orlin House	174 Summer St	Somerville	1899
SMV.217	Bradshaw, Charles House	175 Summer St	Somerville	1884
SMV.1084	Dolliver, Edwin C. House	176 Summer St	Somerville	c 1890
SMV.1085		184 Summer St	Somerville	c 1890
SMV.706	Texas Company Oils Building	360-366 Summer St	Somerville	c 1920
SMV.704	Highland Trust Company - Winter Hill Coop Bank	361-371 Summer St	Somerville	c 1930
SMV.732		379 Summer St	Somerville	c 1930
SMV.209	Rosebud, The	381 Summer St	Somerville	1941
SMV.1138	Jackman, Edward N. House	16-18 Summit Ave	Somerville	c 1871
SMV.278	Sylvester, John House	26 Summit Ave	Somerville	1885
SMV.445	Hopkins, James House	27 Summit Ave	Somerville	c 1890

Inv. No.	Property Name	Street	Town	Year
SMV.74		13 Summit St	Somerville	c 1890
SMV.480		15 Summit St	Somerville	c 1895
SMV.481	Nichols, John F. House	17 Summit St	Somerville	c 1890
SMV.71		12 Sunnyside St	Somerville	1880
SMV.72		14 Sunnyside St	Somerville	1880
SMV.73		16 Sunnyside St	Somerville	1880
SMV.920	Sycamore Street Bridge over B and M Railroad	Sycamore St	Somerville	1902
SMV.40	Russell, Susan House	58 Sycamore St	Somerville	r 1835
SMV.41	Tufts, Peter and Oliver House	78 Sycamore St	Somerville	c 1714
SMV.512	Hanscom, Edgar F. House	137 Sycamore St	Somerville	c 1884
SMV.325	Dempsey, Addis House	143 Sycamore St	Somerville	1899
SMV.516	Broadway Congregational Church Chapel	Sycamore Terr	Somerville	1867
SMV.515	Hill, William P. House	155 Sycamore Terr	Somerville	1891
SMV.1294		Sydney St	Somerville	c 1915
SMV.1307		32 Sydney St	Somerville	c 1916
SMV.1306		36 Sydney St	Somerville	c 1916
SMV.1303		40 Sydney St	Somerville	c 1916
SMV.1301		44 Sydney St	Somerville	c 1910
SMV.1302		46 Sydney St	Somerville	c 1910
SMV.1300		48-50 Sydney St	Somerville	c 1910
SMV.1299		52 Sydney St	Somerville	c 1910
SMV.1298		54 Sydney St	Somerville	c 1900
SMV.1297		56 Sydney St	Somerville	c 1910
SMV.1296		60 Sydney St	Somerville	c 1915
SMV.1295		64 Sydney St	Somerville	c 1910
SMV.675	Hillson, Hyman M. Tinware Factory	16 Taylor St	Somerville	c 1893
SMV.1		35 Temple St	Somerville	r 1765
SMV.34		65 Temple St	Somerville	c 1885
SMV.1249	Saint Polycarp's Roman Catholic Church	100 Temple St	Somerville	c 1927
SMV.1292		107 Temple St	Somerville	c 1920
SMV.1258	Saint Polycarp's Roman Catholic Church Rectory	114 Temple St	Somerville	c 1930
SMV.517		5-5A Tennyson St	Somerville	c 1900
SMV.326	Spinney, Lawrence House	45 Tennyson St	Somerville	1875
SMV.276		11 Thorpe St	Somerville	c 1830
SMV.446		22 Thorpe St	Somerville	c 1875
SMV.518	Mathison, Joseph House	21 Thurston St	Somerville	c 1885
SMV.1259	Saint Ann's Roman Catholic Church	50B Thurston St	Somerville	1881
SMV.1260	Saint Ann's Roman Catholic Church Parochial	50A Thurston St	Somerville	1916

Inv. No.	Property Name	Street	Town	Year
	School			
SMV.1261	Saint Ann's Roman Catholic Church Convent	50 Thurston St	Somerville	1923
SMV.99	Otis - Wyman House	67 Thurston St	Somerville	c 1883
SMV.419	Flynn, Michael House	4-6 Tremont Pl	Somerville	c 1884
SMV.485	Johnson, Phillip House	40 Trull St	Somerville	c 1870
SMV.486		45 Trull St	Somerville	c 1880
SMV.487		57 Trull St	Somerville	c 1815
SMV.1434	Plymouth Oil Company Building	2 Union Sq	Somerville	c 1955
SMV.1435	Kelligan Building	7-9 Union Sq	Somerville	c 1915
SMV.1436		11-13 Union Sq	Somerville	r 1890
SMV.690	Vinal, Robert Aldersey Jr House	15 Union Sq	Somerville	c 1845
SMV.760	Union Building	16-19 Union Sq	Somerville	c 1922
SMV.761	Hurley Building	20-29 Union Sq	Somerville	1932
SMV.762	Eberle, Phillip Building	31-33 1/2 Union Sq	Somerville	1884
SMV.1358	Cobb, Eberle Weston Building	35 Union Sq	Somerville	r 1880
SMV.773	Hill, Ira Building	38 Union Sq	Somerville	1874
SMV.1437	Reliable Market	45-50 Union Sq	Somerville	c 1976
SMV.1438		51-55 Union Sq	Somerville	c 1955
SMV.763	Stone Building - Barrister's Hall	61 Union Sq	Somerville	1888
SMV.1439		63-65 Union Sq	Somerville	c 1915
SMV.764	Somerville Police Headquarters	66-70 Union Sq	Somerville	1932
SMV.1440	Haskell, Otis Building	71-72 Union Sq	Somerville	c 1895
SMV.1441	Union Square Salvation Army Barracks	76 Union Sq	Somerville	c 1895
SMV.67	Union Square Fire Station - Hose Company No. 3	92 Union Sq	Somerville	1903
SMV.488	Pollard, Warren Quarry Worker Housing	13 Vernon St	Somerville	c 1845
SMV.750	Derby Desk Company Building	20 Vernon St	Somerville	1887
SMV.489	Pollard, Warren Quarry Worker Housing	38-40 Vernon St	Somerville	c 1870
SMV.738	Gavel, Harry Garage	55 Vernon St	Somerville	c 1910
SMV.490	Pollard, Warren Quarry Worker Housing	90-92 Vernon St	Somerville	c 1840
SMV.1250	Waugh, William Lindsay House	37 Victoria St	Somerville	1914
SMV.797	Somerville Charcoal Company	19-21 Village St	Somerville	c 1918
SMV.1251	McCarthy, Catherine E. House	21 Vinal Ave	Somerville	c 1890
SMV.42	Hammond, A. P. - Watson, J. Sumner House	42 Vinal Ave	Somerville	1884
SMV.287	Wellington, Lizzie House	45 Vinal Ave	Somerville	c 1875
SMV.286	Wellington, Lizzie House	47 Vinal Ave	Somerville	c 1875
SMV.288	Parker - Burnett House	48 Vinal Ave	Somerville	1873
SMV.43	Hailey, Fred House	49 Vinal Ave	Somerville	1895

Inv. No.	Property Name	Street	Town	Year
SMV.44	Wright House	54 Vinal Ave	Somerville	c 1895
SMV.299		56 Vinal Ave	Somerville	1913
SMV.64	Southern Junior High School	8 Vinal St	Somerville	1930
SMV.458		11 Vinal St	Somerville	
SMV.289	Parker, Silas House	50 Vinal St	Somerville	1873
SMV.436	Pond, S. H. House	58 Vinal St	Somerville	c 1880
SMV.795		21-29 Vine St	Somerville	c 1930
SMV.796	Bailie Basket Company	100 Vine St	Somerville	c 1920
SMV.925	Walnut Street Bridge over B & M Railroad	Walnut St	Somerville	1894
SMV.459	Sturtevant, Richard Apartment House	3-5 Walnut St	Somerville	c 1890
SMV.236	Somerville Journal Building	8-10 Walnut St	Somerville	1894
SMV.1442	Sturtevant, Richard and Martha House	15 Walnut St	Somerville	r 1890
SMV.460	Somerville District Court House	19 Walnut St	Somerville	1925
SMV.1443	White, Dr. Michael W. and Elizabeth House	21 Walnut St	Somerville	c 1913
SMV.1444	Blaikie, Luther House	22 Walnut St	Somerville	c 1895
SMV.56	Blaikie, Luther and Eva M. House	24 Walnut St	Somerville	c 1889
SMV.1445	Sturtevant, Martha and Richard Three-Decker	25 Walnut St	Somerville	c 1915
SMV.1446	Sturtevant, Martha and Richard Three-Decker	27 Walnut St	Somerville	c 1915
SMV.57	Munroe, Robert House	37 Walnut St	Somerville	c 1849
SMV.58	Brooks, Elbridge Streeter House	44 Walnut St	Somerville	1887
SMV.59	Niles, Louville House	45 Walnut St	Somerville	1890
SMV.60	Hollander Block, The	56-58 Walnut St	Somerville	1895
SMV.297		60 Walnut St	Somerville	1935
SMV.298	Thorpe, Eliza House	63 Walnut St	Somerville	c 1870
SMV.1253	Folsom, Abraham - Duxbury, Caleb House	67 Walnut St	Somerville	c 1860
SMV.751	Kemp Nut Company	98-100 Walnut St	Somerville	1918
SMV.519	Veazie, William House	133 Walnut St	Somerville	c 1870
SMV.317	Ayre, John House	141 Walnut St	Somerville	c 1870
SMV.520	Fuller, Stephen W. House	151 Walnut St	Somerville	1861
SMV.422	Sullivan, D. House	32 Ward St	Somerville	r 1860
SMV.1255	Weinheimer, John - Murphy, Michael F. House	9 Warner St	Somerville	1905
SMV.260	Almy, Benjamin - Ellis, Frank House	24 Warren Ave	Somerville	1874
SMV.259	Thompson, Benjamin - Shattuck, Francelia M. House	26 Warren Ave	Somerville	c 1875
SMV.261	Baxter, George L. House	27 Warren Ave	Somerville	1874
SMV.258	Munroe, Emery H. House	28 Warren Ave	Somerville	c 1875
SMV.262	Hines, Richard A. House	29 Warren Ave	Somerville	1873
SMV.257	Lovejoy, Alvan L. House	30 Warren Ave	Somerville	1871

Inv. No.	Property Name	Street	Town	Year
SMV.263	Sturtevant, Hazen House	31 Warren Ave	Somerville	1873
SMV.256	Ambrose, John L. House	32 Warren Ave	Somerville	c 1880
SMV.264	Kimball, George A. House	33 Warren Ave	Somerville	1877
SMV.423	Quinn, William House and Store	51 Warren St	Somerville	c 1860
SMV.536		Warwick St	Somerville	r 1860
SMV.537	Boston Brick Company Boarding House	26 Warwick St	Somerville	c 1870
SMV.613		4 Washington Ave	Somerville	r 1820
SMV.907	B and M Railroad Bridge over Washington Street	Washington St	Somerville	1928
SMV.941	Washington Street Bridge over B & M Railroad	Washington St	Somerville	r 1915
SMV.303	Buddy's Truck Stop	113 Washington St	Somerville	1929
SMV.12	Ireland, Samuel House	117 Washington St	Somerville	c 1792
SMV.758		157-161 Washington St	Somerville	c 1902
SMV.759		163-179 Washington St	Somerville	c 1927
SMV.462	Holt, Samuel House	197 Washington St	Somerville	c 1860
SMV.463	Kidder, Andrew B. and Sarah House	198 Washington St	Somerville	c 1869
SMV.1447	Knapp, Oren S. Building	205 Washington St	Somerville	c 1874
SMV.1361	Allen, Hannah J. Building	208-210 Washington St	Somerville	c 1890
SMV.238	Walker, William House	215 Washington St	Somerville	c 1865
SMV.676	Boston Elevated Railway - MBTA Bus Garage	228 Washington St	Somerville	1926
SMV.1448	Union Gulf Service Station	231 Washington St	Somerville	1955
SMV.10	U. S. Post Office - Somerville Main Branch	237 Washington St	Somerville	1936
SMV.1449		249 Washington St	Somerville	r 1915
SMV.1450		255 Washington St	Somerville	c 1915
SMV.1451	Jackson, Dr. Eben House and Doctor Office	261-263 Washington St	Somerville	r 1863
SMV.424	Burt, William House	264 Washington St	Somerville	c 1865
SMV.1452	McCrillis, George S. and Catharine Bryden House	265 Washington St	Somerville	r 1863
SMV.425	Saint Joseph's Boys' Roman Catholic Church Parochial School	268 Washington St	Somerville	1893
SMV.426	Ashley, John E. and Sarah House	269 Washington St	Somerville	c 1870
SMV.1453	Maguire, Thomas F. and Sarah House	273 Washington St	Somerville	c 1874
SMV.232	Smith, John House	275-277 Washington St	Somerville	c 1870
SMV.678	Brown, I. H. Moulding Company	285 Washington St	Somerville	r 1885
SMV.1254	Saint Joseph's Roman Catholic Church	294 Washington St	Somerville	1871
SMV.677	Fresh Pond Ice Company	321 Washington St	Somerville	c 1892
SMV.427	Leland, John House	377 Washington St	Somerville	r 1865
SMV.13	Schuebeler, Charles House	384 Washington St	Somerville	c 1860
SMV.428	Devine, Michael H. Building	388 Washington St	Somerville	c 1890

Inv. No.	Property Name	Street	Town	Year
SMV.1028	Devine, Michael H. Building	392 Washington St	Somerville	c 1890
SMV.782		406 Washington St	Somerville	c 1888
SMV.781		415-427 Washington St	Somerville	1932
SMV.1256	Clough, Elmer Three-Decker	27-29 Waterhouse St	Somerville	1919
SMV.538	Wentworth, L. Roger House	16 Watson St	Somerville	c 1900
SMV.924	Webster - Newton Street Bridge over B & M Railroad	Webster Ave	Somerville	1911
SMV.1454	Saint Joseph's Girls' Roman Catholic Church Parochial School	15 Webster Ave	Somerville	1963
SMV.1455	Dimond, Lydia A. Three-Decker	16 Webster Ave	Somerville	c 1887
SMV.1456	Dimond, Lydia A. Three-Decker	18 Webster Ave	Somerville	c 1887
SMV.1457	Saint Joseph's Girls' Roman Catholic Church Parochial School Annex	24 Webster Ave	Somerville	1921
SMV.1458	Pierce, C. House	32 Webster Ave	Somerville	r 1863
SMV.789	Canny, Michael J. Used Cars Dealership	45 Webster Ave	Somerville	1924
SMV.787	O'Neill, J. P. Coal Company Truck Garage	62 Webster Ave	Somerville	1924
SMV.614	Edgerly, John S. House	1 Webster St	Somerville	1851
SMV.615	Junkins, R. F. House	27 Webster St	Somerville	c 1850
SMV.14	Somerville Historical Society	1 Westwood Rd	Somerville	c 1925
SMV.15	Berry - Kelley House	2 Westwood Rd	Somerville	c 1900
SMV.16	Sibley, Edwin D. House	3 Westwood Rd	Somerville	c 1895
SMV.1091		5 Westwood Rd	Somerville	c 1898
SMV.1092		6 Westwood Rd	Somerville	c 1910
SMV.1093	Bradshaw, Charles H. House	7 Westwood Rd	Somerville	1899
SMV.17	Newton, Elbridge W. House	8 Westwood Rd	Somerville	c 1896
SMV.1094		9 Westwood Rd	Somerville	c 1898
SMV.1095		10 Westwood Rd	Somerville	
SMV.1096		11 Westwood Rd	Somerville	c 1900
SMV.1097		12 Westwood Rd	Somerville	c 1900
SMV.1098		14 Westwood Rd	Somerville	c 1900
SMV.1099		15 Westwood Rd	Somerville	c 1900
SMV.1100		16 Westwood Rd	Somerville	c 1910
SMV.1101		17 Westwood Rd	Somerville	c 1900
SMV.1102		18 Westwood Rd	Somerville	c 1900
SMV.1328		25 Wheatland St	Somerville	c 1885
SMV.1327		29 Wheatland St	Somerville	c 1885
SMV.1325		30 Wheatland St	Somerville	c 1900
SMV.1326		31-33 Wheatland St	Somerville	c 1885
SMV.1324		34 Wheatland St	Somerville	c 1890

Inv. No.	Property Name	Street	Town	Year
SMV.616		14 Wheeler St	Somerville	c 1895
SMV.1257	Littlefield, H. L. Three-Decker	20 Wheeler St	Somerville	1899
SMV.657		28-30 White St	Somerville	c 1845
SMV.482	Wilmont, Charles W. House	11 William St	Somerville	c 1890
SMV.76		1 Williams Ct	Somerville	c 1855
SMV.77		2 Williams Ct	Somerville	c 1855
SMV.78		5 Williams Ct	Somerville	c 1855
SMV.79		6 Williams Ct	Somerville	c 1855
SMV.80		7 Williams Ct	Somerville	c 1855
SMV.81		8 Williams Ct	Somerville	c 1855
SMV.82		11 Williams Ct	Somerville	c 1855
SMV.83		12 Williams Ct	Somerville	c 1855
SMV.658	Fiske, Benjamin M. House	46 Willow Ave	Somerville	c 1875
SMV.679	Somerville Electric Light Generating Station	106 Willow Ave	Somerville	1887
SMV.1116	Brown, Benjamin G. Elementary School	199 Willow Ave	Somerville	1900
SMV.725	Smith, Walter S. Auto Company	80-84 Winslow Ave	Somerville	c 1912
SMV.339	Walker Garage	88 Winslow Ave	Somerville	1911
SMV.539	Hill, Ira House	21 Winter St	Somerville	c 1870

**ATTACHMENT G:
ENDANGERED SPECIES ACT DOCUMENTATION**

IPaC resource list

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

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

Location

Middlesex County, Massachusetts



Local office

New England Ecological Services Field Office

☎ (603) 223-2541

📅 (603) 223-0104

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

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

Endangered species

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

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

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

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

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

Listed species¹ and their critical habitats are managed by the [Ecological Services Program](#) of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries²).

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

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

THERE ARE NO ENDANGERED SPECIES EXPECTED TO OCCUR AT THIS LOCATION.

Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act¹ and the Bald and Golden Eagle Protection Act².

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

1. The [Migratory Birds Treaty Act](#) of 1918.
2. The [Bald and Golden Eagle Protection Act](#) of 1940.

Additional information can be found using the following links:

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

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

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

NAME

BREEDING SEASON (IF A BREEDING SEASON IS INDICATED FOR A BIRD ON YOUR LIST, THE BIRD MAY BREED IN YOUR PROJECT AREA SOMETIME WITHIN THE TIMEFRAME SPECIFIED, WHICH IS A VERY LIBERAL ESTIMATE OF THE DATES INSIDE WHICH THE BIRD BREEDS ACROSS ITS ENTIRE RANGE.

"BREEDS ELSEWHERE" INDICATES
 THAT THE BIRD DOES NOT LIKELY
 BREED IN YOUR PROJECT AREA.)

<p>Bald Eagle <i>Haliaeetus leucocephalus</i> This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1626</p>	Breeds Oct 15 to Aug 31
<p>Black-billed Cuckoo <i>Coccyzus erythrophthalmus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9399</p>	Breeds May 15 to Oct 10
<p>Bobolink <i>Dolichonyx oryzivorus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.</p>	Breeds May 20 to Jul 31
<p>Canada Warbler <i>Cardellina canadensis</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.</p>	Breeds May 20 to Aug 10
<p>Cerulean Warbler <i>Dendroica cerulea</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/2974</p>	Breeds Apr 29 to Jul 20
<p>Dunlin <i>Calidris alpina arctica</i> This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA</p>	Breeds elsewhere
<p>Evening Grosbeak <i>Coccothraustes vespertinus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.</p>	Breeds elsewhere
<p>Kentucky Warbler <i>Oporornis formosus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.</p>	Breeds Apr 20 to Aug 20
<p>Lesser Yellowlegs <i>Tringa flavipes</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9679</p>	Breeds elsewhere

<p>Nelson's Sparrow <i>Ammodramus nelsoni</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.</p>	Breeds May 15 to Sep 5
<p>Prairie Warbler <i>Dendroica discolor</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.</p>	Breeds May 1 to Jul 31
<p>Prothonotary Warbler <i>Protonotaria citrea</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.</p>	Breeds Apr 1 to Jul 31
<p>Red-headed Woodpecker <i>Melanerpes erythrocephalus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.</p>	Breeds May 10 to Sep 10
<p>Red-throated Loon <i>Gavia stellata</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.</p>	Breeds elsewhere
<p>Rusty Blackbird <i>Euphagus carolinus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.</p>	Breeds elsewhere
<p>Semipalmated Sandpiper <i>Calidris pusilla</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.</p>	Breeds elsewhere
<p>Snowy Owl <i>Bubo scandiacus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.</p>	Breeds elsewhere
<p>Wood Thrush <i>Hylocichla mustelina</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.</p>	Breeds May 10 to Aug 31

Probability of Presence Summary

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

Probability of Presence (■)

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

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

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

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

Breeding Season (■)

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

Survey Effort (|)

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

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

No Data (-)

A week is marked as having no data if there were no survey events for that week.

Survey Timeframe

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

■ probability of presence ■ breeding season | survey effort - no data

SPECIES JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC

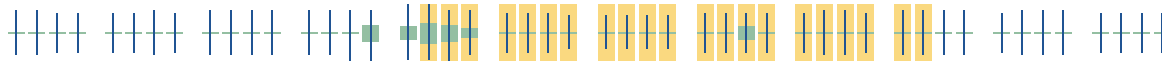
Bald Eagle

Non-BCC Vulnerable
(This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.)



Black-billed Cuckoo

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



Bobolink

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



Canada Warbler

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



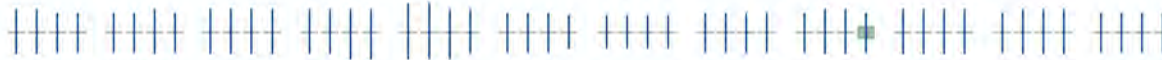
Cerulean Warbler

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



Dunlin

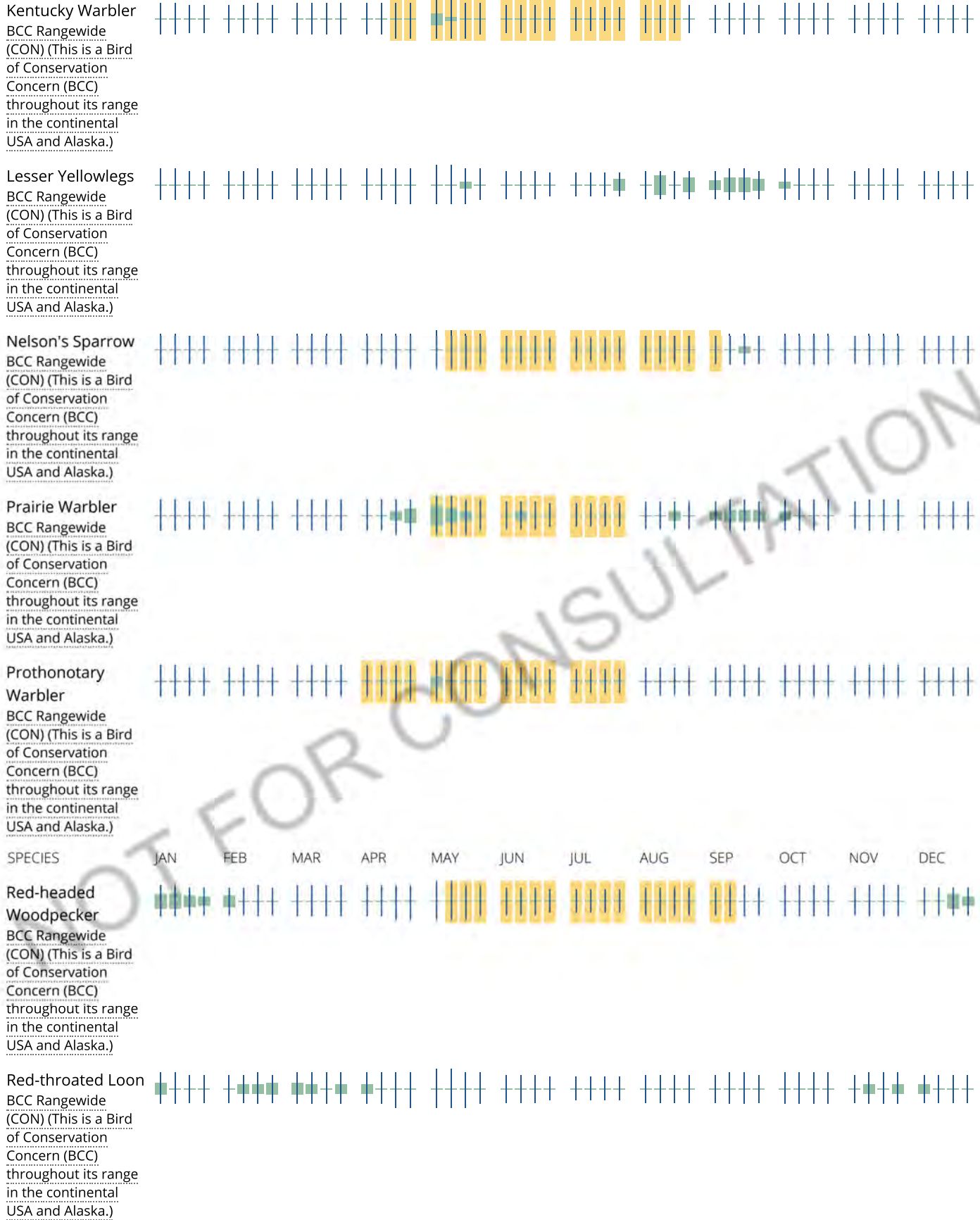
BCC - BCR (This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA)



Evening Grosbeak

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





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



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



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



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



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

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

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

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

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

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

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

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

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

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

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

What are the levels of concern for migratory birds?

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

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

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

Details about birds that are potentially affected by offshore projects

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

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

What if I have eagles on my list?

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

Proper Interpretation and Use of Your Migratory Bird Report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

Facilities

National Wildlife Refuge lands

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

THERE ARE NO REFUGE LANDS AT THIS LOCATION.

Fish hatcheries

THERE ARE NO FISH HATCHERIES AT THIS LOCATION.

Wetlands in the National Wetlands Inventory

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

For more information please contact the Regulatory Program of the local [U.S. Army Corps of Engineers District](#).

THERE ARE NO KNOWN WETLANDS AT THIS LOCATION.

Data limitations

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

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

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

Data exclusions

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

Data precautions

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

**ATTACHMENT H:
TMDL INFORMATION**

Massachusetts Category 5 Waters "Waters requiring a TMDL"

NAME	SEGMENT ID	DESCRIPTION	SIZE	UNITS	IMPAIRMENT CAUSE	EPA TMDL NO.
Mystic River	MA71-03	Amelia Earhart Dam, Somerville/Everett to confluence with Boston Inner Harbor, Chelsea/Charlestown (Includes Island End River).	0.49	SQUARE MILES	Ammonia (Un-ionized)	
					Fecal Coliform	
					Foam/Flocs/Scum/Oil Slicks	
					Other	
					Oxygen, Dissolved	
					PCB in Fish Tissue	
					Petroleum Hydrocarbons	
					Sediment Screening Value (Exceedence)	
					Taste and Odor	
Spy Pond	MA71040	Arlington	98	ACRES	(Eurasian Water Milfoil, Myriophyllum spicatum*)	
					Chlordane	
					DDT	
					Excess Algal Growth	
					Oxygen, Dissolved	
					Phosphorus (Total)	
Unnamed Tributary	MA71-13	Unnamed tributary locally known as 'Meetinghouse Brook', from emergence south of Route 16/east of Winthrop Street, Medford to confluence with the Mystic River, Medford. (brook not apparent on 1985 Boston North USGS quad - 2005 orthophotos used to delineate stream)	0.1	MILES	Escherichia coli	
Upper Mystic Lake	MA71043	Winchester/Arlington/Medford	176	ACRES	(Non-Native Aquatic Plants*)	
					Dissolved oxygen saturation	
					Oxygen, Dissolved	
Wedge Pond	MA71045	Winchester	23	ACRES	Oxygen, Dissolved	
					Phosphorus (Total)	
Winn Brook	MA71-09	Headwaters near Juniper Road and the Belmont Hill School, Belmont to confluence with Little Pond, Belmont (portions culverted underground).	1.4	MILES	(Physical substrate habitat alterations*)	
					Escherichia coli	
Winter Pond	MA71047	Winchester	18	ACRES	(Non-Native Aquatic Plants*)	
					Nutrient/Eutrophication Biological Indicators	
Boston Harbor: Neponset						
Beaver Brook	MA73-19	Headwaters near Moose Hill Street, Sharon through Sawmill Pond to confluence with Massapoag Brook, Sharon.	3.5	MILES	Aquatic Macroinvertebrate Bioassessments	
					Oxygen, Dissolved	
Beaver Meadow Brook	MA73-20	Outlet of Glenn Echo Pond, Stoughton, to the inlet of Bolivar Pond, Canton.	3.3	MILES	Oxygen, Dissolved	



**ATTACHMENT I:
LABORATORY ANALYTICAL REPORTS**

October 1, 2019

Benjamin Sivonen
Vertex Engineering - Boston
100 North Washington St. Suite 302
Boston, MA 02114

Project Location: Somerville, MA
Client Job Number:
Project Number: 48522
Laboratory Work Order Number: 19I1152

Enclosed are results of analyses for samples received by the laboratory on September 23, 2019. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, reading "Jessica Hoffman", is displayed on a light blue rectangular background. The signature is written in a cursive, flowing style.

Jessica L. Hoffman
Project Manager

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

Vertex Engineering - Boston
 100 North Washington St. Suite 302
 Boston, MA 02114
 ATTN: Benjamin Sivonen

REPORT DATE: 10/1/2019

PURCHASE ORDER NUMBER:

PROJECT NUMBER: 48522

ANALYTICAL SUMMARY

WORK ORDER NUMBER: 1911152

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

PROJECT LOCATION: Somerville, MA

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
X--INF-19-09-23	1911152-01	Ground Water		608.3	MA M-MA-086/CT PH-0574/NY11148
				624.1	
				625.1	
				EPA 1664B	
				EPA 200.7	
				EPA 200.8	
				EPA 245.1	
				EPA 300.0	
				EPA 420.1	
				SM19-22 4500 NH3 C	
				SM21-22 2540D	
				SM21-22 3500 Cr B	
				SM21-22 4500 CL G	
				SM21-22 4500 CN E	
X-REC-19-09-23	1911152-02	Ground Water		Tri Chrome Calc.	MA M-MA-086/CT PH-0574/NY11148
				608.3	
				624.1	
				625.1	
				EPA 1664B	
				EPA 200.7	
				EPA 200.8	
				EPA 245.1	
				EPA 300.0	
				EPA 420.1	
				SM19-22 4500 NH3 C	
				SM21-22 2540D	
				SM21-22 3500 Cr B	
				SM21-22 4500 CL G	
SM21-22 4500 CN E					
				Tri Chrome Calc.	MA M-MA-086/CT PH-0574/NY11148

CASE NARRATIVE SUMMARY

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

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

624.1

Qualifications:**L-01**

Laboratory fortified blank /laboratory control sample recovery outside of control limits. Data validation is not affected since all results are "not detected" for all samples in this batch for this compound and bias is on the high side.

Analyte & Samples(s) Qualified:**Ethanol**

B241411-BS1

L-05

Laboratory fortified blank/laboratory control sample recovery is outside of control limits. Reported value for this compound is likely to be biased on the high side.

Analyte & Samples(s) Qualified:**1,4-Dioxane**

B241411-BS1

625.1

Qualifications:**S-07**

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

Analyte & Samples(s) Qualified:**2,4,6-Tribromophenol**

1911152-01[X--INF-19-09-23], B241415-BS1, B241415-BSD1

Nitrobenzene-d5

B241415-BSD1

V-05

Continuing calibration verification (CCV) did not meet method specifications and was biased on the low side for this compound.

Analyte & Samples(s) Qualified:**Hexachloroethane**

S040770-CCV1

V-35

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

Analyte & Samples(s) Qualified:**Benzidine**

S040770-CCV1, S040852-CCV1

EPA 245.1

Qualifications:**L-03**

Laboratory fortified blank/laboratory control sample recovery is outside of control limits. Reported value for this compound is likely to be biased on the low side.

Analyte & Samples(s) Qualified:**Mercury**

B241787-BS1

SM21-22 4500 CL G

Qualifications:**Z-01**

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

Analyte & Samples(s) Qualified:**Chlorine, Residual**

1911152-01[X--INF-19-09-23], 1911152-02[X-REC-19-09-23], B241276-BLK1, B241276-BS1, B241276-BSD1, B241276-DUP1, B241276-MS1

The results of analyses reported only relate to samples submitted to the Con-Test Analytical Laboratory for testing.

I certify that the analyses listed above, unless specifically listed as subcontracted, if any, were performed under my direction according to the approved methodologies listed in this document, and that based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

A handwritten signature in black ink, appearing to read "Lisa A. Worthington", is written over a light gray rectangular background.

Lisa A. Worthington
Technical Representative

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

Project Location: Somerville, MA

Sample Description:

Work Order: 191152

Date Received: 9/23/2019

Field Sample #: X--INF-19-09-23

Sampled: 9/23/2019 10:30

Sample ID: 191152-01

Sample Matrix: Ground Water

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acetone	<50.0	50.0	3.79	µg/L	1		624.1	9/25/19	9/26/19 4:41	LBD
tert-Amyl Methyl Ether (TAME)	<0.500	0.500	0.140	µg/L	1		624.1	9/25/19	9/26/19 4:41	LBD
Benzene	<1.00	1.00	0.180	µg/L	1		624.1	9/25/19	9/26/19 4:41	LBD
tert-Butyl Alcohol (TBA)	<20.0	20.0	4.17	µg/L	1		624.1	9/25/19	9/26/19 4:41	LBD
Carbon Tetrachloride	<2.00	2.00	0.110	µg/L	1		624.1	9/25/19	9/26/19 4:41	LBD
1,2-Dichlorobenzene	<2.00	2.00	0.160	µg/L	1		624.1	9/25/19	9/26/19 4:41	LBD
1,3-Dichlorobenzene	<2.00	2.00	0.120	µg/L	1		624.1	9/25/19	9/26/19 4:41	LBD
1,4-Dichlorobenzene	<2.00	2.00	0.130	µg/L	1		624.1	9/25/19	9/26/19 4:41	LBD
cis-1,2-Dichloroethylene	<1.00	1.00	0.130	µg/L	1		624.1	9/25/19	9/26/19 4:41	LBD
1,1-Dichloroethane	<2.00	2.00	0.160	µg/L	1		624.1	9/25/19	9/26/19 4:41	LBD
1,1-Dichloroethylene	<2.00	2.00	0.320	µg/L	1		624.1	9/25/19	9/26/19 4:41	LBD
trans-1,2-Dichloroethylene	<2.00	2.00	0.310	µg/L	1		624.1	9/25/19	9/26/19 4:41	LBD
1,4-Dioxane	<50.0	50.0	22.5	µg/L	1		624.1	9/25/19	9/26/19 4:41	LBD
Ethanol	<100	100	10.5	µg/L	1		624.1	9/25/19	9/26/19 4:41	LBD
Ethylbenzene	<2.00	2.00	0.130	µg/L	1		624.1	9/25/19	9/26/19 4:41	LBD
Methyl tert-Butyl Ether (MTBE)	<2.00	2.00	0.250	µg/L	1		624.1	9/25/19	9/26/19 4:41	LBD
Methylene Chloride	<5.00	5.00	0.340	µg/L	1		624.1	9/25/19	9/26/19 4:41	LBD
Tetrachloroethylene	<2.00	2.00	0.180	µg/L	1		624.1	9/25/19	9/26/19 4:41	LBD
Toluene	0.200	1.00	0.140	µg/L	1		624.1	9/25/19	9/26/19 4:41	LBD
1,1,1-Trichloroethane	<2.00	2.00	0.200	µg/L	1		624.1	9/25/19	9/26/19 4:41	LBD
1,1,2-Trichloroethane	<2.00	2.00	0.160	µg/L	1		624.1	9/25/19	9/26/19 4:41	LBD
Trichloroethylene	<2.00	2.00	0.240	µg/L	1		624.1	9/25/19	9/26/19 4:41	LBD
Xylenes (total)	<3.00	3.00		µg/L	1		624.1	9/25/19	9/26/19 4:41	LBD
Vinyl Chloride	<2.00	2.00	0.450	µg/L	1		624.1	9/25/19	9/26/19 4:41	LBD
m+p Xylene	0.360	2.00	0.300	µg/L	1		624.1	9/25/19	9/26/19 4:41	LBD
o-Xylene	0.210	2.00	0.170	µg/L	1		624.1	9/25/19	9/26/19 4:41	LBD

Surrogates	% Recovery	Recovery Limits	Flag/Qual
1,2-Dichloroethane-d4	104	70-130	9/26/19 4:41
Toluene-d8	107	70-130	9/26/19 4:41
4-Bromofluorobenzene	100	70-130	9/26/19 4:41

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

Project Location: Somerville, MA

Sample Description:

Work Order: 191152

Date Received: 9/23/2019

Field Sample #: X--INF-19-09-23

Sampled: 9/23/2019 10:30

Sample ID: 191152-01

Sample Matrix: Ground Water

Semivolatile Organic Compounds by GC/MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Benzo(a)anthracene (SIM)	<0.050	0.050	0.016	µg/L	1		625.1	9/25/19	9/27/19 15:00	CLA
Benzo(a)pyrene (SIM)	<0.10	0.10	0.012	µg/L	1		625.1	9/25/19	9/27/19 15:00	CLA
Benzo(b)fluoranthene (SIM)	<0.050	0.050	0.015	µg/L	1		625.1	9/25/19	9/27/19 15:00	CLA
Benzo(k)fluoranthene (SIM)	<0.20	0.20	0.012	µg/L	1		625.1	9/25/19	9/27/19 15:00	CLA
Bis(2-ethylhexyl)phthalate (SIM)	0.58	1.0	0.43	µg/L	1	J	625.1	9/25/19	9/27/19 15:00	CLA
Chrysene (SIM)	<0.20	0.20	0.015	µg/L	1		625.1	9/25/19	9/27/19 15:00	CLA
Dibenz(a,h)anthracene (SIM)	<0.10	0.10	0.017	µg/L	1		625.1	9/25/19	9/27/19 15:00	CLA
Indeno(1,2,3-cd)pyrene (SIM)	<0.10	0.10	0.018	µg/L	1		625.1	9/25/19	9/27/19 15:00	CLA
Pentachlorophenol (SIM)	<1.0	1.0	0.33	µg/L	1		625.1	9/25/19	9/27/19 15:00	CLA
Pyrene (SIM)	0.034	1.0	0.023	µg/L	1	J	625.1	9/25/19	9/27/19 15:00	CLA
Surrogates	% Recovery		Recovery Limits		Flag/Qual					
2-Fluorophenol (SIM)	49.2		15-110						9/27/19 15:00	
Phenol-d6 (SIM)	36.2		15-110						9/27/19 15:00	
Nitrobenzene-d5	80.7		30-130						9/27/19 15:00	
2-Fluorobiphenyl	59.4		30-130						9/27/19 15:00	
2,4,6-Tribromophenol (SIM)	105		15-110						9/27/19 15:00	
p-Terphenyl-d14	72.3		30-130						9/27/19 15:00	

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

Project Location: Somerville, MA

Sample Description:

Work Order: 1911152

Date Received: 9/23/2019

Field Sample #: X--INF-19-09-23

Sampled: 9/23/2019 10:30

Sample ID: 1911152-01

Sample Matrix: Ground Water

Semivolatle Organic Compounds by - GC/MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acenaphthene	<5.00	5.00	2.43	µg/L	1		625.1	9/25/19	9/27/19 11:55	KLB
Acenaphthylene	<5.00	5.00	2.38	µg/L	1		625.1	9/25/19	9/27/19 11:55	KLB
Anthracene	<5.00	5.00	2.71	µg/L	1		625.1	9/25/19	9/27/19 11:55	KLB
Benzo(g,h,i)perylene	<5.00	5.00	3.37	µg/L	1		625.1	9/25/19	9/27/19 11:55	KLB
Fluoranthene	<5.00	5.00	2.35	µg/L	1		625.1	9/25/19	9/27/19 11:55	KLB
Fluorene	<5.00	5.00	2.47	µg/L	1		625.1	9/25/19	9/27/19 11:55	KLB
Naphthalene	<5.00	5.00	2.66	µg/L	1		625.1	9/25/19	9/27/19 11:55	KLB
Pentachlorophenol	<10.0	10.0	8.06	µg/L	1		625.1	9/25/19	9/27/19 11:55	KLB
Phenanthrene	<5.00	5.00	2.74	µg/L	1		625.1	9/25/19	9/27/19 11:55	KLB
Pyrene	<5.00	5.00	3.52	µg/L	1		625.1	9/25/19	9/27/19 11:55	KLB
Surrogates	% Recovery		Recovery Limits		Flag/Qual					
2-Fluorophenol	52.1		15-110				9/27/19 11:55			
Phenol-d6	36.4		15-110				9/27/19 11:55			
Nitrobenzene-d5	84.6		30-130				9/27/19 11:55			
2-Fluorobiphenyl	86.2		30-130				9/27/19 11:55			
2,4,6-Tribromophenol	127 *		15-110		S-07		9/27/19 11:55			
p-Terphenyl-d14	110		30-130				9/27/19 11:55			

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

Project Location: Somerville, MA

Sample Description:

Work Order: 191152

Date Received: 9/23/2019

Field Sample #: X--INF-19-09-23

Sampled: 9/23/2019 10:30

Sample ID: 191152-01

Sample Matrix: Ground Water

Polychlorinated Biphenyls By GC/ECD

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	<0.143	0.143		µg/L	1		608.3	9/26/19	9/28/19 13:19	JMB
Aroclor-1221 [1]	<0.143	0.143		µg/L	1		608.3	9/26/19	9/28/19 13:19	JMB
Aroclor-1232 [1]	<0.143	0.143		µg/L	1		608.3	9/26/19	9/28/19 13:19	JMB
Aroclor-1242 [1]	<0.143	0.143		µg/L	1		608.3	9/26/19	9/28/19 13:19	JMB
Aroclor-1248 [1]	<0.143	0.143		µg/L	1		608.3	9/26/19	9/28/19 13:19	JMB
Aroclor-1254 [1]	<0.143	0.143		µg/L	1		608.3	9/26/19	9/28/19 13:19	JMB
Aroclor-1260 [1]	<0.143	0.143		µg/L	1		608.3	9/26/19	9/28/19 13:19	JMB

Surrogates	% Recovery	Recovery Limits	Flag/Qual
Decachlorobiphenyl [1]	79.8	30-150	
Decachlorobiphenyl [2]	80.9	30-150	
Tetrachloro-m-xylene [1]	70.9	30-150	
Tetrachloro-m-xylene [2]	74.0	30-150	

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

Project Location: Somerville, MA

Sample Description:

Work Order: 191152

Date Received: 9/23/2019

Field Sample #: X--INF-19-09-23

Sampled: 9/23/2019 10:30

Sample ID: 191152-01

Sample Matrix: Ground Water

Metals Analyses (Total)

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Antimony	ND	1.0		µg/L	1		EPA 200.8	9/25/19	9/26/19 11:03	QNW
Arsenic	2.0	0.80		µg/L	1		EPA 200.8	9/25/19	9/26/19 11:03	QNW
Cadmium	ND	0.20		µg/L	1		EPA 200.8	9/25/19	9/26/19 11:03	QNW
Chromium	1.3	1.0		µg/L	1		EPA 200.8	9/25/19	9/26/19 11:03	QNW
Chromium, Trivalent	0.0013			mg/L	1		Tri Chrome Calc.	9/25/19	9/26/19 11:03	QNW
Copper	10	1.0		µg/L	1		EPA 200.8	9/25/19	9/26/19 11:03	QNW
Iron	1.6	0.050		mg/L	1		EPA 200.7	9/25/19	9/25/19 22:54	MJH
Lead	1.1	0.50		µg/L	1		EPA 200.8	9/25/19	9/26/19 11:03	QNW
Mercury	ND	0.00010		mg/L	1		EPA 245.1	9/30/19	9/30/19 14:31	CJV
Nickel	6.1	5.0		µg/L	1		EPA 200.8	9/25/19	9/26/19 11:03	QNW
Selenium	4.8	5.0	1.6	µg/L	1	J	EPA 200.8	9/25/19	9/26/19 11:03	QNW
Silver	ND	0.20		µg/L	1		EPA 200.8	9/25/19	9/26/19 11:03	QNW
Zinc	14	10		µg/L	1		EPA 200.8	9/25/19	9/26/19 11:03	QNW

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

Project Location: Somerville, MA

Sample Description:

Work Order: 191152

Date Received: 9/23/2019

Field Sample #: X--INF-19-09-23

Sampled: 9/23/2019 10:30

Sample ID: 191152-01

Sample Matrix: Ground Water

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

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Chloride	1100	100		mg/L	100		EPA 300.0	9/27/19	9/27/19 18:05	MMH
Chlorine, Residual	ND	0.020		mg/L	1	Z-01	SM21-22 4500 CL G	9/23/19	9/23/19 19:50	MJG
Hexavalent Chromium	ND	0.0040		mg/L	1		SM21-22 3500 Cr B	9/23/19	9/23/19 19:50	IS
Phenol	0.057	0.050		mg/L	1		EPA 420.1	9/26/19	9/30/19 11:45	LL
Total Suspended Solids	12	0.83		mg/L	1		SM21-22 2540D	9/25/19	9/25/19 12:25	LL
Silica Gel Treated HEM (SGT-HEM)	ND	1.4		mg/L	1		EPA 1664B	9/25/19	9/25/19 12:20	LL

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

Project Location: Somerville, MA

Sample Description:

Work Order: 191152

Date Received: 9/23/2019

Field Sample #: X--INF-19-09-23

Sampled: 9/23/2019 10:30

Sample ID: 191152-01

Sample Matrix: Ground Water

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

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Ammonia as N	2.35	0.075	0.024	mg/L	1		121,4500NH3-BH		9/30/19 20:25	AAL
Cyanide	ND	0.005	0.001	mg/L	1		121,4500CN-CE		9/25/19 16:18	AAL

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

Project Location: Somerville, MA

Sample Description:

Work Order: 191152

Date Received: 9/23/2019

Field Sample #: X-REC-19-09-23

Sampled: 9/23/2019 11:30

Sample ID: 191152-02

Sample Matrix: Ground Water

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acetone	<50.0	50.0	3.79	µg/L	1		624.1	9/25/19	9/26/19 4:10	LBD
tert-Amyl Methyl Ether (TAME)	<0.500	0.500	0.140	µg/L	1		624.1	9/25/19	9/26/19 4:10	LBD
Benzene	<1.00	1.00	0.180	µg/L	1		624.1	9/25/19	9/26/19 4:10	LBD
tert-Butyl Alcohol (TBA)	<20.0	20.0	4.17	µg/L	1		624.1	9/25/19	9/26/19 4:10	LBD
Carbon Tetrachloride	<2.00	2.00	0.110	µg/L	1		624.1	9/25/19	9/26/19 4:10	LBD
1,2-Dichlorobenzene	<2.00	2.00	0.160	µg/L	1		624.1	9/25/19	9/26/19 4:10	LBD
1,3-Dichlorobenzene	<2.00	2.00	0.120	µg/L	1		624.1	9/25/19	9/26/19 4:10	LBD
1,4-Dichlorobenzene	<2.00	2.00	0.130	µg/L	1		624.1	9/25/19	9/26/19 4:10	LBD
cis-1,2-Dichloroethylene	<1.00	1.00	0.130	µg/L	1		624.1	9/25/19	9/26/19 4:10	LBD
1,1-Dichloroethane	<2.00	2.00	0.160	µg/L	1		624.1	9/25/19	9/26/19 4:10	LBD
1,1-Dichloroethylene	<2.00	2.00	0.320	µg/L	1		624.1	9/25/19	9/26/19 4:10	LBD
trans-1,2-Dichloroethylene	<2.00	2.00	0.310	µg/L	1		624.1	9/25/19	9/26/19 4:10	LBD
1,4-Dioxane	<50.0	50.0	22.5	µg/L	1		624.1	9/25/19	9/26/19 4:10	LBD
Ethanol	<100	100	10.5	µg/L	1		624.1	9/25/19	9/26/19 4:10	LBD
Ethylbenzene	<2.00	2.00	0.130	µg/L	1		624.1	9/25/19	9/26/19 4:10	LBD
Methyl tert-Butyl Ether (MTBE)	<2.00	2.00	0.250	µg/L	1		624.1	9/25/19	9/26/19 4:10	LBD
Methylene Chloride	<5.00	5.00	0.340	µg/L	1		624.1	9/25/19	9/26/19 4:10	LBD
Tetrachloroethylene	<2.00	2.00	0.180	µg/L	1		624.1	9/25/19	9/26/19 4:10	LBD
Toluene	<1.00	1.00	0.140	µg/L	1		624.1	9/25/19	9/26/19 4:10	LBD
1,1,1-Trichloroethane	<2.00	2.00	0.200	µg/L	1		624.1	9/25/19	9/26/19 4:10	LBD
1,1,2-Trichloroethane	<2.00	2.00	0.160	µg/L	1		624.1	9/25/19	9/26/19 4:10	LBD
Trichloroethylene	<2.00	2.00	0.240	µg/L	1		624.1	9/25/19	9/26/19 4:10	LBD
Xylenes (total)	<3.00	3.00		µg/L	1		624.1	9/25/19	9/26/19 4:10	LBD
Vinyl Chloride	<2.00	2.00	0.450	µg/L	1		624.1	9/25/19	9/26/19 4:10	LBD
m+p Xylene	<2.00	2.00	0.300	µg/L	1		624.1	9/25/19	9/26/19 4:10	LBD
o-Xylene	<2.00	2.00	0.170	µg/L	1		624.1	9/25/19	9/26/19 4:10	LBD

Surrogates	% Recovery	Recovery Limits	Flag/Qual
1,2-Dichloroethane-d4	103	70-130	9/26/19 4:10
Toluene-d8	108	70-130	9/26/19 4:10
4-Bromofluorobenzene	101	70-130	9/26/19 4:10

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

Project Location: Somerville, MA

Sample Description:

Work Order: 1911152

Date Received: 9/23/2019

Field Sample #: X-REC-19-09-23

Sampled: 9/23/2019 11:30

Sample ID: 1911152-02

Sample Matrix: Ground Water

Semivolatile Organic Compounds by GC/MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Benzo(a)anthracene (SIM)	<0.050	0.050	0.016	µg/L	1		625.1	9/25/19	9/27/19 15:30	CLA
Benzo(a)pyrene (SIM)	<0.10	0.10	0.012	µg/L	1		625.1	9/25/19	9/27/19 15:30	CLA
Benzo(b)fluoranthene (SIM)	<0.050	0.050	0.015	µg/L	1		625.1	9/25/19	9/27/19 15:30	CLA
Benzo(k)fluoranthene (SIM)	<0.20	0.20	0.012	µg/L	1		625.1	9/25/19	9/27/19 15:30	CLA
Bis(2-ethylhexyl)phthalate (SIM)	<1.0	1.0	0.43	µg/L	1		625.1	9/25/19	9/27/19 15:30	CLA
Chrysene (SIM)	<0.20	0.20	0.015	µg/L	1		625.1	9/25/19	9/27/19 15:30	CLA
Dibenz(a,h)anthracene (SIM)	<0.10	0.10	0.017	µg/L	1		625.1	9/25/19	9/27/19 15:30	CLA
Indeno(1,2,3-cd)pyrene (SIM)	<0.10	0.10	0.018	µg/L	1		625.1	9/25/19	9/27/19 15:30	CLA
Pentachlorophenol (SIM)	<1.0	1.0	0.33	µg/L	1		625.1	9/25/19	9/27/19 15:30	CLA
Pyrene (SIM)	<1.0	1.0	0.023	µg/L	1		625.1	9/25/19	9/27/19 15:30	CLA
Surrogates	% Recovery		Recovery Limits		Flag/Qual					
2-Fluorophenol (SIM)	42.4		15-110						9/27/19 15:30	
Phenol-d6 (SIM)	31.6		15-110						9/27/19 15:30	
Nitrobenzene-d5	71.5		30-130						9/27/19 15:30	
2-Fluorobiphenyl	55.2		30-130						9/27/19 15:30	
2,4,6-Tribromophenol (SIM)	100		15-110						9/27/19 15:30	
p-Terphenyl-d14	68.1		30-130						9/27/19 15:30	

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

Project Location: Somerville, MA

Sample Description:

Work Order: 19I1152

Date Received: 9/23/2019

Field Sample #: X-REC-19-09-23

Sampled: 9/23/2019 11:30

Sample ID: 19I1152-02

Sample Matrix: Ground Water

Semivolatle Organic Compounds by - GC/MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acenaphthene	<5.00	5.00	2.43	µg/L	1		625.1	9/25/19	9/26/19 19:28	KLB
Acenaphthylene	<5.00	5.00	2.38	µg/L	1		625.1	9/25/19	9/26/19 19:28	KLB
Anthracene	<5.00	5.00	2.71	µg/L	1		625.1	9/25/19	9/26/19 19:28	KLB
Benzo(g,h,i)perylene	<5.00	5.00	3.37	µg/L	1		625.1	9/25/19	9/26/19 19:28	KLB
Fluoranthene	<5.00	5.00	2.35	µg/L	1		625.1	9/25/19	9/26/19 19:28	KLB
Fluorene	<5.00	5.00	2.47	µg/L	1		625.1	9/25/19	9/26/19 19:28	KLB
Naphthalene	<5.00	5.00	2.66	µg/L	1		625.1	9/25/19	9/26/19 19:28	KLB
Phenanthrene	<5.00	5.00	2.74	µg/L	1		625.1	9/25/19	9/26/19 19:28	KLB
Surrogates		% Recovery	Recovery Limits			Flag/Qual				
2-Fluorophenol		41.7	15-110						9/26/19 19:28	
Phenol-d6		30.5	15-110						9/26/19 19:28	
Nitrobenzene-d5		81.8	30-130						9/26/19 19:28	
2-Fluorobiphenyl		69.5	30-130						9/26/19 19:28	
2,4,6-Tribromophenol		94.5	15-110						9/26/19 19:28	
p-Terphenyl-d14		87.3	30-130						9/26/19 19:28	

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

Project Location: Somerville, MA

Sample Description:

Work Order: 191152

Date Received: 9/23/2019

Field Sample #: X-REC-19-09-23

Sampled: 9/23/2019 11:30

Sample ID: 191152-02

Sample Matrix: Ground Water

Polychlorinated Biphenyls By GC/ECD

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	<0.143	0.143		µg/L	1		608.3	9/26/19	9/28/19 13:32	JMB
Aroclor-1221 [1]	<0.143	0.143		µg/L	1		608.3	9/26/19	9/28/19 13:32	JMB
Aroclor-1232 [1]	<0.143	0.143		µg/L	1		608.3	9/26/19	9/28/19 13:32	JMB
Aroclor-1242 [1]	<0.143	0.143		µg/L	1		608.3	9/26/19	9/28/19 13:32	JMB
Aroclor-1248 [1]	<0.143	0.143		µg/L	1		608.3	9/26/19	9/28/19 13:32	JMB
Aroclor-1254 [1]	<0.143	0.143		µg/L	1		608.3	9/26/19	9/28/19 13:32	JMB
Aroclor-1260 [2]	0.201	0.143		µg/L	1		608.3	9/26/19	9/28/19 13:32	JMB
Surrogates		% Recovery		Recovery Limits		Flag/Qual				
Decachlorobiphenyl [1]		80.2		30-150					9/28/19 13:32	
Decachlorobiphenyl [2]		81.4		30-150					9/28/19 13:32	
Tetrachloro-m-xylene [1]		71.4		30-150					9/28/19 13:32	
Tetrachloro-m-xylene [2]		74.6		30-150					9/28/19 13:32	

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Project Location: Somerville, MA

Sample Description:

Work Order: 191152

Date Received: 9/23/2019

Field Sample #: X-REC-19-09-23

Sampled: 9/23/2019 11:30

Sample ID: 191152-02

Sample Matrix: Ground Water

Metals Analyses (Total)

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Antimony	ND	1.0		µg/L	1		EPA 200.8	9/25/19	9/26/19 11:06	QNW
Arsenic	2.6	0.80		µg/L	1		EPA 200.8	9/25/19	9/26/19 11:06	QNW
Cadmium	ND	0.20		µg/L	1		EPA 200.8	9/25/19	9/26/19 11:06	QNW
Chromium	2.0	1.0		µg/L	1		EPA 200.8	9/25/19	9/26/19 11:06	QNW
Chromium, Trivalent	0.0020			mg/L	1		Tri Chrome Calc.	9/25/19	9/26/19 11:06	QNW
Copper	6.4	1.0		µg/L	1		EPA 200.8	9/25/19	9/26/19 11:06	QNW
Iron	0.19	0.050		mg/L	1		EPA 200.7	9/25/19	9/26/19 1:48	MJH
Lead	0.57	0.50		µg/L	1		EPA 200.8	9/25/19	9/26/19 11:06	QNW
Mercury	ND	0.00010		mg/L	1		EPA 245.1	9/30/19	9/30/19 14:33	CJV
Nickel	ND	5.0		µg/L	1		EPA 200.8	9/25/19	9/26/19 11:06	QNW
Selenium	7.1	5.0	1.6	µg/L	1		EPA 200.8	9/25/19	9/26/19 11:06	QNW
Silver	ND	0.20		µg/L	1		EPA 200.8	9/25/19	9/26/19 11:06	QNW
Zinc	ND	10		µg/L	1		EPA 200.8	9/25/19	9/26/19 11:06	QNW

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Project Location: Somerville, MA

Sample Description:

Work Order: 191152

Date Received: 9/23/2019

Field Sample #: X-REC-19-09-23

Sampled: 9/23/2019 11:30

Sample ID: 191152-02

Sample Matrix: Ground Water

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

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Chloride	800	100		mg/L	100		EPA 300.0	9/27/19	9/27/19 18:25	MMH
Chlorine, Residual	ND	0.020		mg/L	1	Z-01	SM21-22 4500 CL G	9/23/19	9/23/19 19:50	MJG
Hexavalent Chromium	ND	0.0040		mg/L	1		SM21-22 3500 Cr B	9/23/19	9/23/19 19:50	IS
Phenol	ND	0.050		mg/L	1		EPA 420.1	9/26/19	9/30/19 11:45	LL
Total Suspended Solids	4.2	0.83		mg/L	1		SM21-22 2540D	9/25/19	9/25/19 12:25	LL
Silica Gel Treated HEM (SGT-HEM)	ND	1.4		mg/L	1		EPA 1664B	9/25/19	9/25/19 12:20	LL

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Project Location: Somerville, MA

Sample Description:

Work Order: 191152

Date Received: 9/23/2019

Sampled: 9/23/2019 11:30

Field Sample #: X-REC-19-09-23

Sample ID: 191152-02

Sample Matrix: Ground Water

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

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Ammonia as N	0.092	0.075	0.024	mg/L	1		121,4500NH3-BH		9/30/19 20:26	AAL
Cyanide	ND	0.005	0.001	mg/L	1		121,4500CN-CE		9/25/19 16:31	AAL

Sample Extraction Data

Prep Method: SW-846 3510C-608.3

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
19I1152-01 [X--INF-19-09-23]	B241440	140	2.00	09/26/19
19I1152-02 [X-REC-19-09-23]	B241440	140	2.00	09/26/19

Prep Method: SW-846 5030B-624.1

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
19I1152-01 [X--INF-19-09-23]	B241411	5	5.00	09/25/19
19I1152-02 [X-REC-19-09-23]	B241411	5	5.00	09/25/19

Prep Method: SW-846 3510C-625.1

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
19I1152-01 [X--INF-19-09-23]	B241415	1000	1.00	09/25/19
19I1152-02 [X-REC-19-09-23]	B241415	1000	1.00	09/25/19

Prep Method: SW-846 3510C-625.1

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
19I1152-01 [X--INF-19-09-23]	B241545	1000	1.00	09/25/19
19I1152-02 [X-REC-19-09-23]	B241545	1000	1.00	09/25/19

EPA 1664B

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
19I1152-01 [X--INF-19-09-23]	B241405	1000		09/25/19
19I1152-02 [X-REC-19-09-23]	B241405	1000		09/25/19

Prep Method: EPA 200.7-EPA 200.7

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
19I1152-01 [X--INF-19-09-23]	B241428	50.0	50.0	09/25/19
19I1152-02 [X-REC-19-09-23]	B241428	50.0	50.0	09/25/19

Prep Method: EPA 200.8-EPA 200.8

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
19I1152-01 [X--INF-19-09-23]	B241430	50.0	50.0	09/25/19
19I1152-02 [X-REC-19-09-23]	B241430	50.0	50.0	09/25/19

Prep Method: EPA 245.1-EPA 245.1

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
19I1152-01 [X--INF-19-09-23]	B241787	6.00	6.00	09/30/19
19I1152-02 [X-REC-19-09-23]	B241787	6.00	6.00	09/30/19

Sample Extraction Data

Prep Method: EPA 300.0-EPA 300.0

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
19I1152-01 [X--INF-19-09-23]	B241605	10.0	10.0	09/27/19
19I1152-02 [X-REC-19-09-23]	B241605	10.0	10.0	09/27/19

EPA 420.1

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
19I1152-01 [X--INF-19-09-23]	B241533	50.0	50.0	09/26/19
19I1152-02 [X-REC-19-09-23]	B241533	50.0	50.0	09/26/19

SM21-22 2540D

Lab Number [Field ID]	Batch	Initial [mL]	Date
19I1152-01 [X--INF-19-09-23]	B241397	600	09/25/19
19I1152-02 [X-REC-19-09-23]	B241397	600	09/25/19

SM21-22 3500 Cr B

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
19I1152-01 [X--INF-19-09-23]	B241279	50.0	50.0	09/23/19
19I1152-02 [X-REC-19-09-23]	B241279	50.0	50.0	09/23/19

SM21-22 4500 CL G

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
19I1152-01 [X--INF-19-09-23]	B241276	100	100	09/23/19
19I1152-02 [X-REC-19-09-23]	B241276	100	100	09/23/19

Prep Method: EPA 200.8-Tri Chrome Calc.

Lab Number [Field ID]	Batch	Initial [mL]	Date
19I1152-01 [X--INF-19-09-23]	B241430	50.0	09/25/19
19I1152-02 [X-REC-19-09-23]	B241430	50.0	09/25/19

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

QUALITY CONTROL

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B241411 - SW-846 5030B

Blank (B241411-BLK1)

Prepared: 09/25/19 Analyzed: 09/26/19

Acetone	ND	50.0	µg/L							
tert-Amyl Methyl Ether (TAME)	ND	0.500	µg/L							
Benzene	ND	1.00	µg/L							
tert-Butyl Alcohol (TBA)	ND	20.0	µg/L							
Carbon Tetrachloride	ND	2.00	µg/L							
1,2-Dichlorobenzene	ND	2.00	µg/L							
1,3-Dichlorobenzene	ND	2.00	µg/L							
1,4-Dichlorobenzene	ND	2.00	µg/L							
cis-1,2-Dichloroethylene	ND	1.00	µg/L							
1,1-Dichloroethane	ND	2.00	µg/L							
1,1-Dichloroethylene	ND	2.00	µg/L							
trans-1,2-Dichloroethylene	ND	2.00	µg/L							
1,4-Dioxane	ND	50.0	µg/L							
Ethanol	ND	50.0	µg/L							
Ethylbenzene	ND	2.00	µg/L							
Methyl tert-Butyl Ether (MTBE)	ND	2.00	µg/L							
Methylene Chloride	ND	5.00	µg/L							
Tetrachloroethylene	ND	2.00	µg/L							
Toluene	ND	1.00	µg/L							
1,1,1-Trichloroethane	ND	2.00	µg/L							
1,1,2-Trichloroethane	ND	2.00	µg/L							
Trichloroethylene	ND	2.00	µg/L							
Xylenes (total)	ND	3.00	µg/L							
Vinyl Chloride	ND	2.00	µg/L							
m+p Xylene	ND	2.00	µg/L							
o-Xylene	ND	2.00	µg/L							
Surrogate: 1,2-Dichloroethane-d4	25.8		µg/L	25.0		103	70-130			
Surrogate: Toluene-d8	26.9		µg/L	25.0		108	70-130			
Surrogate: 4-Bromofluorobenzene	24.9		µg/L	25.0		99.5	70-130			

LCS (B241411-BS1)

Prepared: 09/25/19 Analyzed: 09/26/19

Acetone	230	50.0	µg/L	200		113	70-160			†
tert-Amyl Methyl Ether (TAME)	21	0.500	µg/L	20.0		105	70-130			
Benzene	21	1.00	µg/L	20.0		104	65-135			
tert-Butyl Alcohol (TBA)	260	20.0	µg/L	200		131	40-160			†
Carbon Tetrachloride	20	2.00	µg/L	20.0		97.8	70-130			
1,2-Dichlorobenzene	18	2.00	µg/L	20.0		91.8	65-135			
1,3-Dichlorobenzene	18	2.00	µg/L	20.0		91.0	70-130			
1,4-Dichlorobenzene	18	2.00	µg/L	20.0		90.9	65-135			
cis-1,2-Dichloroethylene	21	1.00	µg/L	20.0		106	70-130			
1,1-Dichloroethane	22	2.00	µg/L	20.0		108	70-130			
1,1-Dichloroethylene	21	2.00	µg/L	20.0		104	50-150			
trans-1,2-Dichloroethylene	22	2.00	µg/L	20.0		111	70-130			
1,4-Dioxane	360	50.0	µg/L	200		178 *	40-130			L-05 †
Ethanol	330	50.0	µg/L	200		167 *	40-160			L-01
Ethylbenzene	18	2.00	µg/L	20.0		91.4	60-140			
Methyl tert-Butyl Ether (MTBE)	22	2.00	µg/L	20.0		108	70-130			
Methylene Chloride	20	5.00	µg/L	20.0		99.8	60-140			
Tetrachloroethylene	21	2.00	µg/L	20.0		107	70-130			
Toluene	21	1.00	µg/L	20.0		103	70-130			
1,1,1-Trichloroethane	20	2.00	µg/L	20.0		100	70-130			
1,1,2-Trichloroethane	22	2.00	µg/L	20.0		112	70-130			

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QUALITY CONTROL

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B241411 - SW-846 5030B

LCS (B241411-BS1)

Prepared: 09/25/19 Analyzed: 09/26/19

Trichloroethylene	21	2.00	µg/L	20.0		103	65-135			
Vinyl Chloride	17	2.00	µg/L	20.0		85.7	5-195			
m+p Xylene	36	2.00	µg/L	40.0		90.2	70-130			
o-Xylene	18	2.00	µg/L	20.0		91.5	70-130			
Surrogate: 1,2-Dichloroethane-d4	24.8		µg/L	25.0		99.0	70-130			
Surrogate: Toluene-d8	27.3		µg/L	25.0		109	70-130			
Surrogate: 4-Bromofluorobenzene	25.9		µg/L	25.0		104	70-130			

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QUALITY CONTROL

Semivolatiles Organic Compounds by - GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B241415 - SW-846 3510C										
Blank (B241415-BLK1)										
					Prepared: 09/25/19 Analyzed: 09/26/19					
Acenaphthene	ND	5.00	µg/L							
Acenaphthylene	ND	5.00	µg/L							
Anthracene	ND	5.00	µg/L							
Benzo(g,h,i)perylene	ND	5.00	µg/L							
Fluoranthene	ND	5.00	µg/L							
Fluorene	ND	5.00	µg/L							
Naphthalene	ND	5.00	µg/L							
Pentachlorophenol	ND	10.0	µg/L							
Phenanthrene	ND	5.00	µg/L							
Pyrene	ND	5.00	µg/L							
Surrogate: 2-Fluorophenol	108		µg/L	200		54.0	15-110			
Surrogate: Phenol-d6	86.0		µg/L	200		43.0	15-110			
Surrogate: Nitrobenzene-d5	115		µg/L	100		115	30-130			
Surrogate: 2-Fluorobiphenyl	87.3		µg/L	100		87.3	30-130			
Surrogate: 2,4,6-Tribromophenol	216		µg/L	200		108	15-110			
Surrogate: p-Terphenyl-d14	108		µg/L	100		108	30-130			
LCS (B241415-BS1)										
					Prepared: 09/25/19 Analyzed: 09/26/19					
Acenaphthene	48.3	5.00	µg/L	50.0		96.5	47-145			
Acenaphthylene	48.4	5.00	µg/L	50.0		96.8	33-145			
Anthracene	50.1	5.00	µg/L	50.0		100	27-133			
Benzo(g,h,i)perylene	50.8	5.00	µg/L	50.0		102	10-219			
Fluoranthene	53.1	5.00	µg/L	50.0		106	26-137			
Fluorene	50.0	5.00	µg/L	50.0		100	59-121			
Naphthalene	46.2	5.00	µg/L	50.0		92.4	21-133			
Pentachlorophenol	36.5	10.0	µg/L	50.0		72.9	14-176			
Phenanthrene	49.2	5.00	µg/L	50.0		98.4	54-120			
Pyrene	50.0	5.00	µg/L	50.0		99.9	52-120			
Surrogate: 2-Fluorophenol	133		µg/L	200		66.5	15-110			
Surrogate: Phenol-d6	102		µg/L	200		50.9	15-110			
Surrogate: Nitrobenzene-d5	113		µg/L	100		113	30-130			
Surrogate: 2-Fluorobiphenyl	100		µg/L	100		100	30-130			
Surrogate: 2,4,6-Tribromophenol	243		µg/L	200		122 *	15-110			S-07
Surrogate: p-Terphenyl-d14	115		µg/L	100		115	30-130			
LCS Dup (B241415-BSD1)										
					Prepared: 09/25/19 Analyzed: 09/26/19					
Acenaphthene	46.4	5.00	µg/L	50.0		92.9	47-145	3.84	48	
Acenaphthylene	46.8	5.00	µg/L	50.0		93.5	33-145	3.49	74	
Anthracene	48.5	5.00	µg/L	50.0		97.0	27-133	3.24	66	
Benzo(g,h,i)perylene	48.5	5.00	µg/L	50.0		97.1	10-219	4.45	97	
Fluoranthene	51.2	5.00	µg/L	50.0		102	26-137	3.66	66	
Fluorene	48.2	5.00	µg/L	50.0		96.5	59-121	3.60	38	
Naphthalene	44.7	5.00	µg/L	50.0		89.4	21-133	3.30	65	
Pentachlorophenol	35.9	10.0	µg/L	50.0		71.8	14-176	1.52	86	
Phenanthrene	48.0	5.00	µg/L	50.0		96.1	54-120	2.41	39	
Pyrene	48.2	5.00	µg/L	50.0		96.4	52-120	3.57	49	
Surrogate: 2-Fluorophenol	118		µg/L	200		58.9	15-110			
Surrogate: Phenol-d6	90.9		µg/L	200		45.4	15-110			
Surrogate: Nitrobenzene-d5	139		µg/L	100		139 *	30-130			S-07
Surrogate: 2-Fluorobiphenyl	93.6		µg/L	100		93.6	30-130			
Surrogate: 2,4,6-Tribromophenol	228		µg/L	200		114 *	15-110			S-07
Surrogate: p-Terphenyl-d14	108		µg/L	100		108	30-130			

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QUALITY CONTROL

Polychlorinated Biphenyls By GC/ECD - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B241440 - SW-846 3510C										
Blank (B241440-BLK1)										
Prepared: 09/26/19 Analyzed: 09/28/19										
Aroclor-1016	ND	0.167	µg/L							
Aroclor-1016 [2C]	ND	0.167	µg/L							
Aroclor-1221	ND	0.167	µg/L							
Aroclor-1221 [2C]	ND	0.167	µg/L							
Aroclor-1232	ND	0.167	µg/L							
Aroclor-1232 [2C]	ND	0.167	µg/L							
Aroclor-1242	ND	0.167	µg/L							
Aroclor-1242 [2C]	ND	0.167	µg/L							
Aroclor-1248	ND	0.167	µg/L							
Aroclor-1248 [2C]	ND	0.167	µg/L							
Aroclor-1254	ND	0.167	µg/L							
Aroclor-1254 [2C]	ND	0.167	µg/L							
Aroclor-1260	ND	0.167	µg/L							
Aroclor-1260 [2C]	ND	0.167	µg/L							
Surrogate: Decachlorobiphenyl	3.08		µg/L	3.33		92.4	30-150			
Surrogate: Decachlorobiphenyl [2C]	3.02		µg/L	3.33		90.6	30-150			
Surrogate: Tetrachloro-m-xylene	2.39		µg/L	3.33		71.6	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	2.47		µg/L	3.33		74.2	30-150			
LCS (B241440-BS1)										
Prepared: 09/26/19 Analyzed: 09/28/19										
Aroclor-1016	0.470	0.200	µg/L	0.500		94.1	50-140			
Aroclor-1016 [2C]	0.531	0.200	µg/L	0.500		106	50-140			
Aroclor-1260	0.465	0.200	µg/L	0.500		93.0	8-140			
Aroclor-1260 [2C]	0.501	0.200	µg/L	0.500		100	8-140			
Surrogate: Decachlorobiphenyl	1.93		µg/L	2.00		96.3	30-150			
Surrogate: Decachlorobiphenyl [2C]	1.90		µg/L	2.00		95.1	30-150			
Surrogate: Tetrachloro-m-xylene	1.82		µg/L	2.00		91.0	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	1.87		µg/L	2.00		93.6	30-150			
LCS Dup (B241440-BSD1)										
Prepared: 09/26/19 Analyzed: 09/28/19										
Aroclor-1016	0.419	0.200	µg/L	0.500		83.8	50-140	11.5		
Aroclor-1016 [2C]	0.441	0.200	µg/L	0.500		88.3	50-140	18.5		
Aroclor-1260	0.368	0.200	µg/L	0.500		73.7	8-140	23.1		
Aroclor-1260 [2C]	0.397	0.200	µg/L	0.500		79.5	8-140	23.1		
Surrogate: Decachlorobiphenyl	1.51		µg/L	2.00		75.7	30-150			
Surrogate: Decachlorobiphenyl [2C]	1.53		µg/L	2.00		76.4	30-150			
Surrogate: Tetrachloro-m-xylene	1.45		µg/L	2.00		72.4	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	1.51		µg/L	2.00		75.6	30-150			

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QUALITY CONTROL

Metals Analyses (Total) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B241428 - EPA 200.7										
Blank (B241428-BLK1) Prepared & Analyzed: 09/25/19										
Iron	ND	0.050	mg/L							
LCS (B241428-BS1) Prepared & Analyzed: 09/25/19										
Iron	4.05	0.050	mg/L	4.00		101	85-115			
LCS Dup (B241428-BSD1) Prepared & Analyzed: 09/25/19										
Iron	4.02	0.050	mg/L	4.00		100	85-115	0.888	20	
Duplicate (B241428-DUP1) Source: 1911152-01 Prepared & Analyzed: 09/25/19										
Iron	1.55	0.050	mg/L		1.56			0.336	20	
Matrix Spike (B241428-MS1) Source: 1911152-01 Prepared & Analyzed: 09/25/19										
Iron	5.70	0.050	mg/L	4.00	1.56	103	70-130			
Batch B241430 - EPA 200.8										
Blank (B241430-BLK1) Prepared: 09/25/19 Analyzed: 09/26/19										
Antimony	ND	1.0	µg/L							
Arsenic	ND	0.80	µg/L							
Cadmium	ND	0.20	µg/L							
Chromium	ND	1.0	µg/L							
Copper	ND	1.0	µg/L							
Lead	ND	0.50	µg/L							
Nickel	ND	5.0	µg/L							
Selenium	ND	5.0	µg/L							
Silver	ND	0.20	µg/L							
Zinc	ND	10	µg/L							
LCS (B241430-BS1) Prepared: 09/25/19 Analyzed: 09/26/19										
Antimony	510	10	µg/L	500		102	85-115			
Arsenic	513	8.0	µg/L	500		103	85-115			
Cadmium	499	2.0	µg/L	500		99.9	85-115			
Chromium	512	10	µg/L	500		102	85-115			
Copper	1020	10	µg/L	1000		102	85-115			
Lead	510	5.0	µg/L	500		102	85-115			
Nickel	514	50	µg/L	500		103	85-115			
Selenium	523	50	µg/L	500		105	85-115			
Silver	481	2.0	µg/L	500		96.2	85-115			
Zinc	1030	100	µg/L	1000		103	85-115			
LCS Dup (B241430-BSD1) Prepared: 09/25/19 Analyzed: 09/26/19										
Antimony	505	10	µg/L	500		101	85-115	0.883	20	
Arsenic	508	8.0	µg/L	500		102	85-115	0.956	20	
Cadmium	499	2.0	µg/L	500		99.9	85-115	0.00523	20	
Chromium	505	10	µg/L	500		101	85-115	1.42	20	
Copper	996	10	µg/L	1000		99.6	85-115	2.40	20	
Lead	503	5.0	µg/L	500		101	85-115	1.43	20	
Nickel	507	50	µg/L	500		101	85-115	1.37	20	
Selenium	512	50	µg/L	500		102	85-115	2.08	20	
Silver	470	2.0	µg/L	500		94.0	85-115	2.37	20	
Zinc	1010	100	µg/L	1000		101	85-115	1.84	20	

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QUALITY CONTROL

Metals Analyses (Total) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B241430 - EPA 200.8

Duplicate (B241430-DUP1)

Source: 1911152-01

Prepared: 09/25/19 Analyzed: 09/26/19

Antimony	ND	1.0	µg/L		ND			NC	20	
Arsenic	1.76	0.80	µg/L		2.00			12.5	20	
Cadmium	ND	0.20	µg/L		ND			NC	20	
Chromium	1.22	1.0	µg/L		1.31			7.25	20	
Copper	10.3	1.0	µg/L		10.2			0.601	20	
Lead	1.02	0.50	µg/L		1.05			3.64	20	
Nickel	5.94	5.0	µg/L		6.12			2.85	20	
Selenium	4.61	5.0	µg/L		4.82			4.44	20	J
Silver	ND	0.20	µg/L		ND			NC	20	
Zinc	13.2	10	µg/L		14.4			8.79	20	

Matrix Spike (B241430-MS1)

Source: 1911152-01

Prepared: 09/25/19 Analyzed: 09/26/19

Antimony	513	10	µg/L	500	ND	103	70-130			
Arsenic	518	8.0	µg/L	500	ND	104	70-130			
Cadmium	495	2.0	µg/L	500	ND	99.0	70-130			
Chromium	513	10	µg/L	500	ND	103	70-130			
Copper	977	10	µg/L	1000	10.2	96.7	70-130			
Lead	521	5.0	µg/L	500	1.05	104	70-130			
Nickel	507	50	µg/L	500	ND	101	70-130			
Selenium	515	50	µg/L	500	ND	103	70-130			
Silver	462	2.0	µg/L	500	ND	92.4	70-130			
Zinc	1010	100	µg/L	1000	ND	101	70-130			

Batch B241787 - EPA 245.1

Blank (B241787-BLK1)

Prepared & Analyzed: 09/30/19

Mercury	ND	0.00010	mg/L							
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LCS (B241787-BS1)

Prepared & Analyzed: 09/30/19

Mercury	0.00336	0.00010	mg/L	0.00400	83.9	*	85-115			L-03
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LCS Dup (B241787-BSD1)

Prepared & Analyzed: 09/30/19

Mercury	0.00364	0.00010	mg/L	0.00400	91.1		85-115	8.16	20	
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QUALITY CONTROL

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B241276 - SM21-22 4500 CL G										
Blank (B241276-BLK1)				Prepared & Analyzed: 09/23/19						
Chlorine, Residual	ND	0.020	mg/L							Z-01
LCS (B241276-BS1)				Prepared & Analyzed: 09/23/19						
Chlorine, Residual	1.4	0.020	mg/L	1.29		111	66.3-134			Z-01
LCS Dup (B241276-BSD1)				Prepared & Analyzed: 09/23/19						
Chlorine, Residual	1.5	0.020	mg/L	1.29		117	66.3-134	5.14	9.96	Z-01
Duplicate (B241276-DUP1)				Source: 19I1152-01		Prepared & Analyzed: 09/23/19				
Chlorine, Residual	ND	0.020	mg/L		ND			NC	32.5	Z-01
Matrix Spike (B241276-MS1)				Source: 19I1152-01		Prepared & Analyzed: 09/23/19				
Chlorine, Residual	0.90	0.020	mg/L	1.00	ND	89.8	10-167			Z-01
Batch B241279 - SM21-22 3500 Cr B										
Blank (B241279-BLK1)				Prepared & Analyzed: 09/23/19						
Hexavalent Chromium	ND	0.0040	mg/L							
LCS (B241279-BS1)				Prepared & Analyzed: 09/23/19						
Hexavalent Chromium	0.11	0.0040	mg/L	0.100		113	83.9-121			
LCS Dup (B241279-BSD1)				Prepared & Analyzed: 09/23/19						
Hexavalent Chromium	0.12	0.0040	mg/L	0.100		117	83.9-121	3.79	10	
Duplicate (B241279-DUP1)				Source: 19I1152-02		Prepared & Analyzed: 09/23/19				
Hexavalent Chromium	ND	0.0040	mg/L		ND			NC	45.7	
Matrix Spike (B241279-MS1)				Source: 19I1152-02		Prepared & Analyzed: 09/23/19				
Hexavalent Chromium	0.088	0.0040	mg/L	0.100	ND	88.2	25.5-193			
Batch B241397 - SM21-22 2540D										
Blank (B241397-BLK1)				Prepared & Analyzed: 09/25/19						
Total Suspended Solids	ND	2.5	mg/L							
LCS (B241397-BS1)				Prepared & Analyzed: 09/25/19						
Total Suspended Solids	190	10	mg/L	200		95.0	57.6-118			
Batch B241405 - EPA 1664B										
Blank (B241405-BLK1)				Prepared & Analyzed: 09/25/19						
Silica Gel Treated HEM (SGT-HEM)	ND	1.4	mg/L							

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QUALITY CONTROL

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B241405 - EPA 1664B										
LCS (B241405-BS1)				Prepared & Analyzed: 09/25/19						
Silica Gel Treated HEM (SGT-HEM)	9.0		mg/L	10.0		90.0	64-132			
Batch B241533 - EPA 420.1										
Blank (B241533-BLK1)				Prepared: 09/26/19 Analyzed: 09/30/19						
Phenol	ND	0.050	mg/L							
LCS (B241533-BS1)				Prepared: 09/26/19 Analyzed: 09/30/19						
Phenol	0.54	0.050	mg/L	0.500		109	72.4-125			
LCS Dup (B241533-BSD1)				Prepared: 09/26/19 Analyzed: 09/30/19						
Phenol	0.56	0.050	mg/L	0.500		113	72.4-125	3.99	11.1	
Batch B241605 - EPA 300.0										
Blank (B241605-BLK1)				Prepared & Analyzed: 09/27/19						
Chloride	ND	1.0	mg/L							
LCS (B241605-BS1)				Prepared & Analyzed: 09/27/19						
Chloride	10		mg/L	10.0		103	90-110			
LCS Dup (B241605-BSD1)				Prepared & Analyzed: 09/27/19						
Chloride	10		mg/L	10.0		103	90-110	0.449	20	

**IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES**

X-REC-19-09-23

608.3

Lab Sample ID: 19I1152-02 Date(s) Analyzed: 09/28/2019 09/28/2019

Instrument ID (1): ECD1 Instrument ID (2): ECD1

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

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%RPD
			FROM	TO		
Aroclor-1260	1	0.000	0.000	0.000	0.172	
	2	0.000	0.000	0.000	0.201	16.7

**IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES**

LCS

608.3

Lab Sample ID: B241440-BS1 Date(s) Analyzed: 09/28/2019 09/28/2019

Instrument ID (1): ECD1 Instrument ID (2): ECD1

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

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%RPD
			FROM	TO		
Aroclor-1016	1	0.000	0.000	0.000	0.470	
	2	0.000	0.000	0.000	0.531	12.2
Aroclor-1260	1	0.000	0.000	0.000	0.465	
	2	0.000	0.000	0.000	0.501	6.4

**IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES**

LCS Dup

608.3

Lab Sample ID: B241440-BSD1 Date(s) Analyzed: 09/28/2019 09/28/2019

Instrument ID (1): ECD1 Instrument ID (2): ECD1

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

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%RPD
			FROM	TO		
Aroclor-1016	1	0.000	0.000	0.000	0.419	
	2	0.000	0.000	0.000	0.441	4.9
Aroclor-1260	1	0.000	0.000	0.000	0.368	
	2	0.000	0.000	0.000	0.397	7.0

FLAG/QUALIFIER SUMMARY

*	QC result is outside of established limits.
†	Wide recovery limits established for difficult compound.
‡	Wide RPD limits established for difficult compound.
#	Data exceeded client recommended or regulatory level
ND	Not Detected
RL	Reporting Limit is at the level of quantitation (LOQ)
DL	Detection Limit is the lower limit of detection determined by the MDL study
MCL	Maximum Contaminant Level
	Percent recoveries and relative percent differences (RPDs) are determined by the software using values in the calculation which have not been rounded.
	No results have been blank subtracted unless specified in the case narrative section.
J	Detected but below the Reporting Limit (lowest calibration standard); therefore, result is an estimated concentration (CLP J-Flag).
L-01	Laboratory fortified blank /laboratory control sample recovery outside of control limits. Data validation is not affected since all results are "not detected" for all samples in this batch for this compound and bias is on the high side.
L-03	Laboratory fortified blank/laboratory control sample recovery is outside of control limits. Reported value for this compound is likely to be biased on the low side.
L-05	Laboratory fortified blank/laboratory control sample recovery is outside of control limits. Reported value for this compound is likely to be biased on the high side.
S-07	One associated surrogate standard recovery is outside of control limits but the other(s) is/are within limits. All recoveries are > 10%.
V-05	Continuing calibration verification (CCV) did not meet method specifications and was biased on the low side for this compound.
V-35	Initial calibration verification (ICV) did not meet method specifications and was biased on the high side for this compound. Reported result is estimated.
Z-01	SM 4500 test had calibration points outside of acceptable back calculated recoveries. Reanalysis yielded similar nonconformance.

CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
608.3 in Water	
Aroclor-1016	CT,MA,NH,NY,RI,NC,ME,VA
Aroclor-1016 [2C]	CT,MA,NH,NY,RI,NC,ME,VA
Aroclor-1221	CT,MA,NH,NY,RI,NC,ME,VA
Aroclor-1221 [2C]	CT,MA,NH,NY,RI,NC,ME,VA
Aroclor-1232	CT,MA,NH,NY,RI,NC,ME,VA
Aroclor-1232 [2C]	CT,MA,NH,NY,RI,NC,ME,VA
Aroclor-1242	CT,MA,NH,NY,RI,NC,ME,VA
Aroclor-1242 [2C]	CT,MA,NH,NY,RI,NC,ME,VA
Aroclor-1248	CT,MA,NH,NY,RI,NC,ME,VA
Aroclor-1248 [2C]	CT,MA,NH,NY,RI,NC,ME,VA
Aroclor-1254	CT,MA,NH,NY,RI,NC,ME,VA
Aroclor-1254 [2C]	CT,MA,NH,NY,RI,NC,ME,VA
Aroclor-1260	CT,MA,NH,NY,RI,NC,ME,VA
Aroclor-1260 [2C]	CT,MA,NH,NY,RI,NC,ME,VA
624.1 in Water	
Acetone	CT,NY,MA,NH
tert-Amyl Methyl Ether (TAME)	MA
Benzene	CT,NY,MA,NH,RI,NC,ME,VA
tert-Butyl Alcohol (TBA)	NY,MA
Carbon Tetrachloride	CT,NY,MA,NH,RI,NC,ME,VA
1,2-Dichlorobenzene	CT,NY,MA,NH,RI,NC,ME,VA
1,3-Dichlorobenzene	CT,NY,MA,NH,RI,NC,ME,VA
1,4-Dichlorobenzene	CT,NY,MA,NH,RI,NC,ME,VA
cis-1,2-Dichloroethylene	NY,MA
1,1-Dichloroethane	CT,NY,MA,NH,RI,NC,ME,VA
1,1-Dichloroethylene	CT,NY,MA,NH,RI,NC,ME,VA
trans-1,2-Dichloroethylene	CT,NY,MA,NH,RI,NC,ME,VA
1,4-Dioxane	MA
Ethanol	NY,MA,NH
Ethylbenzene	CT,NY,MA,NH,RI,NC,ME,VA
Methyl tert-Butyl Ether (MTBE)	NY,MA,NH,NC
Methylene Chloride	CT,NY,MA,NH,RI,NC,ME,VA
Naphthalene	NY,MA,NC
Tetrachloroethylene	CT,NY,MA,NH,RI,NC,ME,VA
Toluene	CT,NY,MA,NH,RI,NC,ME,VA
1,1,1-Trichloroethane	CT,NY,MA,NH,RI,NC,ME,VA
1,1,2-Trichloroethane	CT,NY,MA,NH,RI,NC,ME,VA
Trichloroethylene	CT,NY,MA,NH,RI,NC,ME,VA
Xylenes (total)	NY,MA,NH,VA
Vinyl Chloride	CT,NY,MA,NH,RI,NC,ME,VA
m+p Xylene	CT,NY,MA,NH,RI,NC
o-Xylene	CT,NY,MA,NH,RI,NC
625.1 in Water	
Acenaphthene	CT,MA,NH,NY,NC,RI,ME,VA
Acenaphthylene	CT,MA,NH,NY,NC,RI,ME,VA
Anthracene	CT,MA,NH,NY,NC,RI,ME,VA

CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
625.1 in Water	
Benzo(g,h,i)perylene	CT,MA,NH,NY,NC,RI,ME,VA
1,3-Dichlorobenzene	MA,NC
1,4-Dichlorobenzene	MA,NC
1,2-Dichlorobenzene	MA,NC
Fluoranthene	CT,MA,NH,NY,NC,RI,ME,VA
Fluorene	CT,MA,NH,NY,NC,RI,ME,VA
Naphthalene	CT,MA,NH,NY,NC,RI,ME,VA
Pentachlorophenol	CT,MA,NH,NY,NC,RI,ME,VA
Phenanthrene	CT,MA,NH,NY,NC,RI,ME,VA
Phenol	CT,MA,NH,NY,NC,RI,ME,VA
Pyrene	CT,MA,NH,NY,NC,RI,ME,VA
2-Fluorophenol	NC
2-Fluorophenol	NC,VA
Phenol-d6	VA
Nitrobenzene-d5	VA
EPA 200.7 in Water	
Iron	CT,MA,NH,NY,RI,NC,ME,VA
EPA 200.8 in Water	
Antimony	CT,MA,NH,NY,RI,NC,ME,VA
Arsenic	CT,MA,NH,NY,RI,NC,ME,VA
Cadmium	CT,MA,NH,NY,RI,NC,ME,VA
Chromium	CT,MA,NH,NY,RI,NC,ME,VA
Copper	CT,MA,NH,NY,RI,NC,ME,VA
Lead	CT,MA,NH,NY,RI,NC,ME,VA
Nickel	CT,MA,NH,NY,RI,NC,ME,VA
Selenium	CT,MA,NH,NY,RI,NC,ME,VA
Silver	CT,MA,NH,NY,RI,NC,ME,VA
Zinc	CT,MA,NH,NY,RI,NC,ME,VA
EPA 245.1 in Water	
Mercury	CT,MA,NH,RI,NY,NC,ME,VA
EPA 300.0 in Water	
Chloride	NC,NY,MA,VA,ME,NH,CT,RI
EPA 420.1 in Water	
Phenol	CT,MA,NH,NY,RI,NC,ME,VA
SM19-22 4500 NH3 C in Water	
Ammonia as N	NY,MA,CT,RI,VA,NC,ME
SM21-22 2540D in Water	
Total Suspended Solids	CT,MA,NH,NY,RI,NC,ME,VA
SM21-22 3500 Cr B in Water	
Hexavalent Chromium	NY,CT,NH,RI,ME,VA,NC
SM21-22 4500 CL G in Water	
Chlorine, Residual	CT,MA,RI,ME
SM21-22 4500 CN E in Water	

CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
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SM21-22 4500 CN E in Water

Cyanide CT,MA,NH,NY,RI,NC,ME,VA

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

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

1911152

http://www.contestlabs.com

39 Spruce Street
East Longmeadow, MA 01028

CHAIN OF CUSTODY RECORD

ANALYSIS REQUESTED

Phone: 413-525-2332
 Fax: 413-525-6405
 Email: info@contestlabs.com
 The Vertex Companies, Inc.
 100 N. Washington Street, Boston MA
 781-974-7595
 Xmbly
 Somerville, MA
 48522
 Project Manager: B. Sivonen
 Con-Test Quote Name/Number:
 Invoice Recipient:
 Sampled By: B. Sivonen

7-Day PFAS 10-Day (std) 10-Day Due Date 5 day
 1-Day 3-Day 4-Day
 2-Day
 Field Filtered Lab to Filter
 Field Filtered Lab to Filter
 Format: PDF EXCEL
 Other: Equis
 CLP Like Data Pkg Required:
 Email To: bsivonen@vertexeng.com
 Fax To #:

Preservation Code
 Total Number Of:
 VIALS
 GLASS
 PLASTIC
 BACTERIA
 ENCORE
 Glassware in the fridge?
 Y / N
 Glassware in freezer? Y / N
 Prepackaged Cooler? Y / N
 *Context is not responsible for missing samples from prepacked coolers

Matrix Codes:
 GW = Ground Water
 WW = Waste Water
 DW = Drinking Water
 A = Air
 S = Soil
 SL = Sludge
 SOL = Solid
 O = Other (please define)
 SURFACE WATER
 Preservation Codes:
 I = Iced
 H = HCL
 M = Methanol
 N = Nitric Acid
 S = Sulfuric Acid
 B = Sodium Bisulfate
 X = Sodium Hydroxide
 T = Sodium Thiosulfate
 O = Other (please define)

Con-Test Work Order#	Client Sample ID / Description	Beginning Date/Time	Ending Date/Time	COMP/GRAS	Matrix Code	Conc Code	VIALS	GLASS	PLASTIC	BACTERIA	ENCORE
1	X-INF-19-09-23	9/23/19	10:30	G	GW	U	X	X	X	X	X
2	X-REC-19-09-23	9/23/19	11:30	G	GW	U	X	X	X	X	X

Client Comments: Run for ~~XXXXXX~~ Xmbly RGP Parameters

Relinquished by: (signature) [Signature] Date/Time: 12:45
 Received by: (signature) [Signature] Date/Time: 12:45
 Relinquished by: (signature) [Signature] Date/Time: 5:30
 Received by: (signature) [Signature] Date/Time: 9/23/19 12:36
 Relinquished by: (signature) [Signature] Date/Time:
 Received by: (signature) [Signature] Date/Time:
 Relinquished by: (signature) [Signature] Date/Time:
 Received by: (signature) [Signature] Date/Time:

Special Requirements: RCGW-2

MA MCP Required
 MCP Certification Form Required
 CT RCP Required
 RCP Certification Form Required
 MA State DW Required

Project Entity: Government Municipality City
 Federal 21 J Brownfield
 City MBTA
 School MBTA
 WRTA
 Chromatogram
 AIMA-LAP-LLC
 PCB ONLY
 Soxhlet
 Non Soxhlet

Other: WRTA Chromatogram AIMA-LAP-LLC

NEIAC and AIMA-LAP, LLC Accredited

Disclaimer: Con-Test Labs is not responsible for any omitted information on the Chain of Custody. The Chain of Custody is a legal document that must be complete and accurate and is used to determine what analyses the laboratory will perform. Any missing information is not the laboratory's responsibility. Con Test values your partnership on each project and will try to assist with missing information, but will not be held accountable.

Parameter	Effluent Limitation	
	TBEL	WQBEL
A. Inorganics		
Ammonia	Report mg/L	
Chloride	Report µg/L	
Total Residual Chlorine	0.2 mg/L	FW= 11 µg/L SW= 7.5 µg/L
Total Suspended Solids	30 mg/L	
Antimony	206 µg/L	640 µg/L in MA 4.3 mg/L in NH
Arsenic	104 µg/L	FW= 10 µg/L SW= 36 µg/L
Cadmium	10.2 µg/L	FW= 0.25 µg/L SW= 8.8 µg/L in MA SW= 9.3 µg/L in NH
Chromium III	323 µg/L	FW= 74 µg/L SW= 100 µg/L
Chromium VI	323 µg/L	FW= 11 µg/L SW= 50 µg/L
Copper	242 µg/L	FW= 9 µg/L SW= 3.1 µg/L
Iron	5,000 µg/L	FW = 1,000 µg/L
Lead	160 µg/L	FW= 2.5 µg/L SW= 8.1 µg/L
Mercury	0.739 µg/L	FW= 0.77 µg/L SW= 0.94 µg/L
Nickel	1,450 µg/L	FW= 52 µg/L SW= 8.2 µg/L
Selenium	235.8 µg/L	FW= 5.0 µg/L SW= 71 µg/L
Silver	35.1 µg/L	FW= 3.2 µg/L SW= 1.9 µg/L
Zinc	420 µg/L	FW= 120 µg/L SW= 81 µg/L
Cyanide	178 mg/L	FW = 5.2 µg/L SW = 1.0 µg/L
B. Non-Halogenated Volatile Organic		
Total BTEX	100 µg/L	
Benzene	5.0 µg/L	
1,4 Dioxane	200 µg/L	

Acetone	7.97 mg/L	
Phenol	1,080 µg/L	300 µg/L
C. Halogenated Volatile Organic		
Carbon Tetrachloride	4.4 µg/L	1.6 µg/L in MA
1,2 Dichlorobenzene	600 µg/L	
1,3 Dichlorobenzene	320 µg/L	
1,4 Dichlorobenzene	5.0 µg/L	
Total dichlorobenzene	763 µg/L in NH	
1,1 Dichloroethane	70 µg/L	
1,2 Dichloroethane	5.0 µg/L	
1,1 Dichloroethylene	3.2 µg/L	
Ethylene Dibromide	0.05 µg/L	
Methylene Chloride	4.6 µg/L	
1,1,1 Trichloroethane	200 µg/L	
1,1,2 Trichloroethane	5.0 µg/L	
Trichloroethylene	5.0 µg/L	
Tetrachloroethylene	5.0 µg/L	3.3 µg/L in MA
cis-1,2 Dichloroethylene	70 µg/L	
Vinyl Chloride	2.0 µg/L	
D. Non-Halogenated Semi-Volatile		
Total Phthalates	190 µg/L	FW = 3.0 µg/L in NH SW = 3.4 µg/L in NH
Diethylhexyl phthalate	101 µg/L	2.2 µg/L in MA 5.9 µg/L in NH
Total Group I Polycyclic Aromatic	1.0 µg/L	As Individual PAHs
Benzo(a)anthracene	As Total Group I PAHs	0.0038 µg/L
Benzo(a)pyrene		0.0038 µg/L
Benzo(b)fluoranthene		0.0038 µg/L
Benzo(k)fluoranthene		0.0038 µg/L
Chrysene		0.0038 µg/L
Dibenzo(a,h)anthracene		0.0038 µg/L
Indeno(1,2,3-cd)pyrene		0.0038 µg/L
Total Group II Polycyclic Aromatic	100 µg/L	
Naphthalene	20 µg/L	
E. Halogenated Semi-Volatile Organic		
Total Polychlorinated Biphenyls	0.000064 µg/L	
Pentachlorophenol	1.0 µg/L	
F. Fuels Parameters		
Total Petroleum Hydrocarbons	5.0 mg/L	
Ethanol	Report mg/L	

Methyl-tert-Butyl Ether	70 µg/L	20 µg/L in MA
tert-Butyl Alcohol	120 µg/L in MA 40 µg/L in NH	
tert-Amyl Methyl Ether	90 µg/L in MA 140 µg/L in NH	

2.

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



con-test
ANALYTICAL LABORATORY

Doc# 277 Rev 5 2017

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

Client Vertex

Received By MAP Date 9/23/19 Time 1730

How were the samples received? In Cooler T No Cooler _____ On Ice T No Ice _____
Direct from Sampling _____ Ambient _____ Melted Ice _____

Were samples within Temperature? 2-6°C T By Gun # 5 Actual Temp - 5.6/4.6
By Blank # _____ Actual Temp - _____

Was Custody Seal Intact? NA Were Samples Tampered with? NA
Was COC Relinquished? F Does Chain Agree With Samples? T

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

Is COC in ink/ Legible? T Were samples received within holding time? T
Did COC include all pertinent Information? Client T Analysis T Sampler Name T
Project T ID's T Collection Dates/Times T

Are Sample labels filled out and legible? T
Are there Lab to Filters? F Who was notified? _____
Are there Rushes? F Who was notified? _____
Are there Short Holds? T Who was notified? inna

Is there enough Volume? T
Is there Headspace where applicable? F MS/MSD? F
Proper Media/Containers Used? T Is splitting samples required? F
Were trip blanks received? T On COC? MPX F
Do all samples have the proper pH? Acid ph=2 Base ph=9

Vials	#	Containers:	#	#	#	#
Unp-		1 Liter Amb.	8	1 Liter Plastic	4	16 oz Amb.
HCL-	8	500 mL Amb.		500 mL Plastic	6	8oz Amb/Clear
Meoh-		250 mL Amb.		250 mL Plastic	8	4oz Amb/Clear
Bisulfate-		Flashpoint		Col./Bacteria		2oz Amb/Clear
DI-		Other Glass	4	Other Plastic		Encore
Thiosulfate-		SOC Kit		Plastic Bag		Frozen:
Sulfuric-		Perchlorate		Ziplock		

Unused Media

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

Comments: