



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

July 27, 2017

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

Reference: **Notice of Intent (NOI) - Remediation General Permit (RGP)**
Town of Falmouth
89 Spring Bars Road
Falmouth, Massachusetts

Dear Sir/Madam:

On behalf of National Response Corporation (NRC), Lockwood Remediation Technologies, LLC (LRT) has prepared this Notice of Intent (NOI) for coverage under the United States Environmental Protection Agency's (EPA's) Remediation General Permit (RGP) under EPA's National Pollutants Discharge Elimination System (NPDES) program. This NOI was prepared in accordance with the general requirements of the NPDES and related guidance documentation provided by EPA. The completed NOI form is provided in Appendix A.

Site Information

This NOI has been prepared for the management of water generated during remediation efforts, specifically soil excavation proposed at the property located in Falmouth, Massachusetts (the Site). Excavation activities will take place on a small portion of the 9.59-acre parcel known as 89 Spring Bars Road. The Site is listed as a disposal site with the Massachusetts Department of Environmental Protection (MassDEP) under Release Tracking Number (RTN) RTN# 4-0026272. All excavation and dewatering activities are being completed in accordance with the Massachusetts Contingency Plan (MCP), specifically, the Immediate Response Action Plan that was submitted to the MassDEP on November 28, 2016.

Please refer to Figure 1 for a Locus Map and an overview of the immediate area surrounding the Site. The work area, located at 89 Spring Bars Road, is depicted in Figure 2 along with the proposed treated water discharge location.

Work Summary

The work scope at the site includes an excavation of impacted soils that encompasses an area of approximately 4,200 square feet. To complete portions of the excavations in the dry, dewatering is

required. All water generated from the dewatering of the excavations will be pumped to a water treatment system, depicted in Figure 3, prior to discharge to Little Pond. To characterize water from the proposed excavation area, LRT collected a representative groundwater sample from an onsite monitoring well (ARC103) on July 13, 2017. This sample was analyzed for the parameters in accordance with the NPDES RGP Activity Category I. The laboratory data report for this sample is provided in Appendix B.

Discharge and Receiving Surface Water Information

LRT collected a surface water sample from Little Pond on July 13, 2017. The sample was submitted for the following analyses: pH, total suspended solids (TSS), total recoverable metals, hardness and ammonia. Laboratory data reports for this sample are provided in Appendix B. The results of this sampling indicated detectable concentrations of iron above discharge standards; however, these concentrations can be treated with carbon in addition to bag filtration in order achieve concentrations below discharge standards. Refer to Figure 3 for the water treatment system layout.

Consultation with Federal Services

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

Coverage under NPDES RGP

It is our opinion that the proposed discharge is eligible for coverage under the NPDES RGP. On behalf of NRC, we are requesting coverage under the NPDES RGP for the discharge of treated wastewater during excavation activities to Little Pond.

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

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

Sincerely,
Lockwood Remediation Technologies, LLC

Kim Gravelle

Kim Gravelle
Project Manager

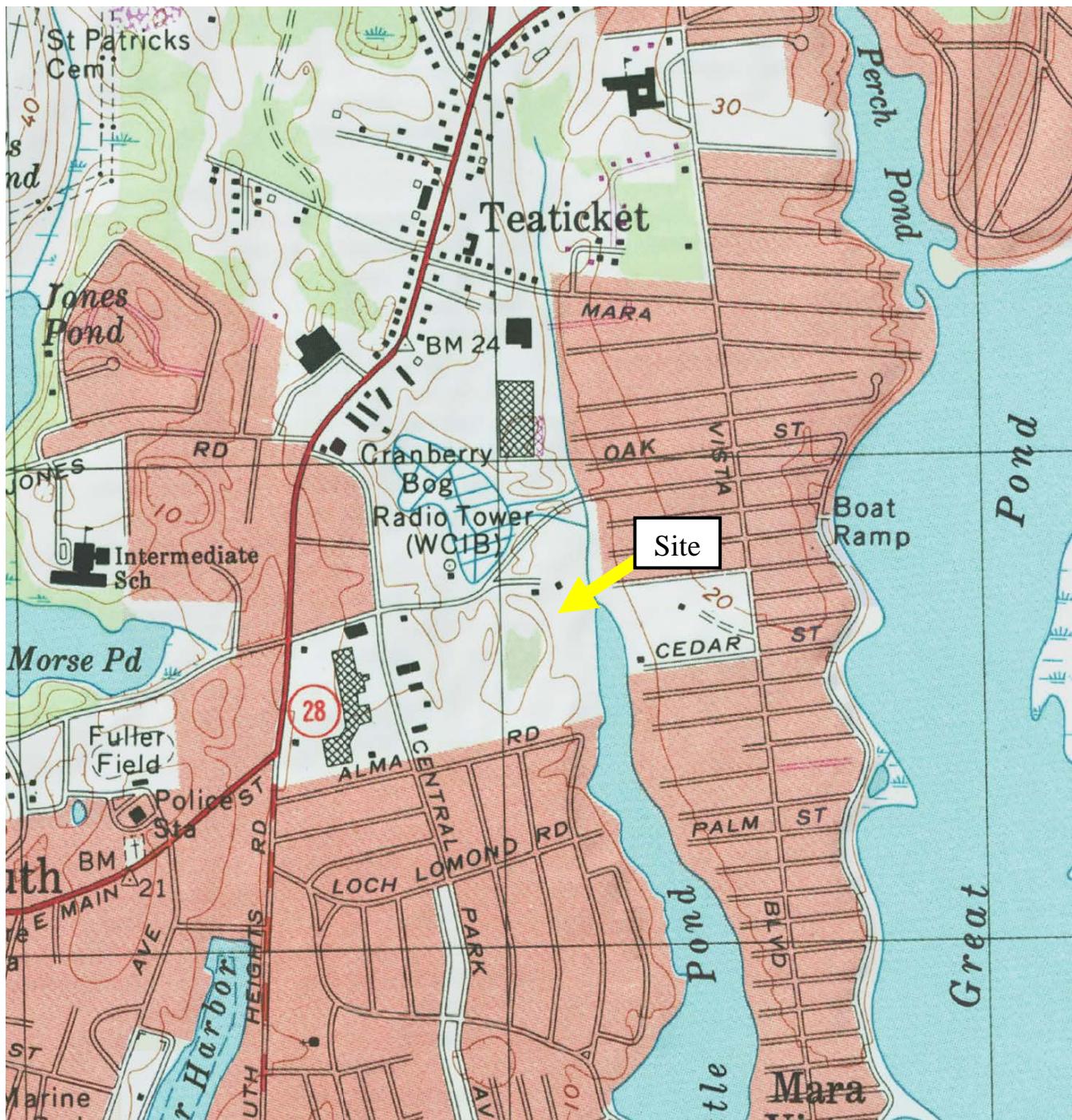
Paul Lockwood

Paul Lockwood
President

Encl: Figure 1 Locus Plan
Figure 2 Discharge Location
Figure 3 Water Treatment System Layout
Appendix A – NOI Form
Appendix B – Laboratory Data
Appendix C – Supplemental Information

cc: Mr. Keith Buchannan - National Response Corporation
Mr. James McLoughlin - Town of Falmouth

Figures



Source: Base Map from the following USGS Quadrangle Map: Falmouth - Massachusetts USGSStore.GOV

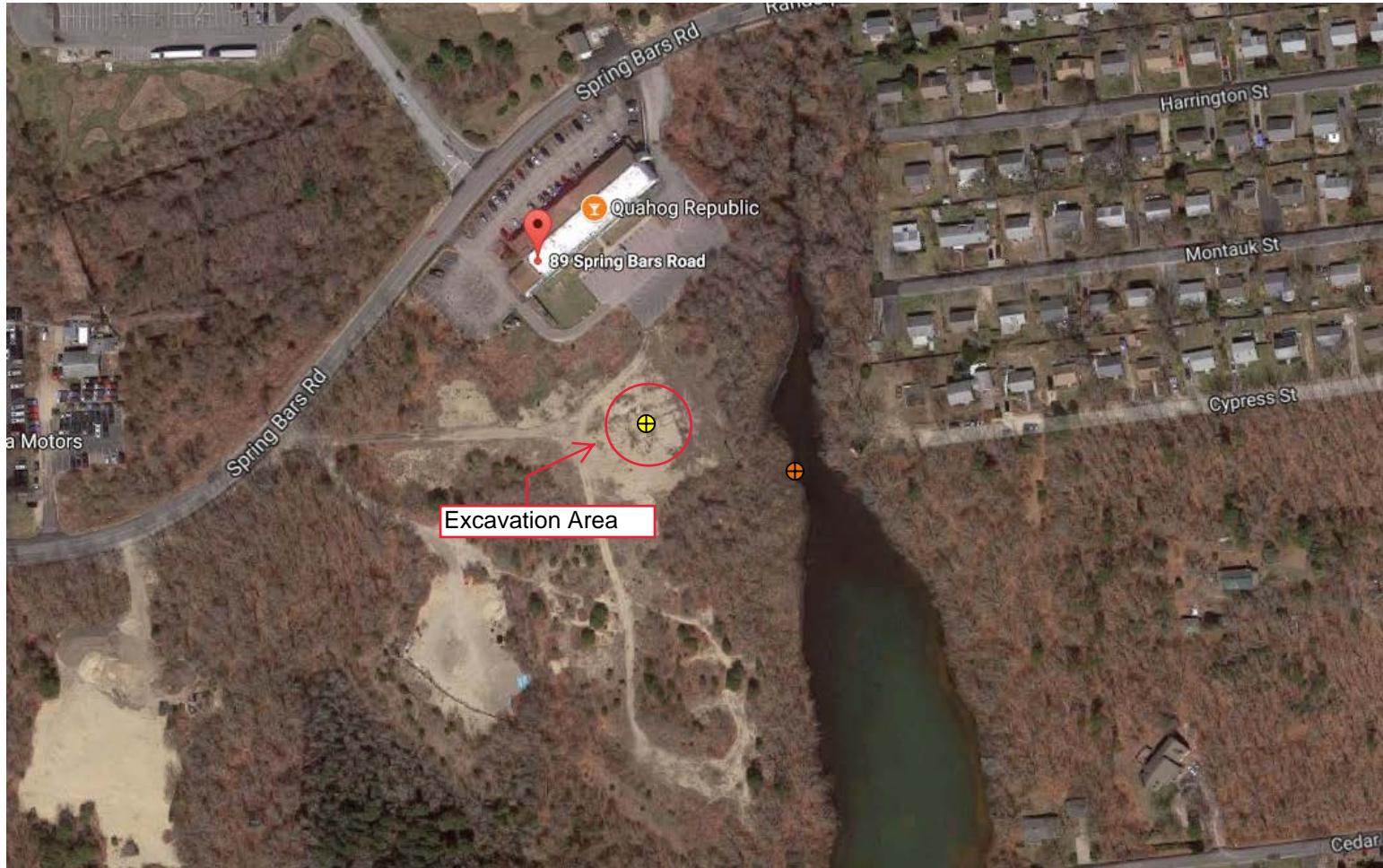
Notes

1. Figure is not to scale.



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Figure 1 – Locus Plan
 Town of Falmouth
 89 Spring Bars Road
 Falmouth, Massachusetts



Source: Google Maps

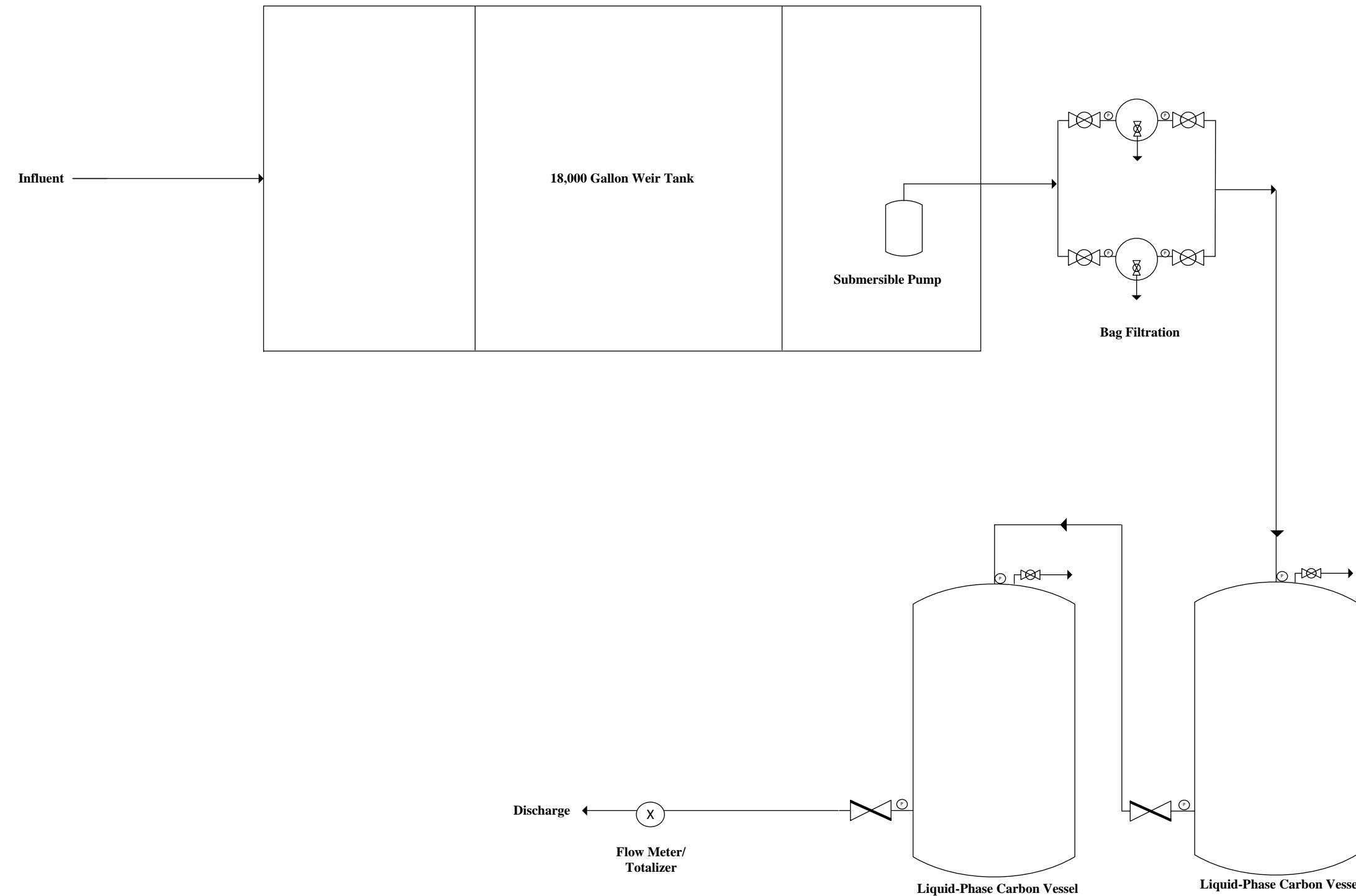
KEY

Site 
Discharge Location 



89 Crawford Street
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Figure 2 - Discharge Location
Town of Falmouth
89 Spring Bars Road
Falmouth, Massachusetts



Notes:

1. Figure not drawn to scale
2. System rated for 100 GPM



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

DESIGNED BY: LRT DRAWN BY: K. Gravelle
DATE: 7/19/17 REVISION:

Water Treatment System Schematic

**89 Spring Bars Road
Falmouth, Massachusetts**

PROJECT No.
2-1530

FIGURE No.
3

Appendix A
NOI Form

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

A. General site information:

1. Name of site:	Site address:		
	Street:		
	City:	State:	Zip:
2. Site owner Owner is (check one): <input type="checkbox"/> Federal <input type="checkbox"/> State/Tribal <input type="checkbox"/> Private <input type="checkbox"/> Other; if so, specify: _____	Contact Person:		
	Telephone:	Email:	
	Mailing address:		
	Street:	City:	State:
3. Site operator, if different than owner	Contact Person:		
	Telephone:	Email:	
	Mailing address:		
	Street:	City:	State:
4. NPDES permit number assigned by EPA: NPDES permit is (check all that apply): <input type="checkbox"/> RGP <input type="checkbox"/> DGP <input type="checkbox"/> CGP <input type="checkbox"/> MSGP <input type="checkbox"/> Individual NPDES permit <input type="checkbox"/> Other; if so, specify: _____	5. Other regulatory program(s) that apply to the site (check all that apply): <input type="checkbox"/> MA Chapter 21e; list RTN(s): <input type="checkbox"/> CERCLA <input type="checkbox"/> NH Groundwater Management Permit or <input type="checkbox"/> UIC Program Groundwater Release Detection Permit: <input type="checkbox"/> POTW Pretreatment <input type="checkbox"/> CWA Section 404		

B. Receiving water information:

1. Name of receiving water(s):	Waterbody identification of receiving water(s):	Classification of receiving water(s):
Receiving water is (check any that apply): <input type="checkbox"/> Outstanding Resource Water <input type="checkbox"/> Ocean Sanctuary <input type="checkbox"/> territorial sea <input type="checkbox"/> Wild and Scenic River		
2. Has the operator attached a location map in accordance with the instructions in B, above? (check one): <input type="checkbox"/> Yes <input type="checkbox"/> No Are sensitive receptors present near the site? (check one): <input type="checkbox"/> Yes <input type="checkbox"/> No If yes, specify:		
3. Indicate if the receiving water(s) is listed in the State's Integrated List of Waters (i.e., CWA Section 303(d)). Include which designated uses are impaired, and any pollutants indicated. Also, indicate if a final TMDL is available for any of the indicated pollutants. For more information, contact the appropriate State as noted in Part 4.6 of the RGP.		
4. Indicate the seven day-ten-year low flow (7Q10) of the receiving water determined in accordance with the instructions in Appendix V for sites located in Massachusetts and Appendix VI for sites located in New Hampshire.		
5. Indicate the requested dilution factor for the calculation of water quality-based effluent limitations (WQBELs) determined in accordance with the instructions in Appendix V for sites in Massachusetts and Appendix VI for sites in New Hampshire.		
6. Has the operator received confirmation from the appropriate State for the 7Q10 and dilution factor indicated? (check one): <input type="checkbox"/> Yes <input type="checkbox"/> No If yes, indicate date confirmation received:		
7. Has the operator attached a summary of receiving water sampling results as required in Part 4.2 of the RGP in accordance with the instruction in Appendix VIII? (check one): <input type="checkbox"/> Yes <input type="checkbox"/> No		

C. Source water information:

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

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

D. Discharge information

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

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 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) <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	
		b. If Activity Category III, IV, V, VI, VII or VIII: (check either G or H)	
		<input 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)	
		<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	d. If Category III-H, IV-H, V-H, VI-H, VII-H or VIII-H Contamination Type Categories A through F apply

4. Influent and Effluent Characteristics

Parameter	Known or believed absent	Known or believed present	# of samples	Test method (#)	Detection limit (µg/l)	Influent		Effluent Limitations	
						Daily maximum (µg/l)	Daily average (µg/l)	TBEL	WQBEL
A. Inorganics									
Ammonia								Report mg/L	---
Chloride								Report µg/l	---
Total Residual Chlorine								0.2 mg/L	
Total Suspended Solids								30 mg/L	---
Antimony								206 µg/L	
Arsenic								104 µg/L	
Cadmium								10.2 µg/L	
Chromium III								323 µg/L	
Chromium VI								323 µg/L	
Copper								242 µg/L	
Iron								5,000 µg/L	
Lead								160 µg/L	
Mercury								0.739 µg/L	
Nickel								1,450 µg/L	
Selenium								235.8 µg/L	
Silver								35.1 µg/L	
Zinc								420 µg/L	
Cyanide								178 mg/L	
B. Non-Halogenated VOCs									
Total BTEX								100 µg/L	---
Benzene								5.0 µg/L	---
1,4 Dioxane								200 µg/L	---
Acetone								7.97 mg/L	---
Phenol								1,080 µg/L	

E. Treatment system information

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

Adsorption/Absorption Advanced Oxidation Processes Air Stripping Granulated Activated Carbon (“GAC”)/Liquid Phase Carbon Adsorption
 Ion Exchange Precipitation/Coagulation/Flocculation Separation/Filtration Other; if so, specify:

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

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

Fractionation tanks Equalization tank Oil/water separator Mechanical filter Media filter
 Chemical feed tank Air stripping unit Bag filter Other; if so, specify:

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

Chlorination De-chlorination

3. Provide the **design flow capacity** in gallons per minute (gpm) of the most limiting component.

Indicate the most limiting component:

Is use of a flow meter feasible? (check one): Yes No, if so, provide justification:

Provide the proposed maximum effluent flow in gpm.

Provide the average effluent flow in gpm.

If Activity Category IV applies, indicate the estimated total volume of water that will be discharged:

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

F. Chemical and additive information

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

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

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

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

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

(check one): Yes No

G. Endangered Species Act eligibility determination

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

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

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

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

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

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

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

H. National Historic Preservation Act eligibility determination

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

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

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

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

I. Supplemental information

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

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

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

J. Certification requirement

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

BMPP certification statement: A BMPP will be developed and maintained that meets the requirements of this permit. The BMPP will be implemented on-site prior to initiation of discharge.

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

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

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

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

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

Signature: 

Date: 7/14/17

Print Name and Title: *Keith Buchanan (ABC) Project manager*

Appendix B
Laboratory Data

Dilution Factor	0.0	TBEL applies if bolded	WQBEL applies if bolded	Compliance Level applies if shown	
A. Inorganics					
Ammonia	Report	mg/L	---		
Chloride	Report	µg/L	---		
Total Residual Chlorine	0.2	mg/L	7.5	µg/L	50 µg/L
Total Suspended Solids	30	mg/L	---		
Antimony	206	µg/L	640	µg/L	
Arsenic	104	µg/L	36	µg/L	
Cadmium	10.2	µg/L	8.9	µg/L	
Chromium III	323	µg/L	100.0	µg/L	
Chromium VI	323	µg/L	50	µg/L	
Copper	242	µg/L	3.7	µg/L	
Iron	5000	µg/L	---	µg/L	
Lead	160	µg/L	8.5	µg/L	
Mercury	0.739	µg/L	1.11	µg/L	
Nickel	1450	µg/L	8.3	µg/L	
Selenium	235.8	µg/L	71	µg/L	
Silver	35.1	µg/L	2.2	µg/L	
Zinc	420	µg/L	86	µg/L	
Cyanide	178	mg/L	1.0	µg/L	5 µg/L
B. Non-Halogenated VOCs					
Total BTEX	100	µg/L	---		
Benzene	5.0	µg/L	---		
1,4 Dioxane	200	µg/L	---		
Acetone	7.97	mg/L	---		
Phenol	1,080	µg/L	300	µg/L	
C. Halogenated VOCs					
Carbon Tetrachloride	4.4		1.6	µg/L	
1,2 Dichlorobenzene	600	µg/L	---		
1,3 Dichlorobenzene	320	µg/L	---		
1,4 Dichlorobenzene	5.0	µg/L	---		
Total dichlorobenzene	---	µg/L	---		
1,1 Dichloroethane	70	µg/L	---		
1,2 Dichloroethane	5.0	µg/L	---		
1,1 Dichloroethylene	3.2	µg/L	---		
Ethylene Dibromide	0.05	µg/L	---		
Methylene Chloride	4.6	µg/L	---		
1,1,1 Trichloroethane	200	µg/L	---		
1,1,2 Trichloroethane	5.0	µg/L	---		
Trichloroethylene	5.0	µg/L	---		
Tetrachloroethylene	5.0	µg/L	3.3	µg/L	
cis-1,2 Dichloroethylene	70	µg/L	---		
Vinyl Chloride	2.0	µg/L	---		

D. Non-Halogenated SVOCs

Total Phthalates	190	µg/L	---	µg/L	
Diethylhexyl phthalate	101	µg/L	2.2	µg/L	
Total Group I Polycyclic Aromatic Hydrocarbons	1.0	µg/L	---		
Benzo(a)anthracene	1.0	µg/L	0.0038	µg/L	---
Benzo(a)pyrene	1.0	µg/L	0.0038	µg/L	---
Benzo(b)fluoranthene	1.0	µg/L	0.0038	µg/L	---
Benzo(k)fluoranthene	1.0	µg/L	0.0038	µg/L	---
Chrysene	1.0	µg/L	0.0038	µg/L	---
Dibenzo(a,h)anthracene	1.0	µg/L	0.0038	µg/L	---
Indeno(1,2,3-cd)pyrene	1.0	µg/L	0.0038	µg/L	---
Total Group II Polycyclic Aromatic Hydrocarbons	100	µg/L	---		
Naphthalene	20	µg/L	---		

E. Halogenated SVOCs

Total Polychlorinated Biphenyls	0.000064	µg/L	---	0.5	µg/L
Pentachlorophenol	1.0	µg/L	---		

F. Fuels Parameters

Total Petroleum Hydrocarbons	5.0	mg/L	---		
Ethanol	Report	mg/L	---		
Methyl-tert-Butyl Ether	70	µg/L	20	µg/L	
tert-Butyl Alcohol	120	µg/L	---		
tert-Amyl Methyl Ether	90	µg/L	---		



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

July 21, 2017

Tammie Hagie
Lockwood Remediation Technologies, LLC
89 Crawford Street
Leominster, MA 01453

Project Location: 89 Springs Bar Rd., Falmouth, MA

Client Job Number:

Project Number: 2-1530

Laboratory Work Order Number: 17G0506

Enclosed are results of analyses for samples received by the laboratory on July 13, 2017. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink that reads "Kerry K. McGee". The signature is fluid and cursive, with "Kerry" on the top line and "K. McGee" on the bottom line.

Kerry K. McGee
Project Manager

Table of Contents

Sample Summary	3
Case Narrative	4
Sample Results	5
17G0506-01	5
Sample Preparation Information	8
QC Data	9
Metals Analyses (Total)	9
B181610	9
B181611	9
B181656	10
Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)	11
B181625	11
B181948	11
Flag/Qualifier Summary	12
Certifications	13
Chain of Custody/Sample Receipt	14



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

Lockwood Remediation Technologies, LLC
 89 Crawford Street
 Leominster, MA 01453
 ATTN: Tammie Hagie

REPORT DATE: 7/21/2017

PURCHASE ORDER NUMBER:

PROJECT NUMBER: 2-1530

ANALYTICAL SUMMARY

WORK ORDER NUMBER: 17G0506

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

PROJECT LOCATION: 89 Springs Bar Rd., Falmouth, MA

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
Little Pond	17G0506-01	Ground Water		EPA 200.7	
				EPA 200.8	
				EPA 245.1	
				SM19-22 4500 NH3 C	MA M-MA-086/CT
					PH-0574/NY11148
				SM21-22 2340C	
				SM21-22 3500 Cr B	
				Tri Chrome Calc.	

CASE NARRATIVE SUMMARY

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

EPA 200.8**Qualifications:****DL-15**

Sample required a dilution due to low internal standard recovery of the lesser diluted digestion, reporting limit is elevated.

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

17G0506-01[Little Pond]

Arsenic

17G0506-01[Little Pond]

Cadmium

17G0506-01[Little Pond]

Chromium

17G0506-01[Little Pond]

Copper

17G0506-01[Little Pond]

Lead

17G0506-01[Little Pond]

Nickel

17G0506-01[Little Pond]

Selenium

17G0506-01[Little Pond]

Silver

17G0506-01[Little Pond]

Zinc

17G0506-01[Little Pond]

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.



Lisa A. Worthington
Project Manager



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

Project Location: 89 Springs Bar Rd., Falmouth, MA

Sample Description:

Work Order: 17G0506

Date Received: 7/13/2017

Field Sample #: Little Pond

Sampled: 7/13/2017 10:30

Sample ID: 17G0506-01Sample Matrix: Ground Water**Metals Analyses (Total)**

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Antimony	ND	10		µg/L	10	DL-15	EPA 200.8	7/14/17	7/18/17 5:36	MJH
Arsenic	ND	10		µg/L	10	DL-15	EPA 200.8	7/14/17	7/18/17 5:36	MJH
Cadmium	ND	2.0		µg/L	10	DL-15	EPA 200.8	7/14/17	7/18/17 5:36	MJH
Chromium	ND	100		µg/L	10	DL-15	EPA 200.8	7/14/17	7/18/17 5:36	MJH
Chromium, Trivalent	ND	0.010		mg/L	1		Tri Chrome Calc.	7/14/17	7/19/17 8:33	MJH
Copper	15	10		µg/L	10	DL-15	EPA 200.8	7/14/17	7/18/17 5:36	MJH
Iron	6.0	0.050		mg/L	1		EPA 200.7	7/14/17	7/19/17 18:43	SHN
Lead	ND	5.0		µg/L	10	DL-15	EPA 200.8	7/14/17	7/18/17 5:36	MJH
Mercury	ND	0.00010		mg/L	1		EPA 245.1	7/14/17	7/17/17 8:41	TJK
Nickel	ND	50		µg/L	10	DL-15	EPA 200.8	7/14/17	7/18/17 5:36	MJH
Selenium	17	50	14	µg/L	10	DL-15, J	EPA 200.8	7/14/17	7/18/17 5:36	MJH
Silver	ND	2.0		µg/L	10	DL-15	EPA 200.8	7/14/17	7/18/17 5:36	MJH
Zinc	ND	200		µg/L	10	DL-15	EPA 200.8	7/14/17	7/18/17 5:36	MJH



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

Project Location: 89 Springs Bar Rd., Falmouth, MA

Sample Description:

Work Order: 17G0506

Date Received: 7/13/2017

Sampled: 7/13/2017 10:30

Field Sample #: Little Pond

Sample ID: 17G0506-01

Sample Matrix: Ground Water

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

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Hardness	1200	10	mg/L	5		SM21-22 2340C	7/18/17	7/18/17 21:10	DJM
Hexavalent Chromium	ND	0.0040	mg/L	1		SM21-22 3500 Cr B	7/14/17	7/14/17 7:45	LL



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

Project Location: 89 Springs Bar Rd., Falmouth, MA

Sample Description:

Work Order: 17G0506

Date Received: 7/13/2017

Sampled: 7/13/2017 10:30

Field Sample #: Little Pond**Sample ID:** 17G0506-01Sample Matrix: Ground Water

Ammonia by 4500 NH3-BH

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Ammonia as NH3	0.329	0.075		mg/L	1		4500 NH3-BH		7/18/17 23:54	AAL



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Sample Extraction Data

Prep Method: EPA 200.7-EPA 200.7

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
17G0506-01 [Little Pond]	B181610	50.0	50.0	07/14/17

Prep Method: EPA 200.8-EPA 200.8

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
17G0506-01 [Little Pond]	B181611	50.0	50.0	07/14/17

Prep Method: EPA 245.1-EPA 245.1

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
17G0506-01 [Little Pond]	B181656	6.00	6.00	07/14/17

SM21-22 2340C

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
17G0506-01 [Little Pond]	B181948	50.0	50.0	07/18/17

SM21-22 3500 Cr B

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
17G0506-01 [Little Pond]	B181625	50.0	50.0	07/14/17

Prep Method: SW-846 3005A-Tri Chrome Calc.

Lab Number [Field ID]	Batch	Initial [mL]	Date
17G0506-01 [Little Pond]	B181613	1.00	07/14/17

QUALITY CONTROL

Metals Analyses (Total) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD RPD	RPD Limit	Notes
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Batch B181610 - EPA 200.7

Blank (B181610-BLK1)				Prepared: 07/14/17 Analyzed: 07/19/17								
Iron	ND	0.050	mg/L									
LCS (B181610-BS1)				Prepared: 07/14/17 Analyzed: 07/20/17								
Iron	2.13	0.050	mg/L	2.00	107	85-115						
LCS Dup (B181610-BSD1)				Prepared: 07/14/17 Analyzed: 07/20/17								
Iron	2.11	0.050	mg/L	2.00	106	85-115	1.12	20				
Duplicate (B181610-DUP1)				Source: 17G0506-01	Prepared: 07/14/17 Analyzed: 07/19/17							
Iron	6.06	0.050	mg/L				5.97	1.54				
Matrix Spike (B181610-MS1)				Source: 17G0506-01	Prepared: 07/14/17 Analyzed: 07/20/17							
Iron	8.29	0.050	mg/L	2.00	5.97	116	70-130					

Batch B181611 - EPA 200.8

Blank (B181611-BLK1)				Prepared: 07/14/17 Analyzed: 07/17/17						
Antimony	ND	1.0	µg/L							
Arsenic	ND	1.0	µg/L							
Cadmium	ND	0.20	µg/L							
Chromium	ND	10	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	20	µg/L							
LCS (B181611-BS1)				Prepared: 07/14/17 Analyzed: 07/18/17						
Antimony	265	5.0	µg/L	250	106	85-115				
Arsenic	262	5.0	µg/L	250	105	85-115				
Cadmium	261	1.0	µg/L	250	104	85-115				
Chromium	252	50	µg/L	250	101	85-115				
Copper	257	5.0	µg/L	250	103	85-115				
Lead	259	2.5	µg/L	250	104	85-115				
Nickel	255	25	µg/L	250	102	85-115				
Selenium	257	25	µg/L	250	103	85-115				
Silver	246	1.0	µg/L	250	98.6	85-115				
Zinc	265	100	µg/L	250	106	85-115				
LCS Dup (B181611-BSD1)				Prepared: 07/14/17 Analyzed: 07/18/17						
Antimony	259	5.0	µg/L	250	104	85-115	2.24	20		
Arsenic	257	5.0	µg/L	250	103	85-115	1.85	20		
Cadmium	255	1.0	µg/L	250	102	85-115	2.33	20		
Chromium	246	50	µg/L	250	98.5	85-115	2.41	20		
Copper	250	5.0	µg/L	250	100	85-115	2.52	20		
Lead	254	2.5	µg/L	250	102	85-115	1.82	20		
Nickel	249	25	µg/L	250	99.6	85-115	2.33	20		
Selenium	256	25	µg/L	250	103	85-115	0.270	20		
Silver	241	1.0	µg/L	250	96.3	85-115	2.31	20		
Zinc	260	100	µg/L	250	104	85-115	1.93	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	RPD Limit	Notes
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Batch B181611 - EPA 200.8

Duplicate (B181611-DUP1)		Source: 17G0506-01		Prepared: 07/14/17 Analyzed: 07/18/17					
Antimony	ND	10	µg/L		ND		NC	20	
Arsenic	ND	10	µg/L		ND		NC	20	
Cadmium	ND	2.0	µg/L		ND		NC	20	
Chromium	ND	100	µg/L		ND		NC	20	
Copper	15.6	10	µg/L		15.1		3.45	20	
Lead	ND	5.0	µg/L		ND		NC	20	
Nickel	ND	50	µg/L		ND		NC	20	
Selenium	20.6	50	µg/L		17.3		17.7	20	J
Silver	ND	2.0	µg/L		ND		NC	20	
Zinc	ND	200	µg/L		ND		NC	20	

Matrix Spike (B181611-MS1)		Source: 17G0506-01		Prepared: 07/14/17 Analyzed: 07/18/17					
Antimony	258	5.0	µg/L	250	ND	103	70-130		
Arsenic	270	5.0	µg/L	250	8.71	104	70-130		
Cadmium	226	1.0	µg/L	250	ND	90.4	70-130		
Chromium	268	50	µg/L	250	ND	107	70-130		
Copper	250	5.0	µg/L	250	15.1	93.8	70-130		
Lead	283	2.5	µg/L	250	3.55	112	70-130		
Nickel	249	25	µg/L	250	4.52	97.8	70-130		
Selenium	248	25	µg/L	250	17.3	92.2	70-130		
Silver	219	1.0	µg/L	250	ND	87.6	70-130		
Zinc	225	100	µg/L	250	43.4	72.8	70-130		

Batch B181656 - EPA 245.1

Blank (B181656-BLK1)				Prepared: 07/14/17 Analyzed: 07/17/17				
Mercury	ND	0.00010	mg/L					
LCS (B181656-BS1)					Prepared: 07/14/17 Analyzed: 07/17/17			
Mercury	0.00193	0.00010	mg/L	0.00200		96.4	85-115	
LCS Dup (B181656-BSD1)					Prepared: 07/14/17 Analyzed: 07/17/17			
Mercury	0.00195	0.00010	mg/L	0.00200		97.3	85-115	0.961
								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	RPD Limit	Notes
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Batch B181625 - SM21-22 3500 Cr B

Blank (B181625-BLK1)	Prepared & Analyzed: 07/14/17											
Hexavalent Chromium	ND	0.0040	mg/L									
LCS (B181625-BS1)	Prepared & Analyzed: 07/14/17											
Hexavalent Chromium	0.092	0.0040	mg/L	0.100	92.1	86.6-115						
LCS Dup (B181625-BSD1)	Prepared & Analyzed: 07/14/17											
Hexavalent Chromium	0.091	0.0040	mg/L	0.100	91.0	86.6-115	1.26	6.61				

Batch B181948 - SM21-22 2340C

Blank (B181948-BLK1)	Prepared & Analyzed: 07/18/17											
Hardness	ND	2.0	mg/L									
LCS (B181948-BS1)	Prepared & Analyzed: 07/18/17											
Hardness	68	4.0	mg/L	62.2	109	92.6-114						
LCS Dup (B181948-BSD1)	Prepared & Analyzed: 07/18/17											
Hardness	68	4.0	mg/L	62.2	109	92.6-114	0.00	5				



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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
DL	Method Detection Limit
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.

DL-15	Sample required a dilution due to low internal standard recovery of the lesser diluted digestion, reporting limit is elevated.
J	Detected but below the Reporting Limit (lowest calibration standard); therefore, result is an estimated concentration (CLP J-Flag).



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CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications		
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 Drinking Water			
Mercury	CT,MA,NH,NY,RI,ME,VA		
SM21-22 2340C in Water			
Hardness	CT,MA,NH,NY,RI,NC,ME,VA		
SM21-22 3500 Cr B in Water			
Hexavalent Chromium	NY,CT,NH,RI,ME,VA,NC		
The CON-TEST Environmental Laboratory operates under the following certifications and accreditations:			
Code	Description	Number	Expires
AIHA	AIHA-LAP, LLC - ISO17025:2005	100033	02/1/2018
MA	Massachusetts DEP	M-MA100	06/30/2018
CT	Connecticut Department of Public Health	PH-0567	09/30/2017
NY	New York State Department of Health	10899 NELAP	04/1/2018
NH-S	New Hampshire Environmental Lab	2516 NELAP	02/5/2018
RI	Rhode Island Department of Health	LAO00112	12/30/2017
NC	North Carolina Div. of Water Quality	652	12/31/2017
NJ	New Jersey DEP	MA007 NELAP	06/30/2018
FL	Florida Department of Health	E871027 NELAP	06/30/2018
VT	Vermont Department of Health Lead Laboratory	LL015036	07/30/2018
ME	State of Maine	2011028	06/9/2019
VA	Commonwealth of Virginia	460217	12/14/2017
NH-P	New Hampshire Environmental Lab	2557 NELAP	09/6/2017
VT-DW	Vermont Department of Health Drinking Water	VT-255716	06/12/2018
NC-DW	North Carolina Department of Health	25703	07/31/2018

39 Spruce St.
East Longmeadow, MA. 01028
P: 413-525-2332
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www.contestlabs.com



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	<u>Lockwood</u>		Date	<u>7/13/17</u>	Time	<u>1720</u>
Received By	<u>JM</u>	<u>T</u>	No Cooler	<u>T</u>	No Ice	<u> </u>
How were the samples received?	In Cooler	<u>T</u>	On Ice	<u>T</u>	Ambient	<u> </u>
	Direct from Sampling	<u> </u>	Melted Ice	<u> </u>		<u> </u>
Were samples within Temperature? 2-6°C	<u>T</u>	By Gun #	<u>1</u>	Actual Temp -	<u>5.3</u>	<u> </u>
Was Custody Seal Intact?	<u>N/A</u>	By Blank #	<u> </u>	Actual Temp -	<u> </u>	<u> </u>
Was COC Relinquished ?	<u>T</u>			Were Samples Tampered with?	<u>F</u>	<u> </u>
Are there broken/leaking/loose caps on any samples?	<u> </u>			Does Chain Agree With Samples?	<u>T</u>	<u> </u>
Is COC in ink/ Legible?	<u>T</u>			Were samples received within holding time?	<u>T</u>	<u> </u>
Did COC include all pertinent Information?	Client	<u>T</u>	Analysis	<u>T</u>	Sampler Name	<u>T</u>
	Project	<u>T</u>	ID's	<u>T</u>	Collection Dates/Times	<u>T</u>
Are Sample labels filled out and legible?	<u>T</u>					
Are there Lab to Filters?	<u>N/A</u>			Who was notified?	<u> </u>	<u> </u>
Are there Rushes?	<u>N/A</u>			Who was notified?	<u> </u>	<u> </u>
Are there Short Holds?	<u>N/A</u>			Who was notified?	<u> </u>	<u> </u>
Is there enough Volume?	<u>T</u>					
Is there Headspace where applicable?	<u>N/A</u>			MS/MSD?	<u>N/A</u>	<u> </u>
Proper Media/Containers Used?	<u>T</u>			Is splitting samples required?	<u> </u>	<u> </u>
Were trip blanks received?	<u>N/A</u>			On COC?	<u>N/A</u>	<u>N/A</u>
Do all samples have the proper pH?			Acid	<u>T</u>	Base	<u> </u>

Vials	#	Containers:	#	#	#	#
Unp-		1 Liter Amb.	1	1 Liter Plastic		16 oz Amb.
HCL-		500 mL Amb.		500 mL Plastic		8oz Amb/Clear
Meoh-		250 mL Amb.		250 mL Plastic	3	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		

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:



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

July 25, 2017

Tammie Hagie
Lockwood Remediation Technologies, LLC
89 Crawford Street
Leominster, MA 01453

Project Location: 89 Springs Bar Rd., Falmouth, MA

Client Job Number:

Project Number: 2-1530

Laboratory Work Order Number: 17G0504

Enclosed are results of analyses for samples received by the laboratory on July 13, 2017. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink that reads 'Kerry K. McGee'.

Kerry K. McGee
Project Manager

Table of Contents

Sample Summary	4
Case Narrative	5
Sample Results	8
17G0504-01	8
Sample Preparation Information	18
QC Data	20
Volatile Organic Compounds by GC/MS	20
B181769	20
Semivolatile Organic Compounds by GC/MS	22
B181884	22
Semivolatile Organic Compounds by - GC/MS	24
B181763	24
Polychlorinated Biphenyls By GC/ECD	28
B181979	28
Metals Analyses (Total)	29
B181610	29
B181611	29
B181656	30
Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)	31
B181617	31
B181625	31
B181631	31
B181948	31
B182087	32
Dual Column RPD Report	33

Table of Contents (continued)

Flag/Qualifier Summary	35
Certifications	36
Chain of Custody/Sample Receipt	41



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

Lockwood Remediation Technologies, LLC
89 Crawford Street
Leominster, MA 01453
ATTN: Tammie Hagie

REPORT DATE: 7/25/2017

PURCHASE ORDER NUMBER:

PROJECT NUMBER: 2-1530

ANALYTICAL SUMMARY

WORK ORDER NUMBER: 17G0504

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

PROJECT LOCATION: 89 Springs Bar Rd., Falmouth, MA

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
ARC103	17G0504-01	Ground Water		-	NH NELAC 2539/ MA M-MA014/CT PH-0494 +others
				EPA 1664B	
				EPA 200.7	
				EPA 200.8	
				EPA 245.1	
				EPA 300.0	NY11393/MA-MAI138/M A1110
				EPA 608	
				EPA 624	
				EPA 625	
				SM19-22 4500 NH3 C	MA M-MA-086/CT PH-0574/NY11148
				SM21-22 2340C	
				SM21-22 2540D	
				SM21-22 3500 Cr B	
				SM21-22 4500 CL G	
				SM21-22 4500 CN E	MA M-MA-086/CT PH-0574/NY11148
				SW-846 8270D	
				Tri Chrome Calc.	



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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

EPA 1664B

Qualifications:

MS-07

Matrix spike recovery is outside of control limits. Analysis is in control based on laboratory fortified blank recovery. Possibility of sample matrix effects that lead to low bias for reported result or non-homogeneous sample aliquot cannot be eliminated.

Analyte & Samples(s) Qualified:

Silica Gel Treated HEM (SGT-HE)

17G0504-01[ARC103], B182087-MS1

EPA 608

Qualifications:

L-07

Either laboratory fortified blank/laboratory control sample or duplicate recovery is outside of control limits, but the other is within limits. RPD between the two LFB/LCS results is within method specified criteria.

Analyte & Samples(s) Qualified:

Aroclor-1016

B181979-BS1

EPA 624

Qualifications:

DL-01

Elevated reporting limits for all volatile compounds due to foaming sample matrix.

Analyte & Samples(s) Qualified:

17G0504-01[ARC103]

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:

Acetone

17G0504-01[ARC103], B181769-BLK1, B181769-BS1

EPA 625

Qualifications:

L-04

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

Analyte & Samples(s) Qualified:

Benzidine

17G0504-01[ARC103], B181763-BLK1, B181763-BS1, B181763-BSD1

RL-12

Elevated reporting limit due to matrix interference.

Analyte & Samples(s) Qualified:

17G0504-01[ARC103]

V-04

Initial calibration did not meet method specifications. Compound was calibrated using a response factor where %RSD is outside of method specified criteria.

Analyte & Samples(s) Qualified:

Benzidine

17G0504-01[ARC103], B181763-BLK1, B181763-BS1, B181763-BSD1

V-05

Continuing calibration did not meet method specifications and was biased on the low side for this compound. Increased uncertainty is associated with the reported value which is likely to be biased on the low side.

Analyte & Samples(s) Qualified:

Benzidine

17G0504-01[ARC103], B181763-BLK1, B181763-BS1, B181763-BSD1



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

V-19

Initial calibration did not meet method specifications. Compound was calibrated using linear regression with correlation coefficient <0.99.
Reduced precision and accuracy may be associated with reported result.

Analyte & Samples(s) Qualified:

Hexachlorocyclopentadiene

17G0504-01[ARC103]

V-20

Continuing calibration did not meet method specifications and was biased on the high side. Data validation is not affected since sample result was "not detected" for this compound.

Analyte & Samples(s) Qualified:

Di-n-octylphthalate

17G0504-01[ARC103]

N-Nitrosodimethylamine

B181763-BLK1, B181763-BS1, B181763-BSD1

SW-846 8270D

Qualifications:

L-07

Either laboratory fortified blank/laboratory control sample or duplicate recovery is outside of control limits, but the other is within limits. RPD between the two LFB/LCS results is within method specified criteria.

Analyte & Samples(s) Qualified:

Bis(2-Ethylhexyl)phthalate

B181884-BSD2

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

17G0504-01RE1[ARC103]

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.

Lisa A. Worthington
Project Manager



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

Project Location: 89 Springs Bar Rd., Falmouth, MA

Sample Description:

Work Order: 17G0504

Date Received: 7/13/2017

Field Sample #: ARC103

Sampled: 7/13/2017 09:36

Sample ID: 17G0504-01

Sample Matrix: Ground Water

Sample Flags: DL-01

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acetone	ND	100	9.7	µg/L	2	L-03	EPA 624	7/17/17	7/17/17 22:49	EEH
tert-Amyl Methyl Ether (TAME)	ND	1.0	0.21	µg/L	2		EPA 624	7/17/17	7/17/17 22:49	EEH
Benzene	ND	2.0	0.24	µg/L	2		EPA 624	7/17/17	7/17/17 22:49	EEH
tert-Butyl Alcohol (TBA)	ND	40	4.3	µg/L	2		EPA 624	7/17/17	7/17/17 22:49	EEH
Carbon Tetrachloride	ND	4.0	0.49	µg/L	2		EPA 624	7/17/17	7/17/17 22:49	EEH
1,2-Dichlorobenzene	ND	4.0	0.34	µg/L	2		EPA 624	7/17/17	7/17/17 22:49	EEH
1,3-Dichlorobenzene	ND	4.0	0.34	µg/L	2		EPA 624	7/17/17	7/17/17 22:49	EEH
1,4-Dichlorobenzene	ND	4.0	0.30	µg/L	2		EPA 624	7/17/17	7/17/17 22:49	EEH
1,2-Dichloroethane	ND	4.0	0.39	µg/L	2		EPA 624	7/17/17	7/17/17 22:49	EEH
cis-1,2-Dichloroethylene	ND	2.0	0.29	µg/L	2		EPA 624	7/17/17	7/17/17 22:49	EEH
1,1-Dichloroethane	ND	4.0	0.32	µg/L	2		EPA 624	7/17/17	7/17/17 22:49	EEH
1,1-Dichloroethylene	ND	4.0	0.42	µg/L	2		EPA 624	7/17/17	7/17/17 22:49	EEH
1,4-Dioxane	ND	100	53	µg/L	2		EPA 624	7/17/17	7/17/17 22:49	EEH
Ethylbenzene	1.1	4.0	0.26	µg/L	2	J	EPA 624	7/17/17	7/17/17 22:49	EEH
Methyl tert-Butyl Ether (MTBE)	ND	4.0	0.18	µg/L	2		EPA 624	7/17/17	7/17/17 22:49	EEH
Methylene Chloride	ND	10	6.4	µg/L	2		EPA 624	7/17/17	7/17/17 22:49	EEH
Tetrachloroethylene	ND	4.0	0.54	µg/L	2		EPA 624	7/17/17	7/17/17 22:49	EEH
Toluene	ND	2.0	0.34	µg/L	2		EPA 624	7/17/17	7/17/17 22:49	EEH
1,1,1-Trichloroethane	ND	4.0	0.26	µg/L	2		EPA 624	7/17/17	7/17/17 22:49	EEH
1,1,2-Trichloroethane	ND	4.0	0.47	µg/L	2		EPA 624	7/17/17	7/17/17 22:49	EEH
Trichloroethylene	ND	4.0	0.40	µg/L	2		EPA 624	7/17/17	7/17/17 22:49	EEH
Vinyl Chloride	ND	4.0	0.27	µg/L	2		EPA 624	7/17/17	7/17/17 22:49	EEH
m+p Xylene	0.58	4.0	0.51	µg/L	2	J	EPA 624	7/17/17	7/17/17 22:49	EEH
o-Xylene	0.34	4.0	0.26	µg/L	2	J	EPA 624	7/17/17	7/17/17 22:49	EEH
Surrogates	% Recovery	Recovery Limits			Flag/Qual					
1,2-Dichloroethane-d4	92.6	70-130						7/17/17 22:49		
Toluene-d8	105	70-130						7/17/17 22:49		
4-Bromofluorobenzene	101	70-130						7/17/17 22:49		



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

Project Location: 89 Springs Bar Rd., Falmouth, MA

Sample Description:

Work Order: 17G0504

Date Received: 7/13/2017

Field Sample #: ARC103

Sampled: 7/13/2017 09:36

Sample ID: 17G0504-01

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	ND	0.050	0.050	µg/L	1		SW-846 8270D	7/18/17	7/20/17 12:23	CJM
Benzo(a)pyrene	ND	0.10	0.10	µg/L	1		SW-846 8270D	7/18/17	7/20/17 12:23	CJM
Benzo(b)fluoranthene	ND	0.050	0.050	µg/L	1		SW-846 8270D	7/18/17	7/20/17 12:23	CJM
Benzo(k)fluoranthene	ND	0.20	0.20	µg/L	1		SW-846 8270D	7/18/17	7/20/17 12:23	CJM
Bis(2-Ethylhexyl)phthalate	0.72	1.0	0.020	µg/L	1	J	SW-846 8270D	7/18/17	7/21/17 10:45	BGL
Chrysene	ND	0.20	0.20	µg/L	1		SW-846 8270D	7/18/17	7/20/17 12:23	CJM
Dibenz(a,h)anthracene	ND	0.20	0.20	µg/L	1		SW-846 8270D	7/18/17	7/20/17 12:23	CJM
Indeno(1,2,3-cd)pyrene	ND	0.20	0.20	µg/L	1		SW-846 8270D	7/18/17	7/20/17 12:23	CJM
Pentachlorophenol	ND	1.0	0.34	µg/L	1		SW-846 8270D	7/18/17	7/20/17 12:23	CJM
Surrogates		% Recovery		Recovery Limits		Flag/Qual				
2-Fluorophenol		48.6		15-110					7/20/17 12:23	
2-Fluorophenol		38.6		15-110					7/21/17 10:45	
Phenol-d6		35.6		15-110					7/20/17 12:23	
Phenol-d6		24.5		15-110					7/21/17 10:45	
Nitrobenzene-d5		58.4		30-130					7/21/17 10:45	
Nitrobenzene-d5		69.9		30-130					7/20/17 12:23	
2-Fluorobiphenyl		53.7		30-130					7/20/17 12:23	
2-Fluorobiphenyl		64.0		30-130					7/21/17 10:45	
2,4,6-Tribromophenol	114	*		15-110		S-07			7/21/17 10:45	
p-Terphenyl-d14		59.7		30-130					7/20/17 12:23	
p-Terphenyl-d14		99.2		30-130					7/21/17 10:45	



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

Project Location: 89 Springs Bar Rd., Falmouth, MA

Sample Description:

Work Order: 17G0504

Date Received: 7/13/2017

Field Sample #: ARC103

Sampled: 7/13/2017 09:36

Sample ID: 17G0504-01

Sample Matrix: Ground Water

Sample Flags: RL-12

Semivolatile Organic Compounds by - GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acenaphthene	ND	9.2	µg/L	2		EPA 625	7/17/17	7/18/17 20:32	BGL
Acenaphthylene	ND	9.2	µg/L	2		EPA 625	7/17/17	7/18/17 20:32	BGL
Anthracene	ND	9.2	µg/L	2		EPA 625	7/17/17	7/18/17 20:32	BGL
Benzidine	ND	37	µg/L	2	V-04, V-05, L-04	EPA 625	7/17/17	7/18/17 20:32	BGL
Benzo(g,h,i)perylene	ND	9.2	µg/L	2		EPA 625	7/17/17	7/18/17 20:32	BGL
4-Bromophenylphenylether	ND	18	µg/L	2		EPA 625	7/17/17	7/18/17 20:32	BGL
Butylbenzylphthalate	ND	18	µg/L	2		EPA 625	7/17/17	7/18/17 20:32	BGL
4-Chloro-3-methylphenol	ND	18	µg/L	2		EPA 625	7/17/17	7/18/17 20:32	BGL
Bis(2-chloroethyl)ether	ND	18	µg/L	2		EPA 625	7/17/17	7/18/17 20:32	BGL
Bis(2-chloroisopropyl)ether	ND	18	µg/L	2		EPA 625	7/17/17	7/18/17 20:32	BGL
2-Chloronaphthalene	ND	18	µg/L	2		EPA 625	7/17/17	7/18/17 20:32	BGL
2-Chlorophenol	ND	18	µg/L	2		EPA 625	7/17/17	7/18/17 20:32	BGL
4-Chlorophenylphenylether	ND	18	µg/L	2		EPA 625	7/17/17	7/18/17 20:32	BGL
Di-n-butylphthalate	ND	18	µg/L	2		EPA 625	7/17/17	7/18/17 20:32	BGL
1,3-Dichlorobenzene	ND	9.2	µg/L	2		EPA 625	7/17/17	7/18/17 20:32	BGL
1,4-Dichlorobenzene	ND	9.2	µg/L	2		EPA 625	7/17/17	7/18/17 20:32	BGL
1,2-Dichlorobenzene	ND	9.2	µg/L	2		EPA 625	7/17/17	7/18/17 20:32	BGL
3,3-Dichlorobenzidine	ND	18	µg/L	2		EPA 625	7/17/17	7/18/17 20:32	BGL
2,4-Dichlorophenol	ND	18	µg/L	2		EPA 625	7/17/17	7/18/17 20:32	BGL
Diethylphthalate	ND	18	µg/L	2		EPA 625	7/17/17	7/18/17 20:32	BGL
2,4-Dimethylphenol	ND	18	µg/L	2		EPA 625	7/17/17	7/18/17 20:32	BGL
Dimethylphthalate	ND	18	µg/L	2		EPA 625	7/17/17	7/18/17 20:32	BGL
4,6-Dinitro-2-methylphenol	ND	18	µg/L	2		EPA 625	7/17/17	7/18/17 20:32	BGL
2,4-Dinitrophenol	ND	18	µg/L	2		EPA 625	7/17/17	7/18/17 20:32	BGL
2,4-Dinitrotoluene	ND	18	µg/L	2		EPA 625	7/17/17	7/18/17 20:32	BGL
2,6-Dinitrotoluene	ND	18	µg/L	2		EPA 625	7/17/17	7/18/17 20:32	BGL
Di-n-octylphthalate	ND	18	µg/L	2	V-20	EPA 625	7/17/17	7/18/17 20:32	BGL
1,2-Diphenylhydrazine (as Azobenzene)	ND	18	µg/L	2		EPA 625	7/17/17	7/18/17 20:32	BGL
Bis(2-Ethylhexyl)phthalate	ND	18	µg/L	2		EPA 625	7/17/17	7/18/17 20:32	BGL
Fluoranthene	ND	9.2	µg/L	2		EPA 625	7/17/17	7/18/17 20:32	BGL
Fluorene	11	9.2	µg/L	2		EPA 625	7/17/17	7/18/17 20:32	BGL
Hexachlorobenzene	ND	18	µg/L	2		EPA 625	7/17/17	7/18/17 20:32	BGL
Hexachlorobutadiene	ND	18	µg/L	2		EPA 625	7/17/17	7/18/17 20:32	BGL
Hexachlorocyclopentadiene	ND	18	µg/L	2	V-19	EPA 625	7/17/17	7/18/17 20:32	BGL
Hexachloroethane	ND	18	µg/L	2		EPA 625	7/17/17	7/18/17 20:32	BGL
Isophorone	ND	18	µg/L	2		EPA 625	7/17/17	7/18/17 20:32	BGL
Naphthalene	13	9.2	µg/L	2		EPA 625	7/17/17	7/18/17 20:32	BGL
Nitrobenzene	ND	18	µg/L	2		EPA 625	7/17/17	7/18/17 20:32	BGL
2-Nitrophenol	ND	18	µg/L	2		EPA 625	7/17/17	7/18/17 20:32	BGL
4-Nitrophenol	ND	18	µg/L	2		EPA 625	7/17/17	7/18/17 20:32	BGL
N-Nitrosodimethylamine	ND	18	µg/L	2		EPA 625	7/17/17	7/18/17 20:32	BGL
N-Nitrosodiphenylamine	ND	18	µg/L	2		EPA 625	7/17/17	7/18/17 20:32	BGL
N-Nitrosodi-n-propylamine	ND	18	µg/L	2		EPA 625	7/17/17	7/18/17 20:32	BGL
2-Methylnaphthalene	79	9.2	µg/L	2		EPA 625	7/17/17	7/18/17 20:32	BGL



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

Project Location: 89 Springs Bar Rd., Falmouth, MA

Sample Description:

Work Order: 17G0504

Date Received: 7/13/2017

Field Sample #: ARC103

Sampled: 7/13/2017 09:36

Sample ID: 17G0504-01

Sample Matrix: Ground Water

Sample Flags: RL-12

Semivolatile Organic Compounds by - GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Phenanthrene	17	9.2	µg/L	2		EPA 625	7/17/17	7/18/17 20:32	BGL
2-Methylphenol	ND	18	µg/L	2		EPA 625	7/17/17	7/18/17 20:32	BGL
Phenol	ND	18	µg/L	2		EPA 625	7/17/17	7/18/17 20:32	BGL
3/4-Methylphenol	ND	18	µg/L	2		EPA 625	7/17/17	7/18/17 20:32	BGL
Pyrene	ND	9.2	µg/L	2		EPA 625	7/17/17	7/18/17 20:32	BGL
1,2,4-Trichlorobenzene	ND	9.2	µg/L	2		EPA 625	7/17/17	7/18/17 20:32	BGL
2,4,6-Trichlorophenol	ND	18	µg/L	2		EPA 625	7/17/17	7/18/17 20:32	BGL
Surrogates	% Recovery	Recovery Limits	Flag/Qual						
2-Fluorophenol	44.8	15-110							7/18/17 20:32
Phenol-d6	31.5	15-110							7/18/17 20:32
Nitrobenzene-d5	75.6	30-130							7/18/17 20:32
2-Fluorobiphenyl	70.6	30-130							7/18/17 20:32
2,4,6-Tribromophenol	84.1	15-110							7/18/17 20:32
p-Terphenyl-d14	78.3	30-130							7/18/17 20:32



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

Project Location: 89 Springs Bar Rd., Falmouth, MA

Sample Description:

Work Order: 17G0504

Date Received: 7/13/2017

Field Sample #: ARC103

Sampled: 7/13/2017 09:36

Sample ID: 17G0504-01

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]	ND	0.10	0.057	µg/L	1		EPA 608	7/19/17	7/19/17 23:37	KAL
Aroclor-1221 [1]	ND	0.10	0.062	µg/L	1		EPA 608	7/19/17	7/19/17 23:37	KAL
Aroclor-1232 [1]	ND	0.10	0.038	µg/L	1		EPA 608	7/19/17	7/19/17 23:37	KAL
Aroclor-1242 [1]	ND	0.10	0.054	µg/L	1		EPA 608	7/19/17	7/19/17 23:37	KAL
Aroclor-1248 [1]	ND	0.10	0.064	µg/L	1		EPA 608	7/19/17	7/19/17 23:37	KAL
Aroclor-1254 [1]	ND	0.10	0.071	µg/L	1		EPA 608	7/19/17	7/19/17 23:37	KAL
Aroclor-1260 [1]	ND	0.10	0.073	µg/L	1		EPA 608	7/19/17	7/19/17 23:37	KAL
Surrogates	% Recovery	Recovery Limits			Flag/Qual					
Decachlorobiphenyl [1]	82.9	30-150								7/19/17 23:37
Decachlorobiphenyl [2]	87.0	30-150								7/19/17 23:37
Tetrachloro-m-xylene [1]	71.2	30-150								7/19/17 23:37
Tetrachloro-m-xylene [2]	75.5	30-150								7/19/17 23:37



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

Project Location: 89 Springs Bar Rd., Falmouth, MA

Sample Description:

Work Order: 17G0504

Date Received: 7/13/2017

Field Sample #: ARC103

Sampled: 7/13/2017 09:36

Sample ID: 17G0504-01

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	7/14/17	7/17/17 18:29	MJH
Arsenic	10	1.0		µg/L	1		EPA 200.8	7/14/17	7/17/17 18:29	MJH
Cadmium	0.51	0.20		µg/L	1		EPA 200.8	7/14/17	7/17/17 18:29	MJH
Chromium	160	10		µg/L	1		EPA 200.8	7/14/17	7/17/17 18:29	MJH
Chromium, Trivalent	0.16	0.010		mg/L	1		Tri Chrome Calc.	7/14/17	7/19/17 8:30	MJH
Copper	35	1.0		µg/L	1		EPA 200.8	7/14/17	7/17/17 18:29	MJH
Iron	39	0.050		mg/L	1		EPA 200.7	7/14/17	7/19/17 19:15	SHN
Lead	50	0.50		µg/L	1		EPA 200.8	7/14/17	7/17/17 18:29	MJH
Mercury	ND	0.00010		mg/L	1		EPA 245.1	7/14/17	7/17/17 8:40	TJK
Nickel	37	5.0		µg/L	1		EPA 200.8	7/14/17	7/17/17 18:29	MJH
Selenium	ND	5.0	1.4	µg/L	1		EPA 200.8	7/14/17	7/17/17 18:29	MJH
Silver	ND	0.20		µg/L	1		EPA 200.8	7/14/17	7/17/17 18:29	MJH
Zinc	230	20		µg/L	1		EPA 200.8	7/14/17	7/17/17 18:29	MJH



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

Project Location: 89 Springs Bar Rd., Falmouth, MA

Sample Description:

Work Order: 17G0504

Date Received: 7/13/2017

Sampled: 7/13/2017 09:36

Field Sample #: ARC103

Sample ID: 17G0504-01

Sample Matrix: Ground Water

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

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Chlorine, Residual	ND	0.020	mg/L	1		SM21-22 4500 CL G	7/14/17	7/14/17 7:30	LL
Hardness	150	2.0	mg/L	1		SM21-22 2340C	7/18/17	7/18/17 21:10	DJM
Hexavalent Chromium	ND	0.0040	mg/L	1		SM21-22 3500 Cr B	7/14/17	7/14/17 7:45	LL
Total Suspended Solids	6400	50	mg/L	1		SM21-22 2540D	7/14/17	7/14/17 15:00	LL
Silica Gel Treated HEM (SGT-HEM)	3.1	1.4	mg/L	1	MS-07	EPA 1664B	7/20/17	7/20/17 10:00	LL



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

Project Location: 89 Springs Bar Rd., Falmouth, MA

Sample Description:

Work Order: 17G0504

Date Received: 7/13/2017

Sampled: 7/13/2017 09:36

Field Sample #: ARC103

Sample ID: 17G0504-01

Sample Matrix: Ground Water

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

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Ammonia as N	0.232	0.075	mg/L	1		SM19-22 4500 NH3 C		7/18/17 23:57	AAL
Cyanide	0.003	0.005	mg/L	1		SM21-22 4500 CN E		7/17/17 13:31	AAL



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

Project Location: 89 Springs Bar Rd., Falmouth, MA

Sample Description:

Work Order: 17G0504

Date Received: 7/13/2017

Sampled: 7/13/2017 09:36

Field Sample #: ARC103

Sample ID: 17G0504-01

Sample Matrix: Ground Water

Miscellaneous Test

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Ethanol by 1671	ND	2000	µg/L	1		Ethanol by 1671		7/19/17 13:34	TAL



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

Project Location: 89 Springs Bar Rd., Falmouth, MA

Sample Description:

Work Order: 17G0504

Date Received: 7/13/2017

Sampled: 7/13/2017 09:36

Field Sample #: ARC103

Sample ID: 17G0504-01

Sample Matrix: Ground Water

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

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Chloride	4.16	1	mg/L	1		EPA 300.0		7/24/17 0:00	ESA



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Sample Extraction Data

EPA 1664B

Lab Number [Field ID]	Batch	Initial [mL]	Date
17G0504-01 [ARC103]	B182087	1000	07/20/17

Prep Method: EPA 200.7-EPA 200.7

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
17G0504-01 [ARC103]	B181610	50.0	50.0	07/14/17

Prep Method: EPA 200.8-EPA 200.8

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
17G0504-01 [ARC103]	B181611	50.0	50.0	07/14/17

Prep Method: EPA 245.1-EPA 245.1

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
17G0504-01 [ARC103]	B181656	6.00	6.00	07/14/17

Prep Method: SW-846 3510C-EPA 608

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
17G0504-01 [ARC103]	B181979	1000	5.00	07/19/17

Prep Method: SW-846 5030B-EPA 624

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
17G0504-01 [ARC103]	B181769	2.5	5.00	07/17/17

Prep Method: SW-846 3510C-EPA 625

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
17G0504-01 [ARC103]	B181763	980	0.900	07/17/17

SM21-22 2340C

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
17G0504-01 [ARC103]	B181948	50.0	50.0	07/18/17

SM21-22 2540D

Lab Number [Field ID]	Batch	Initial [mL]	Date
17G0504-01 [ARC103]	B181631	10.0	07/14/17



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Sample Extraction Data

SM21-22 3500 Cr B

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
17G0504-01 [ARC103]	B181625	50.0	50.0	07/14/17

SM21-22 4500 CL G

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
17G0504-01 [ARC103]	B181617	100	100	07/14/17

Prep Method: SW-846 3510C-SW-846 8270D

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
17G0504-01 [ARC103]	B181884	1000	1.00	07/18/17
17G0504-01RE1 [ARC103]	B181884	1000	0.200	07/18/17

Prep Method: SW-846 3005A-Tri Chrome Calc.

Lab Number [Field ID]	Batch	Initial [mL]	Date
17G0504-01 [ARC103]	B181613	1.00	07/14/17

QUALITY CONTROL

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD RPD	RPD Limit	Notes
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Batch B181769 - SW-846 5030B

Blank (B181769-BLK1)		Prepared & Analyzed: 07/17/17							
Tetrahydrofuran	ND	2.0	µg/L			70-130	25		
Acetone	ND	50	µg/L				L-03		
tert-Amyl Methyl Ether (TAME)	ND	0.50	µg/L						
Benzene	ND	1.0	µg/L						
tert-Butyl Alcohol (TBA)	ND	20	µg/L						
Carbon Tetrachloride	ND	2.0	µg/L						
1,2-Dichlorobenzene	ND	2.0	µg/L						
1,3-Dichlorobenzene	ND	2.0	µg/L						
1,4-Dichlorobenzene	ND	2.0	µg/L						
1,2-Dichloroethane	ND	2.0	µg/L						
cis-1,2-Dichloroethylene	ND	1.0	µg/L						
1,1-Dichloroethane	ND	2.0	µg/L						
1,1-Dichloroethylene	ND	2.0	µg/L						
1,4-Dioxane	ND	50	µg/L						
Ethylbenzene	ND	2.0	µg/L						
Methyl tert-Butyl Ether (MTBE)	ND	2.0	µg/L						
Methylene Chloride	ND	5.0	µg/L						
Tetrachloroethylene	ND	2.0	µg/L						
Toluene	ND	1.0	µg/L						
1,1,1-Trichloroethane	ND	2.0	µg/L						
1,1,2-Trichloroethane	ND	2.0	µg/L						
Trichloroethylene	ND	2.0	µg/L						
Vinyl Chloride	ND	2.0	µg/L						
m+p Xylene	ND	2.0	µg/L						
o-Xylene	ND	2.0	µg/L						
Surrogate: 1,2-Dichloroethane-d4	22.7		µg/L	25.0	90.7	70-130			
Surrogate: Toluene-d8	25.9		µg/L	25.0	104	70-130			
Surrogate: 4-Bromofluorobenzene	25.8		µg/L	25.0	103	70-130			

LCS (B181769-BS1)		Prepared & Analyzed: 07/17/17					
Tetrahydrofuran	8.19	2.0	µg/L	10.0	81.9	70-130	25
Acetone	50.1	50	µg/L	100	50.1 *	70-160	L-03
tert-Amyl Methyl Ether (TAME)	10.7	0.50	µg/L	10.0	107	70-130	
Benzene	10.6	1.0	µg/L	10.0	106	37-151	
tert-Butyl Alcohol (TBA)	107	20	µg/L	100	107	40-160	
Carbon Tetrachloride	11.2	2.0	µg/L	10.0	112	70-140	
1,2-Dichlorobenzene	10.3	2.0	µg/L	10.0	103	18-190	
1,3-Dichlorobenzene	10.2	2.0	µg/L	10.0	102	59-156	
1,4-Dichlorobenzene	10.3	2.0	µg/L	10.0	103	18-190	
1,2-Dichloroethane	10.4	2.0	µg/L	10.0	104	49-155	
cis-1,2-Dichloroethylene	9.84	1.0	µg/L	10.0	98.4	70-130	
1,1-Dichloroethane	10.3	2.0	µg/L	10.0	103	59-155	
1,1-Dichloroethylene	9.33	2.0	µg/L	10.0	93.3	20-234	
1,4-Dioxane	105	50	µg/L	100	105	40-130	
Ethylbenzene	11.0	2.0	µg/L	10.0	110	37-162	
Methyl tert-Butyl Ether (MTBE)	10.5	2.0	µg/L	10.0	105	70-130	
Methylene Chloride	8.59	5.0	µg/L	10.0	85.9	50-221	
Tetrachloroethylene	12.7	2.0	µg/L	10.0	127	64-148	
Toluene	11.5	1.0	µg/L	10.0	115	47-150	
1,1,1-Trichloroethane	11.3	2.0	µg/L	10.0	113	52-162	
1,1,2-Trichloroethane	11.4	2.0	µg/L	10.0	114	52-150	
Trichloroethylene	12.2	2.0	µg/L	10.0	122	71-157	



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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	RPD Limit	Notes
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Batch B181769 - SW-846 5030B

LCS (B181769-BS1)							Prepared & Analyzed: 07/17/17			
Vinyl Chloride	9.17	2.0	µg/L	10.0		91.7		20-251		
m+p Xylene	21.5	2.0	µg/L	20.0		108		70-130		
o-Xylene	10.7	2.0	µg/L	10.0		107		70-130		
Surrogate: 1,2-Dichlorethane-d4	22.4		µg/L	25.0		89.8		70-130		
Surrogate: Toluene-d8	26.0		µg/L	25.0		104		70-130		
Surrogate: 4-Bromofluorobenzene	26.0		µg/L	25.0		104		70-130		

QUALITY CONTROL

Semivolatile 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 B181884 - SW-846 3510C

Blank (B181884-BLK1)	Prepared: 07/18/17 Analyzed: 07/19/17						
Benzo(a)anthracene	ND	0.050	µg/L				
Benzo(a)pyrene	ND	0.10	µg/L				
Benzo(b)fluoranthene	ND	0.050	µg/L				
Benzo(k)fluoranthene	ND	0.20	µg/L				
Bis(2-Ethylhexyl)phthalate	0.33	1.0	µg/L				
Chrysene	ND	0.20	µg/L				
Dibenz(a,h)anthracene	ND	0.20	µg/L				
Indeno(1,2,3-cd)pyrene	ND	0.20	µg/L				
Pentachlorophenol	ND	1.0	µg/L				
Surrogate: 2-Fluorophenol	89.2		µg/L	200	44.6	15-110	
Surrogate: Phenol-d6	65.0		µg/L	200	32.5	15-110	
Surrogate: Nitrobenzene-d5	76.9		µg/L	100	76.9	30-130	
Surrogate: 2-Fluorobiphenyl	73.2		µg/L	100	73.2	30-130	
Surrogate: 2,4,6-Tribromophenol	177		µg/L	200	88.3	15-110	
Surrogate: p-Terphenyl-d14	68.3		µg/L	100	68.3	30-130	
Blank (B181884-BLK2)	Prepared: 07/18/17 Analyzed: 07/20/17						
Benzo(a)anthracene	ND	0.010	µg/L				
Benzo(a)pyrene	ND	0.020	µg/L				
Benzo(b)fluoranthene	ND	0.010	µg/L				
Benzo(k)fluoranthene	ND	0.040	µg/L				
Bis(2-Ethylhexyl)phthalate	ND	1.0	µg/L				
Chrysene	ND	0.040	µg/L				
Dibenz(a,h)anthracene	ND	0.040	µg/L				
Indeno(1,2,3-cd)pyrene	ND	0.040	µg/L				
Pentachlorophenol	ND	0.20	µg/L				
Surrogate: 2-Fluorophenol	76.2		µg/L	200	38.1	15-110	
Surrogate: Phenol-d6	49.4		µg/L	200	24.7	15-110	
Surrogate: Nitrobenzene-d5	58.1		µg/L	100	58.1	30-130	
Surrogate: 2-Fluorobiphenyl	65.0		µg/L	100	65.0	30-130	
Surrogate: 2,4,6-Tribromophenol	171		µg/L	200	85.3	15-110	
Surrogate: p-Terphenyl-d14	77.6		µg/L	100	77.6	30-130	
LCS (B181884-BS1)	Prepared: 07/18/17 Analyzed: 07/19/17						
Benzo(a)anthracene	22.8	1.2	µg/L	25.0	91.3	40-140	
Benzo(a)pyrene	23.5	2.5	µg/L	25.0	94.0	40-140	
Benzo(b)fluoranthene	24.8	1.2	µg/L	25.0	99.2	40-140	
Benzo(k)fluoranthene	23.5	5.0	µg/L	25.0	94.1	40-140	
Bis(2-Ethylhexyl)phthalate	35.0	25	µg/L	25.0	140	40-140	
Chrysene	21.6	5.0	µg/L	25.0	86.4	40-140	
Dibenz(a,h)anthracene	26.4	5.0	µg/L	25.0	106	40-140	
Indeno(1,2,3-cd)pyrene	26.0	5.0	µg/L	25.0	104	40-140	
Pentachlorophenol	22.3	25	µg/L	25.0	89.3	30-130	
Surrogate: 2-Fluorophenol	100		µg/L	200	50.1	15-110	
Surrogate: Phenol-d6	74.0		µg/L	200	37.0	15-110	
Surrogate: Nitrobenzene-d5	86.0		µg/L	100	86.0	30-130	
Surrogate: 2-Fluorobiphenyl	83.7		µg/L	100	83.7	30-130	
Surrogate: 2,4,6-Tribromophenol	158		µg/L	200	79.1	15-110	
Surrogate: p-Terphenyl-d14	67.1		µg/L	100	67.1	30-130	

QUALITY CONTROL

Semivolatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B181884 - SW-846 3510C										
LCS (B181884-BS2)										
Prepared: 07/18/17 Analyzed: 07/19/17										
Benzo(a)anthracene	21.9	0.050	µg/L	50.0		43.8	40-140			
Benzo(a)pyrene	20.9	0.10	µg/L	50.0		41.9	40-140			
Benzo(b)fluoranthene	19.7	0.050	µg/L	50.0	39.4 *	40-140				
Benzo(k)fluoranthene	20.7	0.20	µg/L	50.0		41.4	40-140			
Bis(2-Ethylhexyl)phthalate	22.8	1.0	µg/L	50.0		45.6	40-140			
Chrysene	21.4	0.20	µg/L	50.0		42.9	40-140			
Dibenz(a,h)anthracene	19.0	0.20	µg/L	50.0	38.1 *	40-140				
Indeno(1,2,3-cd)pyrene	18.5	0.20	µg/L	50.0	37.0 *	40-140				
Pentachlorophenol	15.7	1.0	µg/L	50.0		31.3	30-130			
Surrogate: 2-Fluorophenol	118		µg/L	200		58.8	15-110			
Surrogate: Phenol-d6	81.2		µg/L	200		40.6	15-110			
Surrogate: Nitrobenzene-d5	92.4		µg/L	100		92.4	30-130			
Surrogate: 2-Fluorobiphenyl	86.8		µg/L	100		86.8	30-130			
Surrogate: 2,4,6-Tribromophenol	193		µg/L	200		96.5	15-110			
Surrogate: p-Terphenyl-d14	95.2		µg/L	100		95.2	30-130			
LCS Dup (B181884-BS1)										
Prepared: 07/18/17 Analyzed: 07/19/17										
Benzo(a)anthracene	22.9	1.2	µg/L	25.0		91.7	40-140	0.437	20	
Benzo(a)pyrene	23.9	2.5	µg/L	25.0		95.5	40-140	1.58	20	
Benzo(b)fluoranthene	25.0	1.2	µg/L	25.0		99.9	40-140	0.703	20	
Benzo(k)fluoranthene	23.4	5.0	µg/L	25.0		93.8	40-140	0.319	20	
Bis(2-Ethylhexyl)phthalate	36.5	25	µg/L	25.0	146 *	40-140	4.20	20		
Chrysene	21.6	5.0	µg/L	25.0		86.5	40-140	0.116	20	
Dibenz(a,h)anthracene	25.7	5.0	µg/L	25.0		103	40-140	2.78	20	
Indeno(1,2,3-cd)pyrene	25.5	5.0	µg/L	25.0		102	40-140	1.75	50	‡
Pentachlorophenol	21.8	25	µg/L	25.0		87.1	30-130	2.49	50	J
Surrogate: 2-Fluorophenol	101		µg/L	200		50.6	15-110			
Surrogate: Phenol-d6	73.6		µg/L	200		36.8	15-110			
Surrogate: Nitrobenzene-d5	85.2		µg/L	100		85.2	30-130			
Surrogate: 2-Fluorobiphenyl	84.4		µg/L	100		84.4	30-130			
Surrogate: 2,4,6-Tribromophenol	162		µg/L	200		81.1	15-110			
Surrogate: p-Terphenyl-d14	67.4		µg/L	100		67.4	30-130			
LCS Dup (B181884-BS2)										
Prepared: 07/18/17 Analyzed: 07/19/17										
Benzo(a)anthracene	19.4	0.050	µg/L	50.0		38.7 *	40-140	12.5	20	
Benzo(a)pyrene	19.1	0.10	µg/L	50.0		38.1 *	40-140	9.35	20	
Benzo(b)fluoranthene	18.1	0.050	µg/L	50.0		36.2 *	40-140	8.41	20	
Benzo(k)fluoranthene	18.1	0.20	µg/L	50.0		36.2 *	40-140	13.3	20	
Bis(2-Ethylhexyl)phthalate	19.8	1.0	µg/L	50.0		39.7 *	40-140	14.0	20	L-07
Chrysene	19.2	0.20	µg/L	50.0		38.4 *	40-140	11.1	20	
Dibenz(a,h)anthracene	17.2	0.20	µg/L	50.0		34.3 *	40-140	10.3	20	
Indeno(1,2,3-cd)pyrene	17.9	0.20	µg/L	50.0		35.9 *	40-140	3.13	50	‡
Pentachlorophenol	14.0	1.0	µg/L	50.0		28.0 *	30-130	11.3	50	‡
Surrogate: 2-Fluorophenol	105		µg/L	200		52.3	15-110			
Surrogate: Phenol-d6	68.6		µg/L	200		34.3	15-110			
Surrogate: Nitrobenzene-d5	79.9		µg/L	100		79.9	30-130			
Surrogate: 2-Fluorobiphenyl	80.7		µg/L	100		80.7	30-130			
Surrogate: 2,4,6-Tribromophenol	178		µg/L	200		89.2	15-110			
Surrogate: p-Terphenyl-d14	84.6		µg/L	100		84.6	30-130			

QUALITY CONTROL

Semivolatile Organic Compounds by - GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B181763 - SW-846 3510C										
Blank (B181763-BLK1)										
Prepared: 07/17/17 Analyzed: 07/18/17										
Acenaphthene	ND	5.0	µg/L							
Acenaphthylene	ND	5.0	µg/L							
Anthracene	ND	5.0	µg/L							
Benzidine	ND	20	µg/L							L-04, V-04, V-05
Benzo(g,h,i)perylene	ND	5.0	µg/L							
4-Bromophenylphenylether	ND	10	µg/L							
Butylbenzylphthalate	ND	10	µg/L							
4-Chloro-3-methylphenol	ND	10	µg/L							
Bis(2-chloroethyl)ether	ND	10	µg/L							
Bis(2-chloroisopropyl)ether	ND	10	µg/L							
2-Chloronaphthalene	ND	10	µg/L							
2-Chlorophenol	ND	10	µg/L							
4-Chlorophenylphenylether	ND	10	µg/L							
Di-n-butylphthalate	ND	10	µg/L							
1,3-Dichlorobenzene	ND	5.0	µg/L							
1,4-Dichlorobenzene	ND	5.0	µg/L							
1,2-Dichlorobenzene	ND	5.0	µg/L							
3,3-Dichlorobenzidine	ND	10	µg/L							
2,4-Dichlorophenol	ND	10	µg/L							
Diethylphthalate	ND	10	µg/L							
2,4-Dimethylphenol	ND	10	µg/L							
Dimethylphthalate	ND	10	µg/L							
4,6-Dinitro-2-methylphenol	ND	10	µg/L							
2,4-Dinitrophenol	ND	10	µg/L							
2,4-Dinitrotoluene	ND	10	µg/L							
2,6-Dinitrotoluene	ND	10	µg/L							
Di-n-octylphthalate	ND	10	µg/L							
1,2-Diphenylhydrazine (as Azobenzene)	ND	10	µg/L							
Bis(2-Ethylhexyl)phthalate	ND	10	µg/L							
Fluoranthene	ND	5.0	µg/L							
Fluorene	ND	5.0	µg/L							
Hexachlorobenzene	ND	10	µg/L							
Hexachlorobutadiene	ND	10	µg/L							
Hexachlorocyclopentadiene	ND	10	µg/L							
Hexachloroethane	ND	10	µg/L							
Isophorone	ND	10	µg/L							
Naphthalene	ND	5.0	µg/L							
Nitrobenzene	ND	10	µg/L							
2-Nitrophenol	ND	10	µg/L							
4-Nitrophenol	ND	10	µg/L							
N-Nitrosodimethylamine	ND	10	µg/L							V-20
N-Nitrosodiphenylamine	ND	10	µg/L							
N-Nitrosodi-n-propylamine	ND	10	µg/L							
2-Methylnaphthalene	ND	5.0	µg/L							
Phenanthrene	ND	5.0	µg/L							
2-Methylphenol	ND	10	µg/L							
Phenol	ND	10	µg/L							
3/4-Methylphenol	ND	10	µg/L							
Pyrene	ND	5.0	µg/L							
1,2,4-Trichlorobenzene	ND	5.0	µg/L							
2,4,6-Trichlorophenol	ND	10	µg/L							
Surrogate: 2-Fluorophenol	116		µg/L	200		58.1	15-110			

QUALITY CONTROL

Semivolatile Organic Compounds by - GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B181763 - SW-846 3510C										
Blank (B181763-BLK1)										
Prepared: 07/17/17 Analyzed: 07/18/17										
Surrogate: Phenol-d6	73.7		µg/L	200		36.9	15-110			
Surrogate: Nitrobenzene-d5	86.1		µg/L	100		86.1	30-130			
Surrogate: 2-Fluorobiphenyl	83.8		µg/L	100		83.8	30-130			
Surrogate: 2,4,6-Tribromophenol	187		µg/L	200		93.7	15-110			
Surrogate: p-Terphenyl-d14	95.2		µg/L	100		95.2	30-130			
LCS (B181763-BS1)										
Prepared: 07/17/17 Analyzed: 07/18/17										
Acenaphthene	73.0	5.0	µg/L	100		73.0	47-145			
Acenaphthylene	70.3	5.0	µg/L	100		70.3	33-145			
Anthracene	77.5	5.0	µg/L	100		77.5	27-133			
Benzidine	28.8	20	µg/L	100	28.8	*	40-140			L-04, V-04, V-05
Benzo(g,h,i)perylene	80.0	5.0	µg/L	100		80.0	1-219			
4-Bromophenylphenylether	77.3	10	µg/L	100		77.3	53-127			
Butylbenzylphthalate	75.8	10	µg/L	100		75.8	1-152			
4-Chloro-3-methylphenol	75.5	10	µg/L	100		75.5	22-147			
Bis(2-chloroethyl)ether	66.3	10	µg/L	100		66.3	12-158			
Bis(2-chloroisopropyl)ether	64.9	10	µg/L	100		64.9	36-166			
2-Chloronaphthalene	62.4	10	µg/L	100		62.4	60-118			
2-Chlorophenol	66.8	10	µg/L	100		66.8	23-134			
4-Chlorophenylphenylether	73.4	10	µg/L	100		73.4	25-158			
Di-n-butylphthalate	73.6	10	µg/L	100		73.6	1-118			
1,3-Dichlorobenzene	63.0	5.0	µg/L	100		63.0	1-172			
1,4-Dichlorobenzene	62.5	5.0	µg/L	100		62.5	20-124			
1,2-Dichlorobenzene	63.7	5.0	µg/L	100		63.7	32-129			
3,3-Dichlorobenzidine	84.5	10	µg/L	100		84.5	1-262			
2,4-Dichlorophenol	74.2	10	µg/L	100		74.2	39-135			
Diethylphthalate	73.8	10	µg/L	100		73.8	1-114			
2,4-Dimethylphenol	76.8	10	µg/L	100		76.8	32-119			
Dimethylphthalate	72.7	10	µg/L	100		72.7	1-112			
4,6-Dinitro-2-methylphenol	82.0	10	µg/L	100		82.0	1-181			
2,4-Dinitrophenol	73.4	10	µg/L	100		73.4	1-191			
2,4-Dinitrotoluene	72.2	10	µg/L	100		72.2	39-139			
2,6-Dinitrotoluene	73.7	10	µg/L	100		73.7	50-158			
Di-n-octylphthalate	70.9	10	µg/L	100		70.9	4-146			
1,2-Diphenylhydrazine (as Azobenzene)	72.2	10	µg/L	100		72.2	40-140			
Bis(2-Ethylhexyl)phthalate	73.3	10	µg/L	100		73.3	8-158			
Fluoranthene	79.1	5.0	µg/L	100		79.1	26-137			
Fluorene	72.1	5.0	µg/L	100		72.1	59-121			
Hexachlorobenzene	75.0	10	µg/L	100		75.0	1-152			
Hexachlorobutadiene	72.9	10	µg/L	100		72.9	24-116			
Hexachlorocyclopentadiene	61.7	10	µg/L	100		61.7	40-140			
Hexachloroethane	64.2	10	µg/L	100		64.2	40-113			
Isophorone	71.6	10	µg/L	100		71.6	21-196			
Naphthalene	70.1	5.0	µg/L	100		70.1	21-133			
Nitrobenzene	67.2	10	µg/L	100		67.2	35-180			
2-Nitrophenol	71.1	10	µg/L	100		71.1	29-182			
4-Nitrophenol	37.8	10	µg/L	100		37.8	1-132			
N-Nitrosodimethylamine	51.5	10	µg/L	100		51.5	40-140			V-20
N-Nitrosodiphenylamine	99.0	10	µg/L	100		99.0	40-140			
N-Nitrosodi-n-propylamine	65.0	10	µg/L	100		65.0	1-230			
2-Methylnaphthalene	72.8	5.0	µg/L	100		72.8	40-140			
Phenanthrene	78.4	5.0	µg/L	100		78.4	54-120			

QUALITY CONTROL

Semivolatile Organic Compounds by - GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B181763 - SW-846 3510C										
LCS (B181763-BS1)										
Prepared: 07/17/17 Analyzed: 07/18/17										
2-Methylphenol	55.8	10	µg/L	100	55.8	30-130				
Phenol	41.5	10	µg/L	100	41.5	5-112				
3/4-Methylphenol	56.8	10	µg/L	100	56.8	30-130				
Pyrene	75.2	5.0	µg/L	100	75.2	52-115				
1,2,4-Trichlorobenzene	68.6	5.0	µg/L	100	68.6	44-142				
2,4,6-Trichlorophenol	77.2	10	µg/L	100	77.2	37-144				
Surrogate: 2-Fluorophenol	102		µg/L	200	51.2	15-110				
Surrogate: Phenol-d6	71.4		µg/L	200	35.7	15-110				
Surrogate: Nitrobenzene-d5	75.6		µg/L	100	75.6	30-130				
Surrogate: 2-Fluorobiphenyl	81.3		µg/L	100	81.3	30-130				
Surrogate: 2,4,6-Tribromophenol	174		µg/L	200	87.0	15-110				
Surrogate: p-Terphenyl-d14	80.6		µg/L	100	80.6	30-130				
LCS Dup (B181763-BS1D)										
Prepared: 07/17/17 Analyzed: 07/18/17										
Acenaphthene	72.6	5.0	µg/L	100	72.6	47-145	0.481			
Acenaphthylene	69.7	5.0	µg/L	100	69.7	33-145	0.842			
Anthracene	76.6	5.0	µg/L	100	76.6	27-133	1.17			
Benzidine	33.7	20	µg/L	100	33.7	*	40-140	15.8		L-04, V-04, V-05
Benzo(g,h,i)perylene	75.1	5.0	µg/L	100	75.1	1-219	6.22			
4-Bromophenylphenylether	74.6	10	µg/L	100	74.6	53-127	3.49			
Butylbenzylphthalate	77.7	10	µg/L	100	77.7	1-152	2.49			
4-Chloro-3-methylphenol	76.3	10	µg/L	100	76.3	22-147	1.00			
Bis(2-chloroethyl)ether	69.6	10	µg/L	100	69.6	12-158	4.86			
Bis(2-chloroisopropyl)ether	72.2	10	µg/L	100	72.2	36-166	10.6			
2-Chloronaphthalene	61.9	10	µg/L	100	61.9	60-118	0.757			
2-Chlorophenol	68.2	10	µg/L	100	68.2	23-134	2.02			
4-Chlorophenylphenylether	71.1	10	µg/L	100	71.1	25-158	3.17			
Di-n-butylphthalate	75.5	10	µg/L	100	75.5	1-118	2.62			
1,3-Dichlorobenzene	64.7	5.0	µg/L	100	64.7	1-172	2.66			
1,4-Dichlorobenzene	64.3	5.0	µg/L	100	64.3	20-124	2.84			
1,2-Dichlorobenzene	64.3	5.0	µg/L	100	64.3	32-129	0.922			
3,3-Dichlorobenzidine	80.8	10	µg/L	100	80.8	1-262	4.37			
2,4-Dichlorophenol	73.7	10	µg/L	100	73.7	39-135	0.690			
Diethylphthalate	72.4	10	µg/L	100	72.4	1-114	1.86			
2,4-Dimethylphenol	76.4	10	µg/L	100	76.4	32-119	0.548			
Dimethylphthalate	71.6	10	µg/L	100	71.6	1-112	1.61			
4,6-Dinitro-2-methylphenol	80.3	10	µg/L	100	80.3	1-181	2.03			
2,4-Dinitrophenol	71.0	10	µg/L	100	71.0	1-191	3.33			
2,4-Dinitrotoluene	70.7	10	µg/L	100	70.7	39-139	2.09			
2,6-Dinitrotoluene	72.1	10	µg/L	100	72.1	50-158	2.15			
Di-n-octylphthalate	72.5	10	µg/L	100	72.5	4-146	2.24			
1,2-Diphenylhydrazine (as Azobenzene)	77.9	10	µg/L	100	77.9	40-140	7.47			
Bis(2-Ethylhexyl)phthalate	76.1	10	µg/L	100	76.1	8-158	3.79			
Fluoranthene	78.2	5.0	µg/L	100	78.2	26-137	1.22			
Fluorene	71.0	5.0	µg/L	100	71.0	59-121	1.62			
Hexachlorobenzene	71.9	10	µg/L	100	71.9	1-152	4.25			
Hexachlorobutadiene	72.0	10	µg/L	100	72.0	24-116	1.31			
Hexachlorocyclopentadiene	60.2	10	µg/L	100	60.2	40-140	2.46			
Hexachloroethane	68.3	10	µg/L	100	68.3	40-113	6.21			
Isophorone	74.4	10	µg/L	100	74.4	21-196	3.88			
Naphthalene	70.9	5.0	µg/L	100	70.9	21-133	1.15			
Nitrobenzene	71.7	10	µg/L	100	71.7	35-180	6.38			

QUALITY CONTROL

Semivolatile 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 B181763 - SW-846 3510C

LCS Dup (B181763-BSD1)									Prepared: 07/17/17 Analyzed: 07/18/17
2-Nitrophenol	72.0	10	µg/L	100	72.0	29-182	1.17		
4-Nitrophenol	39.0	10	µg/L	100	39.0	1-132	3.20		
N-Nitrosodimethylamine	59.9	10	µg/L	100	59.9	40-140	15.0		V-20
N-Nitrosodiphenylamine	98.6	10	µg/L	100	98.6	40-140	0.405		
N-Nitrosodi-n-propylamine	68.2	10	µg/L	100	68.2	1-230	4.73		
2-Methylnaphthalene	72.4	5.0	µg/L	100	72.4	40-140	0.565	20	
Phenanthrene	77.5	5.0	µg/L	100	77.5	54-120	1.18		
2-Methylphenol	56.8	10	µg/L	100	56.8	30-130	1.72	20	
Phenol	43.7	10	µg/L	100	43.7	5-112	5.14		
3/4-Methylphenol	57.8	10	µg/L	100	57.8	30-130	1.80	20	
Pyrene	73.4	5.0	µg/L	100	73.4	52-115	2.40		
1,2,4-Trichlorobenzene	68.0	5.0	µg/L	100	68.0	44-142	0.937		
2,4,6-Trichlorophenol	74.4	10	µg/L	100	74.4	37-144	3.60		
Surrogate: 2-Fluorophenol	107		µg/L	200	53.3	15-110			
Surrogate: Phenol-d6	73.5		µg/L	200	36.8	15-110			
Surrogate: Nitrobenzene-d5	79.4		µg/L	100	79.4	30-130			
Surrogate: 2-Fluorobiphenyl	79.2		µg/L	100	79.2	30-130			
Surrogate: 2,4,6-Tribromophenol	160		µg/L	200	79.9	15-110			
Surrogate: p-Terphenyl-d14	77.7		µg/L	100	77.7	30-130			

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
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Batch B181979 - SW-846 3510C

Blank (B181979-BLK1)							Prepared & Analyzed: 07/19/17			
Aroclor-1016	ND	0.10	µg/L							
Aroclor-1016 [2C]	ND	0.10	µg/L							
Aroclor-1221	ND	0.10	µg/L							
Aroclor-1221 [2C]	ND	0.10	µg/L							
Aroclor-1232	ND	0.10	µg/L							
Aroclor-1232 [2C]	ND	0.10	µg/L							
Aroclor-1242	ND	0.10	µg/L							
Aroclor-1242 [2C]	ND	0.10	µg/L							
Aroclor-1248	ND	0.10	µg/L							
Aroclor-1248 [2C]	ND	0.10	µg/L							
Aroclor-1254	ND	0.10	µg/L							
Aroclor-1254 [2C]	ND	0.10	µg/L							
Aroclor-1260	ND	0.10	µg/L							
Aroclor-1260 [2C]	ND	0.10	µg/L							
Surrogate: Decachlorobiphenyl	0.883		µg/L	1.00		88.3	30-150			
Surrogate: Decachlorobiphenyl [2C]	0.938		µg/L	1.00		93.8	30-150			
Surrogate: Tetrachloro-m-xylene	0.894		µg/L	1.00		89.4	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	0.909		µg/L	1.00		90.9	30-150			
LCS (B181979-BS1)							Prepared & Analyzed: 07/19/17			
Aroclor-1016	0.62	0.20	µg/L	0.500		123	*	50-114		L-07
Aroclor-1016 [2C]	0.55	0.20	µg/L	0.500		110		50-114		
Aroclor-1260	0.54	0.20	µg/L	0.500		108		8-127		
Aroclor-1260 [2C]	0.50	0.20	µg/L	0.500		100		8-127		
Surrogate: Decachlorobiphenyl	1.76		µg/L	2.00		87.9	30-150			
Surrogate: Decachlorobiphenyl [2C]	1.87		µg/L	2.00		93.4	30-150			
Surrogate: Tetrachloro-m-xylene	1.75		µg/L	2.00		87.5	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	1.81		µg/L	2.00		90.5	30-150			
LCS Dup (B181979-BSD1)							Prepared & Analyzed: 07/19/17			
Aroclor-1016	0.56	0.20	µg/L	0.500		112	50-114	9.52		
Aroclor-1016 [2C]	0.51	0.20	µg/L	0.500		102	50-114	7.53		
Aroclor-1260	0.51	0.20	µg/L	0.500		102	8-127	5.05		
Aroclor-1260 [2C]	0.48	0.20	µg/L	0.500		96.1	8-127	4.42		
Surrogate: Decachlorobiphenyl	1.69		µg/L	2.00		84.7	30-150			
Surrogate: Decachlorobiphenyl [2C]	1.83		µg/L	2.00		91.3	30-150			
Surrogate: Tetrachloro-m-xylene	1.64		µg/L	2.00		82.2	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	1.70		µg/L	2.00		84.9	30-150			

QUALITY CONTROL

Metals Analyses (Total) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD RPD	RPD Limit	Notes
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Batch B181610 - EPA 200.7

Blank (B181610-BLK1)				Prepared: 07/14/17 Analyzed: 07/19/17				
Iron	ND	0.050	mg/L					
LCS (B181610-BS1)				Prepared: 07/14/17 Analyzed: 07/20/17				
Iron	2.13	0.050	mg/L	2.00	107	85-115		
LCS Dup (B181610-BSD1)				Prepared: 07/14/17 Analyzed: 07/20/17				
Iron	2.11	0.050	mg/L	2.00	106	85-115	1.12	20

Batch B181611 - EPA 200.8

Blank (B181611-BLK1)				Prepared: 07/14/17 Analyzed: 07/17/17				
Antimony	ND	1.0	µg/L					
Arsenic	ND	1.0	µg/L					
Cadmium	ND	0.20	µg/L					
Chromium	ND	10	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	20	µg/L					
LCS (B181611-BS1)				Prepared: 07/14/17 Analyzed: 07/18/17				
Antimony	265	5.0	µg/L	250	106	85-115		
Arsenic	262	5.0	µg/L	250	105	85-115		
Cadmium	261	1.0	µg/L	250	104	85-115		
Chromium	252	50	µg/L	250	101	85-115		
Copper	257	5.0	µg/L	250	103	85-115		
Lead	259	2.5	µg/L	250	104	85-115		
Nickel	255	25	µg/L	250	102	85-115		
Selenium	257	25	µg/L	250	103	85-115		
Silver	246	1.0	µg/L	250	98.6	85-115		
Zinc	265	100	µg/L	250	106	85-115		
LCS Dup (B181611-BSD1)				Prepared: 07/14/17 Analyzed: 07/18/17				
Antimony	259	5.0	µg/L	250	104	85-115	2.24	20
Arsenic	257	5.0	µg/L	250	103	85-115	1.85	20
Cadmium	255	1.0	µg/L	250	102	85-115	2.33	20
Chromium	246	50	µg/L	250	98.5	85-115	2.41	20
Copper	250	5.0	µg/L	250	100	85-115	2.52	20
Lead	254	2.5	µg/L	250	102	85-115	1.82	20
Nickel	249	25	µg/L	250	99.6	85-115	2.33	20
Selenium	256	25	µg/L	250	103	85-115	0.270	20
Silver	241	1.0	µg/L	250	96.3	85-115	2.31	20
Zinc	260	100	µg/L	250	104	85-115	1.93	20



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

QUALITY CONTROL

Metals Analyses (Total) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD RPD	RPD Limit	Notes
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Batch B181656 - EPA 245.1

Blank (B181656-BLK1)					Prepared: 07/14/17	Analyzed: 07/17/17			
Mercury	ND	0.00010	mg/L						
LCS (B181656-BS1)					Prepared: 07/14/17	Analyzed: 07/17/17			
Mercury	0.00193	0.00010	mg/L	0.00200	96.4	85-115			
LCS Dup (B181656-BSD1)					Prepared: 07/14/17	Analyzed: 07/17/17			
Mercury	0.00195	0.00010	mg/L	0.00200	97.3	85-115	0.961	20	



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

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	RPD Limit	Notes
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Batch B181617 - SM21-22 4500 CL G

Blank (B181617-BLK1)	Prepared & Analyzed: 07/14/17								
Chlorine, Residual	ND	0.020	mg/L						
LCS (B181617-BS1)	Prepared & Analyzed: 07/14/17								
Chlorine, Residual	1.3	0.020	mg/L	1.20	110	82.5-130			
LCS Dup (B181617-BSD1)	Prepared & Analyzed: 07/14/17								
Chlorine, Residual	1.3	0.020	mg/L	1.20	111	82.5-130	0.619	6.2	
Reference (B181617-SRM1)	Prepared & Analyzed: 07/14/17								
Chlorine, Residual	1.08	0.020	mg/L	1.00	108	0-200			

Batch B181625 - SM21-22 3500 Cr B

Blank (B181625-BLK1)	Prepared & Analyzed: 07/14/17								
Hexavalent Chromium	ND	0.0040	mg/L						
LCS (B181625-BS1)	Prepared & Analyzed: 07/14/17								
Hexavalent Chromium	0.092	0.0040	mg/L	0.100	92.1	86.6-115			
LCS Dup (B181625-BSD1)	Prepared & Analyzed: 07/14/17								
Hexavalent Chromium	0.091	0.0040	mg/L	0.100	91.0	86.6-115	1.26	6.61	
Matrix Spike (B181625-MS1)	Source: 17G0504-01			Prepared & Analyzed: 07/14/17					
Hexavalent Chromium	0.098	0.0040	mg/L	0.100	0.0020	95.9	23.5-142		
Matrix Spike Dup (B181625-MSD1)	Source: 17G0504-01			Prepared & Analyzed: 07/14/17					
Hexavalent Chromium	0.099	0.0040	mg/L	0.100	0.0020	97.1	23.5-142	1.17	7.59

Batch B181631 - SM21-22 2540D

Blank (B181631-BLK1)	Prepared & Analyzed: 07/14/17								
Total Suspended Solids	ND	2.5	mg/L						
LCS (B181631-BS1)	Prepared & Analyzed: 07/14/17								
Total Suspended Solids	188	10	mg/L	200	94.0	66.7-117			
Duplicate (B181631-DUP2)	Source: 17G0504-01			Prepared & Analyzed: 07/14/17					
Total Suspended Solids	6400	50	mg/L	6400			1.10	5	

Batch B181948 - SM21-22 2340C

Blank (B181948-BLK1)	Prepared & Analyzed: 07/18/17								
Hardness	ND	2.0	mg/L						



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

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	RPD Limit	Notes
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Batch B181948 - SM21-22 2340C

LCS (B181948-BS1)	Prepared & Analyzed: 07/18/17								
Hardness	68	4.0	mg/L	62.2	109	92.6-114			
LCS Dup (B181948-BSD1)	Prepared & Analyzed: 07/18/17								
Hardness	68	4.0	mg/L	62.2	109	92.6-114	0.00	5	

Batch B182087 - EPA 1664B

Blank (B182087-BLK1)	Prepared & Analyzed: 07/20/17								
Silica Gel Treated HEM (SGT-HEM)	ND	1.4	mg/L						
LCS (B182087-BS1)	Prepared & Analyzed: 07/20/17								
Silica Gel Treated HEM (SGT-HEM)	8.2		mg/L	10.0	82.0	64-132			
Matrix Spike (B182087-MS1)	Source: 17G0504-01			Prepared & Analyzed: 07/20/17					
Silica Gel Treated HEM (SGT-HEM)	62	14	mg/L	100	ND 62.0	* 64-132			MS-07



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

**IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES**
EPA 608

LCS

Lab Sample ID: B181979-BS1 Date(s) Analyzed: 07/19/2017 07/19/2017

Date(s) Analyzed: 07/19/2017 07/19/2017

Instrument ID (1): **Instrument ID (2):**

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	0.62	
	2	0.000	0.000	0.000	0.55	12.0
Aroclor-1260	1	0.000	0.000	0.000	0.54	
	2	0.000	0.000	0.000	0.50	7.7



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

IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

LCS Dup

EPA 608

Lab Sample ID: B181979-BSD1 Date(s) Analyzed: 07/19/2017 07/19/2017

Date(s) Analyzed: 07/19/2017 07/19/2017

Instrument ID (1): **Instrument ID (2):**

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	0.56	
	2	0.000	0.000	0.000	0.51	9.4
Aroclor-1260	1	0.000	0.000	0.000	0.51	
	2	0.000	0.000	0.000	0.48	6.1

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
DL	Method Detection Limit
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.

DL-01	Elevated reporting limits for all volatile compounds due to foaming sample matrix.
J	Detected but below the Reporting Limit (lowest calibration standard); therefore, result is an estimated concentration (CLP J-Flag).
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-04	Laboratory fortified blank/laboratory control sample recovery and duplicate recovery are outside of control limits. Reported value for this compound is likely to be biased on the low side.
L-07	Either laboratory fortified blank/laboratory control sample or duplicate recovery is outside of control limits, but the other is within limits. RPD between the two LFB/LCS results is within method specified criteria.
MS-07	Matrix spike recovery is outside of control limits. Analysis is in control based on laboratory fortified blank recovery. Possibility of sample matrix effects that lead to low bias for reported result or non-homogeneous sample aliquot cannot be eliminated.
RL-12	Elevated reporting limit due to matrix interference.
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-04	Initial calibration did not meet method specifications. Compound was calibrated using a response factor where %RSD is outside of method specified criteria.
V-05	Continuing calibration did not meet method specifications and was biased on the low side for this compound.
V-19	Increased uncertainty is associated with the reported value which is likely to be biased on the low side.
V-20	Initial calibration did not meet method specifications. Compound was calibrated using linear regression with correlation coefficient <0.99. Reduced precision and accuracy may be associated with reported result.
	Continuing calibration did not meet method specifications and was biased on the high side. Data validation is not affected since sample result was "not detected" for this compound.



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

CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
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 Drinking Water	
Mercury	CT,MA,NH,NY,RI,ME,VA
EPA 300.0 in Water	
Chloride	NC,NY,MA,VA,ME,NH,CT,RI
EPA 608 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
EPA 624 in Water	
Acetone	NH,NY
Benzene	CT,MA,NH,NY,RI,NC,ME,VA
Carbon Tetrachloride	CT,MA,NH,NY,RI,NC,ME,VA
1,2-Dichlorobenzene	CT,MA,NH,NY,RI,NC,ME,VA
1,3-Dichlorobenzene	CT,MA,NH,NY,RI,NC,ME,VA
1,4-Dichlorobenzene	CT,MA,NH,NY,RI,NC,ME,VA
1,2-Dichloroethane	CT,MA,NH,NY,RI,NC,ME,VA
1,1-Dichloroethane	CT,MA,NH,NY,RI,NC,ME,VA
1,1-Dichloroethylene	CT,MA,NH,NY,RI,NC,ME,VA
Ethylbenzene	CT,MA,NH,NY,RI,NC,ME,VA
Methyl tert-Butyl Ether (MTBE)	NH,NY,NC
Methylene Chloride	CT,MA,NH,NY,RI,NC,ME,VA
Naphthalene	NC

CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
EPA 624 in Water	
Tetrachloroethylene	CT,MA,NH,NY,RI,NC,ME,VA
Toluene	CT,MA,NH,NY,RI,NC,ME,VA
1,2,4-Trichlorobenzene	NC
1,1,1-Trichloroethane	CT,MA,NH,NY,RI,NC,ME,VA
1,1,2-Trichloroethane	CT,MA,NH,NY,RI,NC,ME,VA
Trichloroethylene	CT,MA,NH,NY,RI,NC,ME,VA
Vinyl Chloride	CT,MA,NH,NY,RI,NC,ME,VA
m+p Xylene	CT,MA,NH,NY,RI,NC,VA
o-Xylene	CT,MA,NH,NY,RI,NC,VA
EPA 625 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
Benzidine	CT,MA,NH,NY,NC,RI,ME,VA
Benzo(a)anthracene	CT,MA,NH,NY,NC,RI,ME,VA
Benzo(a)pyrene	CT,MA,NH,NY,NC,RI,ME,VA
Benzo(b)fluoranthene	CT,MA,NH,NY,NC,RI,ME,VA
Benzo(g,h,i)perylene	CT,MA,NH,NY,NC,RI,ME,VA
Benzo(k)fluoranthene	CT,MA,NH,NY,NC,RI,ME,VA
4-Bromophenylphenylether	CT,MA,NH,NY,NC,RI,ME,VA
Butylbenzylphthalate	CT,MA,NH,NY,NC,RI,ME,VA
4-Chloro-3-methylphenol	CT,MA,NH,NY,NC,RI,VA
Bis(2-chloroethyl)ether	CT,MA,NH,NY,NC,RI,ME,VA
Bis(2-chloroisopropyl)ether	CT,MA,NH,NY,NC,RI,ME,VA
2-Chloronaphthalene	CT,MA,NH,NY,NC,RI,ME,VA
2-Chlorophenol	CT,MA,NH,NY,NC,RI,ME,VA
4-Chlorophenylphenylether	CT,MA,NH,NY,NC,RI,ME,VA
Chrysene	CT,MA,NH,NY,NC,RI,ME,VA
Dibenz(a,h)anthracene	CT,MA,NH,NY,NC,RI,ME,VA
Di-n-butylphthalate	CT,MA,NH,NY,NC,RI,ME,VA
1,3-Dichlorobenzene	MA,NC
1,4-Dichlorobenzene	MA,NC
1,2-Dichlorobenzene	MA,NC
3,3-Dichlorobenzidine	CT,MA,NH,NY,NC,RI,ME,VA
2,4-Dichlorophenol	CT,MA,NH,NY,NC,RI,ME,VA
Diethylphthalate	CT,MA,NH,NY,NC,RI,ME,VA
2,4-Dimethylphenol	CT,MA,NH,NY,NC,RI,ME,VA
Dimethylphthalate	CT,MA,NH,NY,NC,RI,ME,VA
4,6-Dinitro-2-methylphenol	CT,MA,NH,NY,NC,RI,ME,VA
2,4-Dinitrophenol	CT,MA,NH,NY,NC,RI,ME,VA
2,4-Dinitrotoluene	CT,MA,NH,NY,NC,RI,ME,VA
2,6-Dinitrotoluene	CT,MA,NH,NY,NC,RI,ME,VA
Di-n-octylphthalate	CT,MA,NH,NY,NC,RI,ME,VA
1,2-Diphenylhydrazine (as Azobenzene)	NC
Bis(2-Ethylhexyl)phthalate	CT,MA,NH,NY,NC,RI,ME,VA
Fluoranthene	CT,MA,NH,NY,NC,RI,ME,VA



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

CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
EPA 625 in Water	
Fluorene	CT,MA,NH,NY,NC,RI,ME,VA
Hexachlorobenzene	CT,MA,NH,NY,NC,RI,ME,VA
Hexachlorobutadiene	CT,MA,NH,NY,NC,RI,ME,VA
Hexachlorocyclopentadiene	CT,MA,NH,NY,NC,RI,ME,VA
Hexachloroethane	CT,MA,NH,NY,NC,RI,ME,VA
Indeno(1,2,3-cd)pyrene	CT,MA,NH,NY,NC,RI,ME,VA
Isophorone	CT,MA,NH,NY,NC,RI,ME,VA
Naphthalene	CT,MA,NH,NY,NC,RI,ME,VA
Nitrobenzene	CT,MA,NH,NY,NC,RI,ME,VA
2-Nitrophenol	CT,MA,NH,NY,NC,RI,ME,VA
4-Nitrophenol	CT,MA,NH,NY,NC,RI,ME,VA
N-Nitrosodimethylamine	CT,MA,NH,NY,NC,RI,ME,VA
N-Nitrosodiphenylamine	CT,MA,NH,NY,NC,RI,ME,VA
N-Nitrosodi-n-propylamine	CT,MA,NH,NY,NC,RI,ME,VA
Pentachlorophenol	CT,MA,NH,NY,NC,RI,ME,VA
2-Methylnaphthalene	NC
Phenanthrene	CT,MA,NH,NY,NC,RI,ME,VA
2-Methylphenol	NY,NC
Phenol	CT,MA,NH,NY,NC,RI,ME,VA
3/4-Methylphenol	NY,NC
Pyrene	CT,MA,NH,NY,NC,RI,ME,VA
1,2,4-Trichlorobenzene	CT,MA,NH,NY,NC,RI,ME,VA
2,4,6-Trichlorophenol	CT,MA,NH,NY,NC,RI,ME,VA
2-Fluorophenol	NC
SM19-22 4500 NH3 C in Water	
Ammonia as N	NY,MA,CT,RI,VA,NC,ME
SM21-22 2340C in Water	
Hardness	CT,MA,NH,NY,RI,NC,ME,VA
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 B in Water	
Chloride	NH,CT,MA,NY,RI,NC,ME,VA
SM21-22 4500 CL G in Water	
Chlorine, Residual	CT,MA,RI,ME
SM21-22 4500 CN E in Water	
Cyanide	CT,MA,NH,NY,RI,NC,ME,VA
SW-846 8270D in Water	
Acenaphthene	CT,NY,NC,ME,NH,VA,NJ
Acenaphthylene	CT,NY,NC,ME,NH,VA,NJ
Anthracene	CT,NY,NC,ME,NH,VA,NJ
Benzidine	CT,NY,NC,ME,NH,VA,NJ
Benzo(a)anthracene	CT,NY,NC,ME,NH,VA,NJ

CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
<i>SW-846 8270D in Water</i>	
Benzo(a)pyrene	CT, NY, NC, ME, NH, VA, NJ
Benzo(b)fluoranthene	CT, NY, NC, ME, NH, VA, NJ
Benzo(g,h,i)perylene	CT, NY, NC, ME, NH, VA, NJ
Benzo(k)fluoranthene	CT, NY, NC, ME, NH, VA, NJ
Bis(2-chloroethyl)ether	CT, NY, NC, ME, NH, VA, NJ
Bis(2-chloroisopropyl)ether	CT, NY, NC, ME, NH, VA, NJ
Bis(2-Ethylhexyl)phthalate	CT, NY, NC, ME, NH, VA, NJ
4-Bromophenylphenylether	CT, NY, NC, ME, NH, VA, NJ
Butylbenzylphthalate	CT, NY, NC, ME, NH, VA, NJ
4-Chloro-3-methylphenol	CT, NY, NC, ME, NH, VA, NJ
2-Chloronaphthalene	CT, NY, NC, ME, NH, VA, NJ
2-Chlorophenol	CT, NY, NC, ME, NH, VA, NJ
4-Chlorophenylphenylether	CT, NY, NC, ME, NH, VA, NJ
Chrysene	CT, NY, NC, ME, NH, VA, NJ
Dibenz(a,h)anthracene	CT, NY, NC, ME, NH, VA, NJ
Di-n-butylphthalate	CT, NY, NC, ME, NH, VA, NJ
1,2-Dichlorobenzene	CT, NY, NC, ME, NH, VA, NJ
1,3-Dichlorobenzene	CT, NY, NC, ME, NH, VA, NJ
1,4-Dichlorobenzene	CT, NY, NC, ME, NH, VA, NJ
3,3-Dichlorobenzidine	CT, NY, NC, ME, NH, VA, NJ
2,4-Dichlorophenol	CT, NY, NC, ME, NH, VA, NJ
Diethylphthalate	CT, NY, NC, ME, NH, VA, NJ
2,4-Dimethylphenol	CT, NY, NC, ME, NH, VA, NJ
Dimethylphthalate	CT, NY, NC, ME, NH, VA, NJ
4,6-Dinitro-2-methylphenol	CT, NY, NC, ME, NH, VA, NJ
2,4-Dinitrophenol	CT, NY, NC, ME, NH, VA, NJ
2,4-Dinitrotoluene	CT, NY, NC, ME, NH, VA, NJ
2,6-Dinitrotoluene	CT, NY, NC, ME, NH, VA, NJ
Di-n-octylphthalate	CT, NY, NC, ME, NH, VA, NJ
1,2-Diphenylhydrazine (as Azobenzene)	NY, NC, ME
Fluoranthene	CT, NY, NC, ME, NH, VA, NJ
Fluorene	NY, NC, ME, NH, VA, NJ
Hexachlorobenzene	CT, NY, NC, ME, NH, VA, NJ
Hexachlorobutadiene	CT, NY, NC, ME, NH, VA, NJ
Hexachlorocyclopentadiene	CT, NY, NC, ME, NH, VA, NJ
Hexachloroethane	CT, NY, NC, ME, NH, VA, NJ
Indeno(1,2,3-cd)pyrene	CT, NY, NC, ME, NH, VA, NJ
Isophorone	CT, NY, NC, ME, NH, VA, NJ
2-Methylnaphthalene	CT, NY, NC, ME, NH, VA, NJ
2-Methylphenol	CT, NY, NC, NH, VA, NJ
3/4-Methylphenol	CT, NY, NC, NH, VA, NJ
Naphthalene	CT, NY, NC, ME, NH, VA, NJ
Nitrobenzene	CT, NY, NC, ME, NH, VA, NJ
2-Nitrophenol	CT, NY, NC, ME, NH, VA, NJ
4-Nitrophenol	CT, NY, NC, ME, NH, VA, NJ
N-Nitrosodimethylamine	CT, NY, NC, ME, NH, VA, NJ
N-Nitrosodiphenylamine	CT, NY, NC, ME, NH, VA, NJ



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

CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
<i>SW-846 8270D in Water</i>	
N-Nitrosodi-n-propylamine	CT, NY, NC, ME, NH, VA, NJ
Pentachlorophenol	CT, NY, NC, ME, NH, VA, NJ
Phenanthrene	CT, NY, NC, ME, NH, VA, NJ
Phenol	CT, NY, NC, ME, NH, VA, NJ
Pyrene	CT, NY, NC, ME, NH, VA, NJ
1,2,4-Trichlorobenzene	CT, NY, NC, ME, NH, VA, NJ
2,4,6-Trichlorophenol	CT, NY, NC, ME, NH, VA, NJ
2-Fluorophenol	NC, VA
Phenol-d6	VA
Nitrobenzene-d5	VA

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

Code	Description	Number	Expires
AIHA	AIHA-LAP, LLC - ISO17025:2005	100033	02/1/2018
MA	Massachusetts DEP	M-MA100	06/30/2018
CT	Connecticut Department of Public Health	PH-0567	09/30/2017
NY	New York State Department of Health	10899 NELAP	04/1/2018
NH-S	New Hampshire Environmental Lab	2516 NELAP	02/5/2018
RI	Rhode Island Department of Health	LAO00112	12/30/2017
NC	North Carolina Div. of Water Quality	652	12/31/2017
NJ	New Jersey DEP	MA007 NELAP	06/30/2018
FL	Florida Department of Health	E871027 NELAP	06/30/2018
VT	Vermont Department of Health Lead Laboratory	LL015036	07/30/2018
ME	State of Maine	2011028	06/9/2019
VA	Commonwealth of Virginia	460217	12/14/2017
NH-P	New Hampshire Environmental Lab	2557 NELAP	09/6/2017
VT-DW	Vermont Department of Health Drinking Water	VT-255716	06/12/2018
NC-DW	North Carolina Department of Health	25703	07/31/2018

39 Spruce St.
East Longmeadow, MA. 01028
P: 413-525-2332
F: 413-525-6405
www.contestlabs.com



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 Lockwood Remediation Date 7/13/17 Time 1720
 Received By JM

How were the samples received?	In Cooler <u>T</u>	No Cooler _____	On Ice <u>T</u>	No Ice _____
	Direct from Sampling		Ambient _____	Melted Ice _____
Were samples within Temperature? 2-6°C	<u>T</u>	By Gun # <u>1</u>	Actual Temp - <u>5.3</u>	
Was Custody Seal Intact?	<u>N/A</u>	By Blank # _____	Actual Temp -	
Was COC Relinquished?	<u>T</u>		Were Samples Tampered with?	<u>F</u>
Are there broken/leaking/loose caps on any samples?			Does Chain Agree With Samples?	<u>T</u>
Is COC in ink/ Legible?	<u>T</u>		Were samples received within holding time?	<u>T</u>
Did COC include all pertinent Information?	Client <u>T</u> Project <u>T</u>	Analysis <u>T</u> ID's <u>T</u>	Sampler Name <u>T</u> Collection Dates/Times <u>T</u>	
Are Sample labels filled out and legible?	<u>T</u>			
Are there Lab to Filters?	<u>N/A</u>		Who was notified?	
Are there Rushes?	<u>N/A</u>		Who was notified?	
Are there Short Holds?	<u>N/A</u>		Who was notified?	
Is there enough Volume?	<u>T</u>			
Is there Headspace where applicable?	<u>T</u>		MS/MSD? <u>N/A</u>	
Proper Media/Containers Used?	<u>T</u>		Is splitting samples required?	<u>N/A</u>
Were trip blanks received?	<u>N/A</u>		On COC? <u>N/A</u>	
Do all samples have the proper pH?		Acid <u>T</u>	Base _____	

Vials	#	Containers:	#	#	#	#
Unp-		1 Liter Amb.	<u>7</u>	1 Liter Plastic	<u>1</u>	16 oz Amb.
HCL-	<u>9</u>	500 mL Amb.		500 mL Plastic		8oz Amb/Clear
Meoh-		250 mL Amb.		250 mL Plastic	<u>6</u>	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		

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:

Appendix C
Supplemental Information

MassDEP - Bureau of Waste Site Cleanup

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

Site Information:

89 SPRING BARS ROAD FALMOUTH, MA

4-000026272

NAD83 UTM Meters:

4601989mN, 367180mE (Zone: 19)

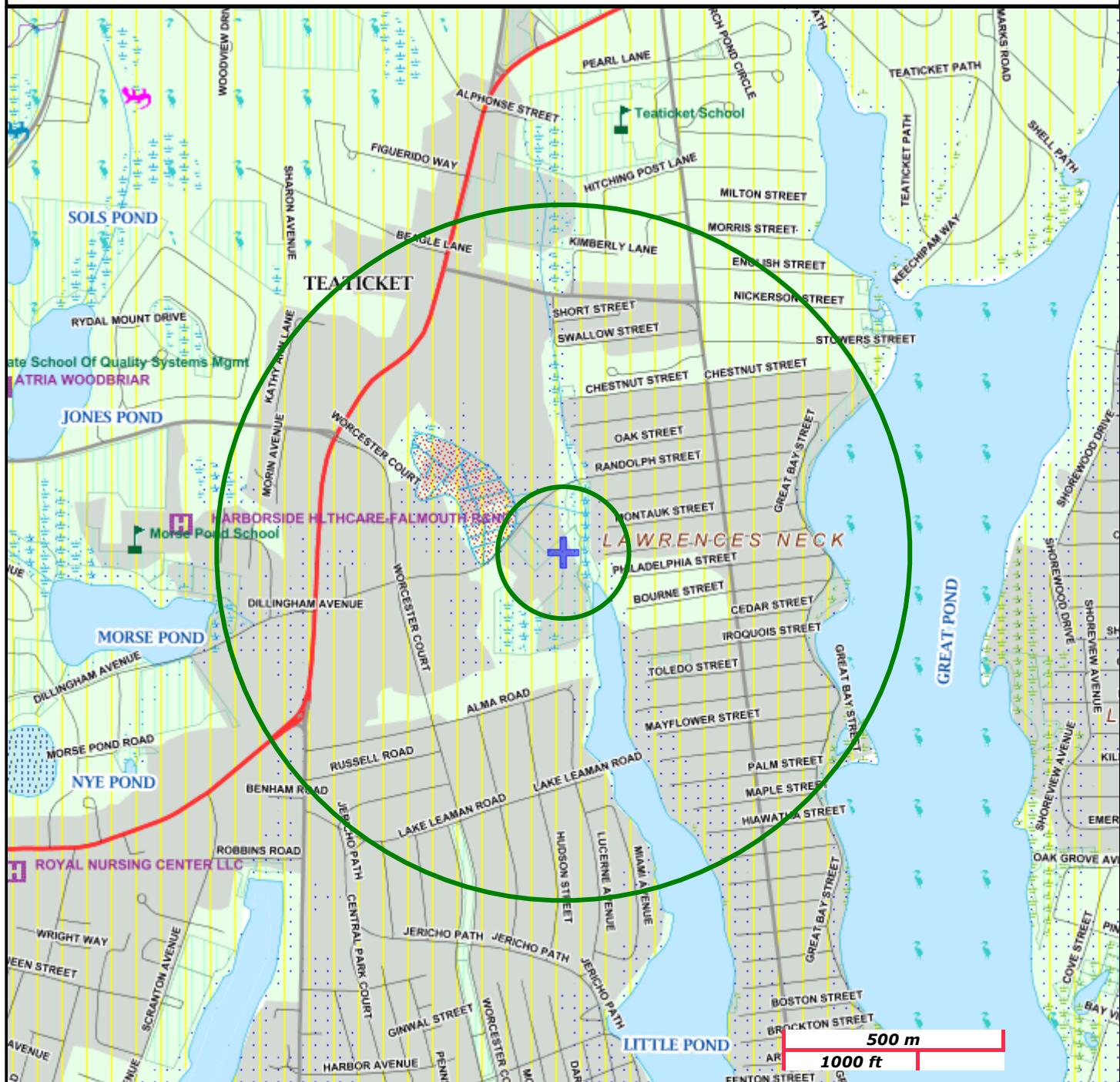
July 24, 2017

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



MassDEP

Commonwealth of Massachusetts
Department of Environmental Protection



Roads: Limited Access, Divided, Other Hwy, Major Road, Minor Road, Track, Trail

PWS Protection Areas: Zone II, IWPA, Zone A



Boundaries: Town, County, DEP Region; Train; Powerline; Pipeline; Aqueduct

Hydrography: Open Water, PWS Reservoir, Tidal Flat



Basins: Major, PWS; Streams: Perennial, Intermittent, Man Made Shore, Dam

Wetlands: Freshwater, Saltwater, Cranberry Bog



Aquifers: Medium Yield, High Yield, EPA Sole Source

FEMA 100yr Floodplain; Protected Open Space; ACEC



Non Potential Drinking Water Source Area: Medium, High (Yield)

Est. Rare Wetland Wildlife Hab; Vernal Pool: Cert., Potential



Non Potential Drinking Water Source Area: Medium, High (Yield)

Solid Waste Landfill; PWS: Com.GW,SW, Emerg., Non-Com.



Massachusetts Cultural Resource Information System

MACRIS

MACRIS Search Results

Search Criteria: Town(s): Falmouth; Street No: 89; Street Name: Spring Bars Rd; Resource Type(s): Area, Building, Burial Ground, Object, Structure;

Inv. No.	Property Name	Street	Town	Year
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United States Department of the Interior

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



In Reply Refer To:

July 24, 2017

Consultation Code: 05E1NE00-2017-SLI-2267

Event Code: 05E1NE00-2017-E-04929

Project Name: 89 Spring Bars Road, Falmouth, MA

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

To Whom It May Concern:

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

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

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

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the

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

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

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

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

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

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

Attachment(s):

- Official Species List

Official Species List

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

This species list is provided by:

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

Project Summary

Consultation Code: 05E1NE00-2017-SLI-2267

Event Code: 05E1NE00-2017-E-04929

Project Name: 89 Spring Bars Road, Falmouth, MA

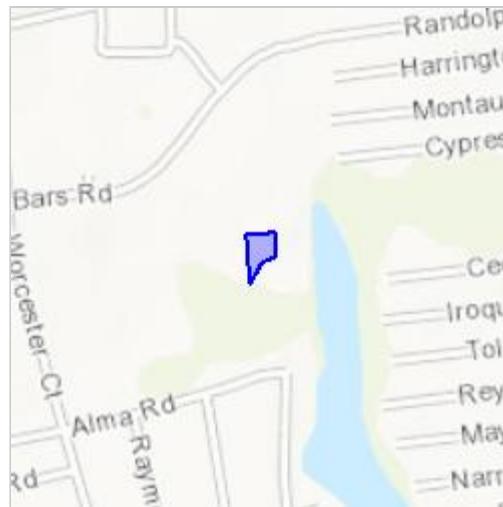
Project Type: DREDGE / EXCAVATION

Project Description: Excavation to remove any impacted soil by excavation and dewatering. The total area where the impacted soil was found is approximately 4,200 square feet. All impacted soil will be removed off site and properly disposed and dewatering will occur under a NPDES RGP. All work will occur under the direction of the MassDEP.

Project Location:

Approximate location of the project can be viewed in Google Maps:

<https://www.google.com/maps/place/41.55722913815202N70.59290214587196W>



Counties: Barnstable, MA

Endangered Species Act Species

There is a total of 2 threatened, endangered, or candidate species on your species list. Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species. See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area. Please contact the designated FWS office if you have questions.

Mammals

NAME	STATUS
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Northern Long-eared Bat (*Myotis septentrionalis*) Threatened

No critical habitat has been designated for this species.

Species profile: <https://ecos.fws.gov/ecp/species/9045>

Birds

NAME	STATUS
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Red Knot (*Calidris canutus rufa*) Threatened

No critical habitat has been designated for this species.

Species profile: <https://ecos.fws.gov/ecp/species/1864>

Critical habitats

There are no critical habitats within your project area.



Based upon a discussion with the U.S. Fish & Wildlife Service (USFWS), temporary dewatering activities at the site are not expected to impact the Northern Long-eared Bat or the Red-Knot.

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

The habitat for the Red Knot is described as coastal beaches and rocky shores, sand and mud flats, and is migratory only. There are no critical habitats within the project area. The Red Knot is a migratory bird that summers in the Arctic with Massachusetts as a migratory location. The dewatering project will be intermittent and during the summer months (August through September) while the Red Knot is not typically present. Based on this evaluation, the Red Knot is not likely to be affected by the proposed water discharges or discharge related activities. Therefore, there is likely to be "no effect" on the listed species within the project area.



Documentation of the Results of the ESA Eligibility Determination:

Using Appendix I and information in Appendix II of the NPDES RGP, the 89 Spring Bars Road, Falmouth project is eligible for coverage under this general permit under FWS Criterion B. The 89 Spring Bars Road, Falmouth project is located in Barnstable County. There are three Endangered Species listed in Barnstable County according to the Federally Listed Endangered and Threatened Species in Massachusetts List, Updated 2/5/2016, available on the U.S. Fish & Wildlife Service New England Field Office webpage. None of the three listed Endangered Species were identified at the project site. A copy of the Federally Listed Endangered and Threatened Species in Massachusetts List Updated 2/5/2016 is attached. No designated critical habitats were listed in Barnstable County.

An Endangered Species Consultation was conducted on the U.S. Fish & Wildlife Service New England Field Office ECOS IPaC webpage for the Site:

- The Red Knot was listed as “Threatened” in Barnstable County coastal towns and may occur within the boundary of the project area;
- The Northern long-eared bat was listed as “Threatened – Final 4(d) Rule” in Barnstable County and Statewide

Based upon a discussion with the U.S. Fish & Wildlife Service (USFWS), temporary dewatering activities at the site are not expected to impact the Northern Long-eared Bat or the Red-Knot.

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

The habitat for the Red Knot is described as coastal beaches and rocky shores, sand and mud flats, and is migratory only. There are no critical habitats within the project area. The Red Knot is a migratory bird that summers in the Arctic with Massachusetts as a migratory location. The dewatering project will be intermittent and during the summer months (August through September) while the Red Knot is not typically present. Based on this evaluation, the Red Knot is not likely to be affected by the proposed water discharges or discharge related activities. Therefore, there is likely to be “no effect” on the listed species within the project area.

The proposed discharge is to a saltwater receiving water in Massachusetts and therefore must consider NMFS criterion. Based on our review of the NMFS criterion, it is the opinion of Lockwood Remediation Technologies, LLC that related activities under the NPDES RGP will have no effect on federally threatened or endangered listed species or critical habitat under the jurisdiction of NMFS. According to Appendix I: Endangered Species Act (ESA) Guidance and Eligibility Criteria in the NPDES RGP, that can be located at the following web address:

<https://www3.epa.gov/region1/npdes/remediation/RGPNMFSletter.pdf>, four species of ESA listed sea



turtles are the only ESA-listed species under the NMFS jurisdiction that may have a critical habitat in Little Pond. The turtles are found seasonally in New England waters, including those off the coast of Massachusetts. These include the endangered Kemp's ridley sea turtle (*Lepidochelys kempii*), the threatened Northwest Atlantic Distinct Population Segment (DPS) of the Loggerhead sea turtle (*Caretta caretta*), the endangered Leatherback sea turtle (*Dermochelys coriacea*), and the Green Turtle (*Chelonia mydas*). Based upon this information and the sea turtles' expected distribution, contact between these turtle species and the projected transient RGP discharge plumes is extremely unlikely to occur. The outfall to be used for the 89 Spring Bars Road discharge is positioned at the northern extent of Little Pond and is not adjacent to large coastal sandy beaches and is not expected to affect any turtle populations. In addition, "EPA has determined that remediation activity discharges will have no effect on and of the four listed sea turtles because the distance between the localized, on-shore remediation activities and minor, near-shore remediation activity discharges relative to the size of, and the high energy and volume in the marine waters this species is likely to inhabit, precludes contact between remediation activity discharges and this species, presently or in the future".