TERRA ENVIRONMENTAL, LLC
PLANNING | CONSULTING | MANAGEMENT | REMEDIATION

NOTICE OF INTENT FOR DISCHARGE
PURSUANT TO US EPA
REMEDIATION GENERAL PERMIT
MAG9100000

Project:
Beachmont – Sales Creek Neighborhood Sewer and Drainage Improvements Project,
CWSRF 4051 – Contract No. WW-002
Revere, Massachusetts

Owner:
City of Revere
281 Broadway
Revere, MA 02151

Prepared for:
R&D Site Development
7 Hemlock Lane
Groveland, MA 01834

Prepared by:
TERRA Environmental, LLC
159 Haven Street, Second Floor
Reading, MA 01867

June 10, 2020

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June 10, 2020

United States Environmental Protection Agency
Office of Ecosystem Protection
EPA RGP Applications Coordinator
5 Post Office Square, Suite 100 (Mail Code OEP06-01)
Boston, MA 02109-3912

RE: Notice of Intent for Remediation General Permit
Temporary Construction Dewatering Discharge
Beachmont – Sales Creek Neighborhood Sewer and Drainage Improvements Project
Revere, Massachusetts

Dear Sir/Madam:

On behalf of R&D Site Development, TERRA Environmental, LLC (TERRA) has prepared this Notice of Intent (NOI) to the U.S. Environmental Protection Agency (EPA) for authorization to discharge treated groundwater under the National Pollutant Discharge Elimination System (NPDES) Remediation General Permit (RGP) MAG910000 for the Beachmont – Sales Creek Neighborhood Sewer and Drainage Improvements Project, CWSRF 4051 – Contract No. WW-002, located in Revere, Massachusetts (the Project). The temporary discharge of construction dewatering will occur as part of proposed sewer and drainage improvements including sewer replacement, a new wastewater pump station, and drainage improvements along Jones Road, Henry Street, George Avenue, and Dolphin Avenues. The dewatered groundwater will be treated to meet requirements of this NOI/RGP and will be discharged to the Ocean at Broad Sound (Lynn Harbor), as shown in **Figure 1**; Site Location Map.

A copy of the NOI form contained in the RGP permit is included in **Appendix B**, and supporting information is included in **Appendix C**. This project is considered Activity Category III-G, as defined in the RGP. Category III-G is defined as Contaminated Site Dewatering from Sites with Know Contamination. A Utility-Related Abatement Measure (URAM) Plan was submitted to the Massachusetts Department of Environmental Protection (MassDEP) in November of 2019 by CDM Smith on behalf of the City of Revere. Semi-volatile organic compounds (SVOCs), Total Petroleum Hydrocarbons (TPH), and 1,4-Dioxane was detected in soil in excess of MCP reportable concentrations (RCS-1 Category) during geotechnical boring investigations at the Project. Additionally, lead was detected in groundwater in excess of reportable concentrations (RCGW-2 Category). Additional information is presented in in later sections of this Letter. Thus, Technology Based Effluent Limitations (TBELs) for all parameters classified as Type A, Type B, Type D, Type E, and Type F apply.

The following is a summary of site and groundwater quality information in support of the NOI for temporary discharge of groundwater to the Ocean at Broad Sound (Lynn Harbor). This letter and supporting documentation were prepared in accordance with the US EPA guidance for construction dewatering under the RGP program.

1.0 GENERAL SITE INFORMATION

Owner
City of Revere
281 Broadway
Revere, MA 02151
Contact: Steve Callahan
Phone: 617-452-6719
Email: callahansr@cdmsmith.com

Applicant/Operator
R&D Site Development
7 Hemlock Lane
Groveland, MA 01834
Contact: William Daley
Phone: 781-820-0227
Email: bill@rdsitedevelopment.com

Consultant/LSP
TERRA Environmental, LLC
159 Haven Street, Second Floor
Reading, MA 01867
Contact: Philip Peterson, LSP
Phone: 781-944-6851
Email: ppeterson@terra-env.com

2.0 PROPOSED SCOPE OF WORK

The work under this project includes sewer replacement, a new wastewater pump station and drainage improvements along Jones Road, Henry Street, George Avenue, Dolphin Avenues (the "Project") in the City of Revere. A Site location plan is provided as **Figure 1**. Proposed construction includes the rehabilitation and replacement of existing drains, sewer pipes, manholes, catch basins, and a new wastewater pump station and valve vault at the west end of Jones Road near the intersection of George Avenue. Approximately 3,200 linear feet of sewer and 2,400 linear feet of drain lines are expected.

3.0 EXISTING SITE AND ENVIRONMENTAL CONDITIONS

The Project is located within public rights of way in a residential area of Revere. Single and multi-family, one-story and two-story structures are located along the streets. The Project area runs between Jones Road to the north and the intersection of Dolphin Avenue and Leverett Avenue to the south, as shown in **Figure 2**. The Project slopes gradually from approximately El. 4.5 feet to El. 9.5 feet (North American Vertical Datum of 1998, NAVD88). A park is present along the south end of Dolphin Avenue. Broad Sound is located approximately 500 feet to the east and north of the Project. Sales Creek is located approximately 500 feet to the west. Sales creek discharges to Belle Isle Inlet, which outlets to Broad Sound (Lynn Harbor).

Per the Massachusetts Department of Environmental Protection (MassDEP) Phase I Site Assessment Maps, the limits of the Project are located within 500-feet of residentially zoned properties, FEMA 100-year floodplain, and protected open space (George Avenue Park and Louis Pasteur Park). The Project area is not located within a MassDEP-approved Wellhead Protection Area (Zone II Area), MassDEP Interim

Wellhead Protection Area (IWPA), or potentially productive aquifer (PPA), and no public water supplies or private drinking water wells are located within 500 feet of the Site. Further, there are no Areas of Critical Environmental Concern, no fish habitats, no habitats of Species of Special Concern or Threatened or Endangered Species within 500 feet of the Project area.

3.1 DETERMINATION OF ENDANGERED SPECIES ACT ELIGIBILITY

A review of the U.S. Fish and Wildlife Service, Information for Planning and Consultation (IPaC) online database identified one (1) species potentially affected by activities in this location. A copy of the United States Department of the Interior letter is included in **Appendix C**.

3.2 DETERMINATION OF NATIONAL HISTORICAL PRESERVATION ACT ELIGIBILITY

A review of the online Massachusetts Cultural Resource Information System and the National Register of Historical Places for Suffolk County in Boston, Massachusetts did not identify records or addresses of historic places that exist at the Project area and/or outfall location. Several historical structures are located outside the Project area on Endicott Avenue and Winthrop Parkway. Discharges do not have the potential to affect historic properties outside the Project area, and are therefore categorized as Criterion A. Documentation is provided in **Appendix C**.

3.3 REGULATORY BACKGROUND

There is one (1) Disposal Site, as defined by the Massachusetts Contingency Plan (MCP) at 310 Code of Massachusetts Regulations (CMR) 40.0000 within the Project area. Further information is presented below.

3.3.1 RTN 3-35955 – City of Revere, Utility-Related Abatement Measure (URAM) Plan

A subsurface soil exploration program was conducted by CDM Smith to evaluate potential hazardous materials and environmental concerns for the Beachmont-Sales Creek Project. Phase I and II investigations included installation of geotechnical soil borings for collection of analytical soil samples, and installation of monitoring wells for groundwater analysis.

Results of subsurface soil characterization sampling detected concentrations of several SVOCs including Benzo(a)pyrene, Benzo(a)fluoranthene, Dibenzo(a,h)anthracene, Naphthalene, 2,4-Dimethytlphenol, 2-Methylnaphthalene, Acenaphthylene, Benzo(a)anthracene, Indeno(1,2,3-cd)pyrene, Phenathrene, Phenol, Benzo(k)fluoranthene, Chrysene, and Dibenzofuran; TPH, and 1,4-Dioxane in excess of MCP reportable concentrations for S-1 soil (RCS-1). In addition, results of groundwater sampling detected lead above the applicable site reportable concentration (RCGW-2) criteria.

Oral notification of reportable concentrations in soil and groundwater was provided to the MassDEP on October 31, 2019. MassDEP subsequently assigned Release Tracking Number (RTN) 3-35955. CDM Smith submitted a URAM to the MassDEP on November 7, 2019 for the management and treatment of groundwater and disposal of contaminated soil excavated during the Project.

Additional information is available from the Massachusetts Department of Environmental Protection (MassDEP) Data Portal:
https://eeaonline.eea.state.ma.us/EEA/fileviewer/Default.aspx?formdataid=0&documentid=523304

4.0 CONSTRUCTION SITE DEWATERING

It is anticipated that during site construction, excavations will extend below groundwater elevation and the discharge observed will likely be on order of up to 100 gallons per minute (gpm). These estimates do not include surface run-off which will be removed from the excavation during periods of precipitation.

Groundwater was observed at approximately 4 feet below existing grade within the Project limits, during groundwater sampling conducted by TERRA in November of 2019. Given the shallow groundwater, temporary on-Site collection and recharge of groundwater may not be feasible during construction. As a result, construction dewatering will discharge collected groundwater directly into an on-Site drainage manhole and ultimately into the Atlantic Ocean under the requested Remediation General Permit.

4.1 GROUNDWATER AND SURFACE WATER ANALYSIS

4.1.1 Groundwater Analysis (CDM Smith)

In preparation of the Project, CDM Smith conducted groundwater sampling in March of 2018. Two monitoring wells identified as B-4C-MW and CDM-MW-PUMP (see **Figure 2** for locations) were sampled for general chemistry (total solids, total cyanide, nitrogen, total phenolics), total metals (antimony, arsenic, cadmium chromium, copper, iron, lead, mercury, nickel, selenium, silver, zinc), SVOCs, and polychlorinated biphenyls (PCBs). Groundwater results detected lead in MW-PUMP above the applicable RCGW-2 criteria of 10 ug/L, at a concentration of 11.96 ug/L. Additional parameters detected in groundwater below applicable RCGW-2 criteria included total suspended solids, arsenic, iron, 1,4-Dioxane, a minimal number of VOCs, and a select group of SVOCs commonly referred to as Petroleum Aromatic Hydrocarbons (PAHs). An analytical summary table is provided in **Table 1**. Copies of laboratory analytical results are included in **Appendix D**.

4.1.2 Groundwater Analysis (TERRA)

On December 2, 2019, TERRA collected a groundwater sample at a newly installed monitoring well identified as P-4 (see **Figure 2** for location). The monitoring well was installed within the Project limits on Jones Road. The sample was analyzed for RGP parameters including:

- Total metals (antimony, arsenic, cadmium, chromium (hexavalent, trivalent, and total), copper, iron, lead, nickel, mercury, selenium, silver, and zinc) in accordance with Method SW-846 6010B and SW-846 7471B
- Polychlorinated biphenyls (PCBs) by Method SW846 8082
- Volatile organic compounds (VOCs) by Method SW-846 8260B
- Semi-volatile Organic Compounds (SVOCs) by Method SW-846 8270C (Includes PAHs, specific polycyclic aromatic hydrocarbons)
- Pesticides by Method SW-8081B
- 1,4-Dioxane by Method SW-8260C
- Total Suspended Solids, Chloride/Total Residual Chlorine, pH, Oil and Grease, ammonia, chloride, other miscellaneous inorganics

Laboratory analysis detected several metals, VOCs, and SVOCs above laboratory detection limits. No detections were above the applicable MCP RCGW-1 and RCGW-2 Standards, with the exception of total cyanide above the applicable RCGW-2 criteria of 0.03 mg/L at a concentration of 0.043 mg/L. A summary

of analytical data is provided in **Table 2**. Copies of laboratory analytical results are included in **Appendix D**.

4.2 TREATMENT SYSTEM

Based on the results of groundwater testing performed at the subject site, the treatment of dewatered groundwater during construction will be necessary prior to its off-site discharge. The detected concentrations of metals and SVOCs are considered to be likely attributable to total suspended solids. Therefore, a 21,000-gallon capacity settling tank and bag filters in series will be required to settle and filter out suspended soil particles in the discharge during construction dewatering to meet applicable effluent limits established by the US EPA prior to off-site discharge. Dewatered groundwater will be pumped to an on-Site drainage manhole that will ultimately discharge to the ocean at Lynn Harbor. If petroleum impacted groundwater is encountered during excavation, a granular activated carbon (GAC) filter will be required to facilitate groundwater discharge. A schematic of the treatment system is shown on **Figure 3**.

5.0 CONCLUSION

The purpose of this report is to assess site environmental conditions and groundwater data at the Sales Creek Project located in Revere, Massachusetts to support the attached Notice of Intent (NOI) for coverage under the Remediation General Permit (RGP) MAG910000 for the discharge of construction dewatering effluent into the Atlantic Ocean via the City of Revere storm drainage system.

The treatment of dewatered groundwater during construction will be necessary prior to its off-site discharge. Specifically, a 21,000-gallon capacity settling tank and bag filters in series will be required to settle and filter out suspended soil particles in the discharge during construction dewatering to meet applicable effluent limits established by the US EPA prior to off-site discharge.

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

Very truly yours,
TERRA Environmental, LLC

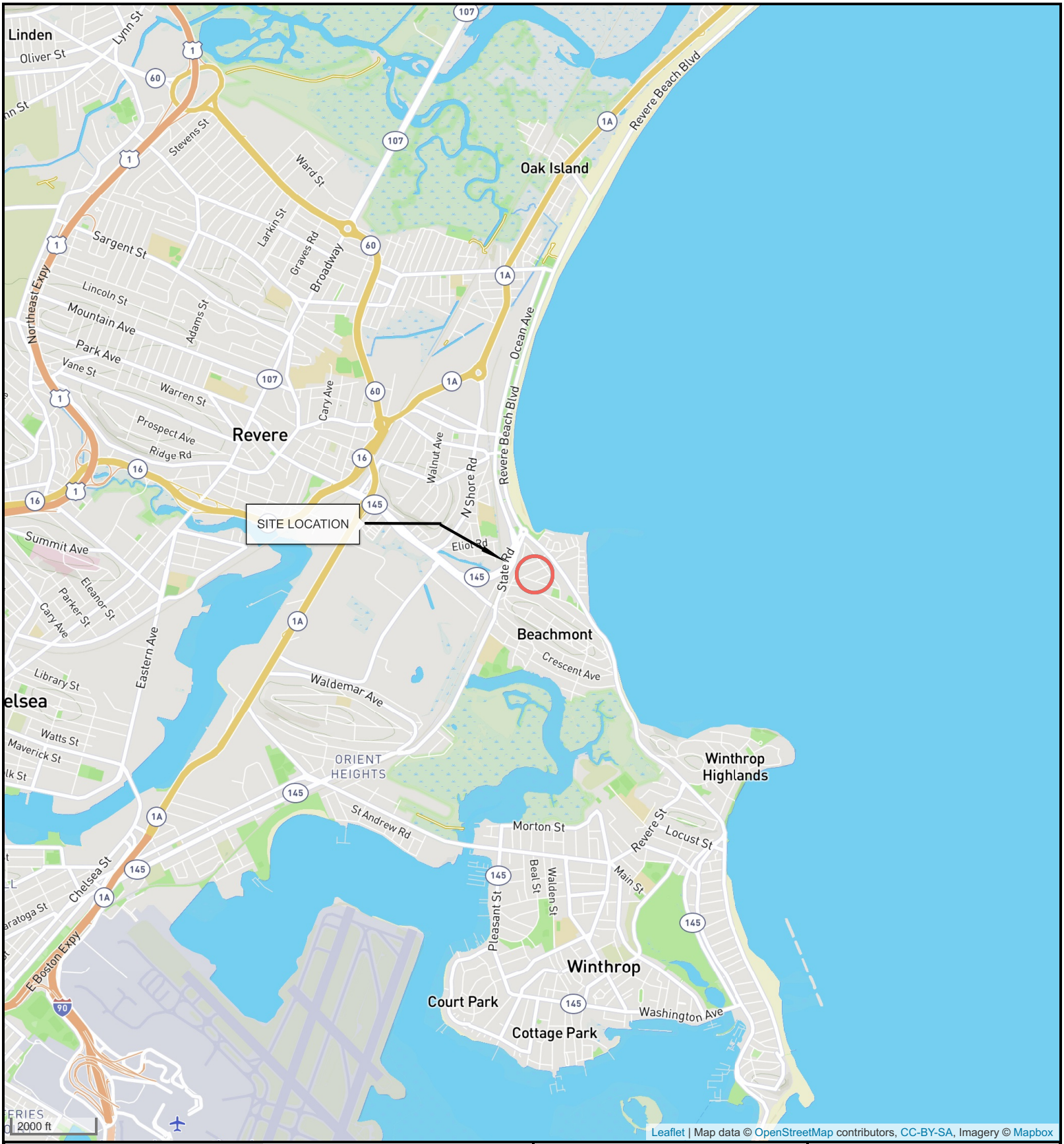
James McMullen
Environmental Scientist

Christopher M. Ragnelli, EIT
Project Engineer

Philip M. Peterson, LSP
Principal / LSP

FIGURES

FIGURE 1: SITE LOCATION MAP



Latitude: 42.399730
Longitude: -70.988930

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19-125
Beachmont -Sales Creek Sewer and Drainage Improvements Project

FIGURE 1
SITE LOCATION MAP

Jones Road, Henry Street, George Avenue, Dolphin Avenue
Revere, Massachusetts

FIGURE 2: SITE PLAN

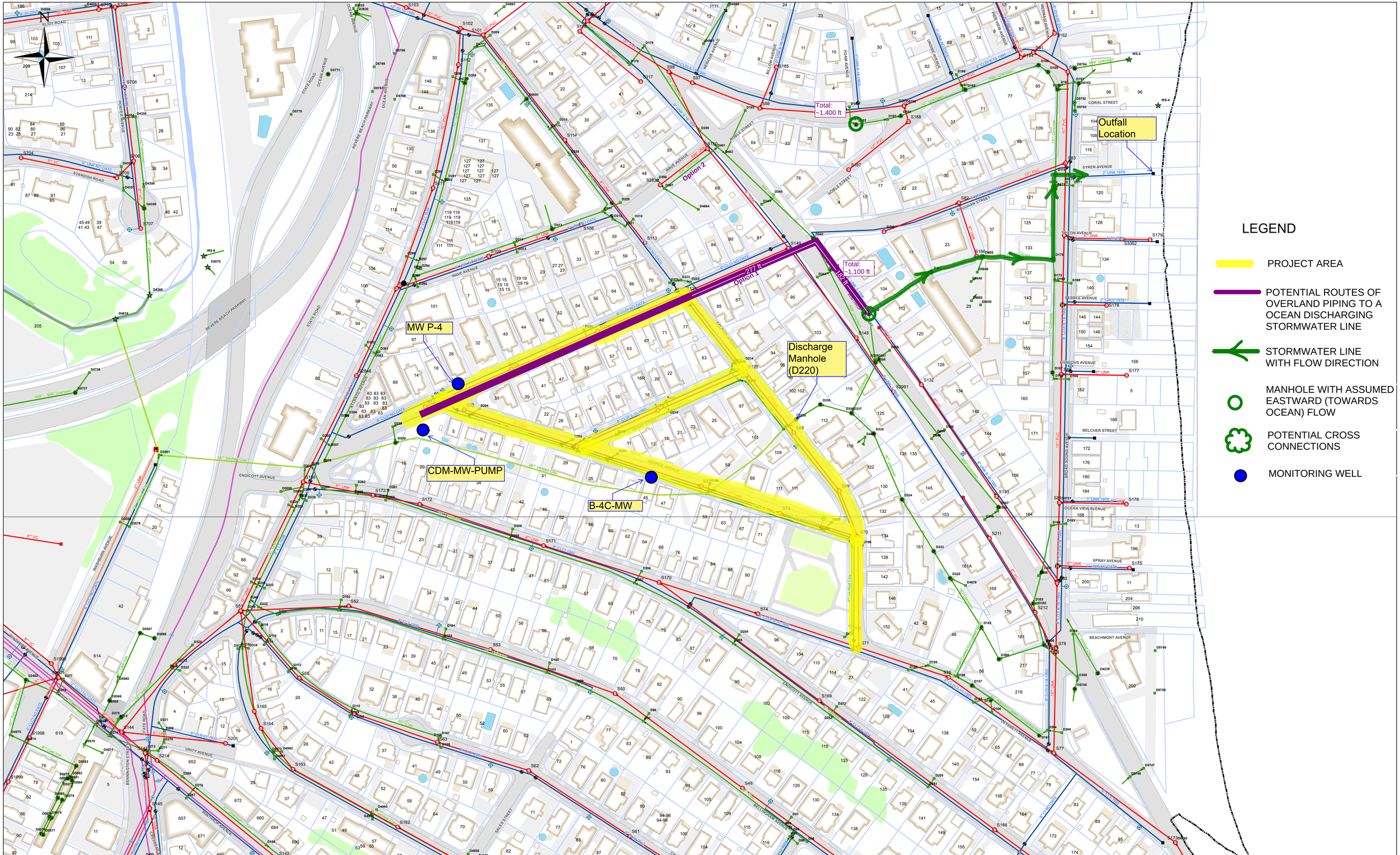
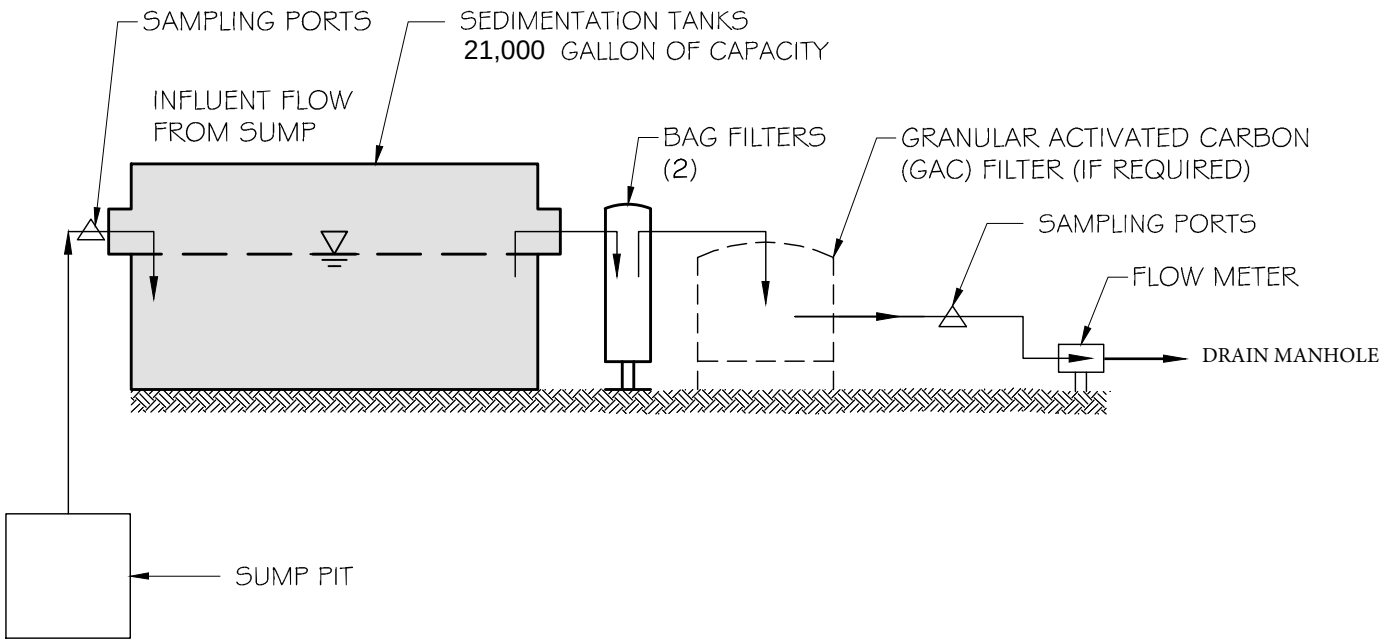


Figure 2: Proposed Discharge Route - Overland Piping to Stormwater Drains & Ocean Discharge
Beachmont Sales Creek Neighborhood Sewer and Drainage Improvement Project
Revere, Massachusetts

FIGURE 3: TREATMENT SYSTEM SCHEMATIC

Figure 3



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Beachmont-Sales Creek Neighborhood Sewer and Drainage Improvements Project
City of Revere, Massachusetts

Schematic of Treatment System

Prepared For:
R&D Site Development

Prepared By:
TERRA Environmental, LLC

Date: Feb, 2020	Dwn: CR	Chkd: PP	Scale: NTS
Project No: 19-125			

TABLES

TABLE 1: CDM GROUNDWATER DATA

Table 1-3
Summary of Groundwater Sampling Results

Beachmont-Sales Creek Revere
Revere, Massachusetts

LOCATION						B-4C-MW		CDM-MW-PUMP	
CLIENT SAMPLE ID						B-4C-MW		MW-PUMP	
LAB SAMPLE ID						L1810053-01		L1810053-02	
	CAS Number	RCGW-1-14	RCGW-2-14	RGP Criteria WQBEL	Units		Qual		Qual
General Chemistry									
Solids, Total Suspended	---	-	-	30	mg/l	NA		**100**	
Cyanide, Total	57-12-5	30	30	5.2	ug/l	0.005	U	0.005	U
Nitrogen, Ammonia	7664-41-7	-	-	-	mg/L	NA		**10.3**	
Phenolics, Total	---	-	-	-	ug/l	NA		0.03	U
Total Metals									
Antimony, Total	7440-36-0	6	8000	640	ug/l	4	U	4	U
Arsenic, Total	7440-38-2	10	900	10	ug/l	**18.62**		**3.14**	
Cadmium, Total	7440-43-9	4	4	0.25	ug/l	0.2	U	0.2	U
Chromium, Total	7440-47-3	100	300	74	ug/l	**9.15**		**5.55**	
Copper, Total	7440-50-8	10000	100000	9.0	ug/l	**3.92**		**4.22**	
Iron, Total	7439-89-6	-	-	1000	ug/l	**2,820**		**2,020**	
Lead, Total	7439-92-1	10	10	2.5	ug/l	**2.23**		**11.96**	
Mercury, Total	7439-97-6	2	20	0.77	ug/l	0.2	U	0.2	U
Nickel, Total	7440-02-0	100	200	52	ug/l	**6.92**		**8.22**	
Selenium, Total	7782-49-2	50	100	5.0	ug/l	5	U	5	U
Silver, Total	7440-22-4	7	7	3.2	ug/l	0.4	U	0.4	U
Zinc, Total	7440-66-6	900	900	120	ug/l	**17.7**		**27.38**	
Microextractables by GC									
1,2-Dibromoethane	106-93-4	0.02	2	0.05	ug/l	0.01	U	0.01	U
Volatile Organics by GC/MS									
1,1,1,2-Tetrachloroethane	630-20-6	5	10	-	ug/l	0.5	U	0.5	U
1,1,1-Trichloroethane	71-55-6	200	4000	200	ug/l	0.5	U	0.5	U
1,1,2,2-Tetrachloroethane	79-34-5	2	9	-	ug/l	0.5	U	0.5	U
1,1,2-Trichloroethane	79-00-5	5	900	5	ug/l	0.75	U	0.75	U
1,1-Dichloroethane	75-34-3	70	2000	70	ug/l	0.75	U	0.75	U
1,1-Dichloroethene	75-35-4	7	80	3.2	ug/l	0.5	U	0.5	U
1,1-Dichloropropene	563-58-6	-	-	-	ug/l	2.5	U	2.5	U
1,2,3-Trichlorobenzene	87-61-6	-	-	-	ug/l	2.5	U	2.5	U
1,2,3-Trichloropropane	96-18-4	1000	10000	-	ug/l	5	U	5	U
1,2,4-Trichlorobenzene	120-82-1	70	200	-	ug/l	2.5	U	2.5	U
1,2,4-Trimethylbenzene	95-63-6	10000	100000	-	ug/l	2.5	U	2.5	U
1,2-Dibromo-3-chloropropane	96-12-8	100	1000	-	ug/l	2.5	U	2.5	U
1,2-Dibromoethane	106-93-4	0.02	2	0.05	ug/l	*2*	*U*	*2*	*U*
1,2-Dichlorobenzene	95-50-1	600	2000	600	ug/l	2.5	U	2.5	U
1,2-Dichloroethane	107-06-2	5.0	5.0	5.0	ug/l	0.5	U	0.5	U
1,2-Dichloroethene, Total	540-59-0	-	-	-	ug/l	0.5	U	0.5	U
1,2-Dichloropropane	78-87-5	3	3	-	ug/l	1.8	U	1.8	U
1,3,5-Trimethylbenzene	108-67-8	100	1000	-	ug/l	2.5	U	2.5	U
1,3-Dichlorobenzene	541-73-1	100	6000	320	ug/l	2.5	U	2.5	U
1,3-Dichloropropane	142-28-9	5000	50000	-	ug/l	2.5	U	2.5	U
1,3-Dichloropropene, Total	542-75-6	0.4	10	-	ug/l	*0.5*	*U*	*0.5*	*U*
1,4-Dichlorobenzene	106-46-7	5	60	5	ug/l	2.5	U	2.5	U
1,4-Dichlorobutane	110-56-5	-	-	-	ug/l	5	U	5	U
2,2-Dichloropropane	594-20-7	-	-	-	ug/l	2.5	U	2.5	U
2-Butanone	78-93-3	4000	50000	-	ug/l	**8**		5	U
2-Hexanone	591-78-6	1000	10000	-	ug/l	5	U	5	U
4-Methyl-2-pentanone	108-10-1	350	50000	-	ug/l	5	U	5	U
Acetone	67-64-1	6300	50000	7970	ug/l	**77**		5	U
Acrylonitrile	107-13-1	-	-	-	ug/l	5	U	5	U
Benzene	71-43-2	5	1000	5.0, (See Note 1)	ug/l	0.5	U	0.5	U
Bromobenzene	108-86-1	1000	10000	-	ug/l	2.5	U	2.5	U
Bromochloromethane	74-97-5	-	-	-	ug/l	2.5	U	2.5	U
Bromodichloromethane	75-27-4	3	6	-	ug/l	0.5	U	0.5	U
Bromoform	75-25-2	4	700	-	ug/l	2	U	2	U
Bromomethane	74-83-9	7	7	-	ug/l	1	U	1	U
Carbon disulfide	75-15-0	1000	10000	-	ug/l	5	U	5	U
Carbon tetrachloride	56-23-5	2	2	1.6	ug/l	0.5	U	0.5	U
Chlorobenzene	108-90-7	100	200	-	ug/l	0.5	U	0.5	U
Chloroethane	75-00-3	1000	10000	-	ug/l	1	U	1	U
Chloroform	67-66-3	50	50	-	ug/l	0.75	U	0.75	U
Chloromethane	74-87-3	1000	10000	-	ug/l	2.5	U	2.5	U
cis-1,2-Dichloroethene	156-59-2	20	20	70	ug/l	0.5	U	0.5	U
cis-1,3-Dichloropropene	10061-01-5	0.4	10	-	ug/l	*0.5*	*U*	*0.5*	*U*
Dibromochloromethane	124-48-1	2	20	-	ug/l	0.5	U	0.5	U
Dibromomethane	74-95-3	5000	50000	-	ug/l	5	U	5	U

Table 1-3
Summary of Groundwater Sampling Results

Beachmont-Sales Creek Revere
Revere, Massachusetts

LOCATION						B-4C-MW		CDM-MW-PUMP	
CLIENT SAMPLE ID						B-4C-MW		MW-PUMP	
LAB SAMPLE ID						L1810053-01		L1810053-02	
	CAS Number	RCGW-1-14	RCGW-2-14	RGP Criteria WQBEL	Units		Qual		Qual
Dichlorodifluoromethane	75-71-8	10000	100000	-	ug/l	5	U	5	U
Ethyl ether	60-29-7	1000	10000	-	ug/l	2.5	U	2.5	U
Ethyl methacrylate	97-63-2	-	-	-	ug/l	5	U	5	U
Ethylbenzene	100-41-4	700	5000	See Note 1	ug/l	0.5	U	0.5	U
Hexachlorobutadiene	87-68-3	0.6	50	-	ug/l	0.5	U	0.5	U
Isopropylbenzene	98-82-8	10000	100000	-	ug/l	0.5	U	0.5	U
Methyl tert butyl ether	1634-04-4	70	5000	20	ug/l	1	U	1	U
Methylene chloride	75-09-2	5	2000	4.6	ug/l	3	U	3	U
n-Butylbenzene	104-51-8	-	-	-	ug/l	0.5	U	0.5	U
n-Propylbenzene	103-65-1	1000	10000	-	ug/l	0.5	U	0.5	U
Naphthalene	91-20-3	140	700	-	ug/l	**2.8**		2.5	U
o-Chlorotoluene	95-49-8	1000	10000	-	ug/l	2.5	U	2.5	U
o-Xylene	95-47-6	3000	3000	See Note 1	ug/l	1	U	1	U
p-Chlorotoluene	106-43-4	-	-	-	ug/l	2.5	U	2.5	U
p-Isopropyltoluene	99-87-6	1000	10000	-	ug/l	0.5	U	0.5	U
p/m-Xylene	179601-23-1	3000	3000	See Note 1	ug/l	1	U	1	U
sec-Butylbenzene	135-98-8	-	-	-	ug/l	0.5	U	0.5	U
Styrene	100-42-5	100	100	-	ug/l	1	U	1	U
Tert-Butyl Alcohol	75-65-0	-	-	120	ug/l	10	U	10	U
tert-Butylbenzene	98-06-6	1000	10000	-	ug/l	2.5	U	2.5	U
Tertiary-Amyl Methyl Ether	994-05-8	-	-	90	ug/l	2	U	2	U
Tetrachloroethene	127-18-4	5	50	3.3	ug/l	0.5	U	0.5	U
Tetrahydrofuran	109-99-9	5000	50000	-	ug/l	5	U	5	U
Toluene	108-88-3	1000	40000	See Note 1	ug/l	**1.3**		0.75	U
trans-1,3-Dichloropropene	10061-02-6	0.4	10	-	ug/l	*0.5*	*U*	*0.5*	*U*
trans-1,4-Dichloro-2-butene	110-57-6	-	-	-	ug/l	2.5	U	2.5	U
Trichloroethene	79-01-6	5	5	5	ug/l	0.5	U	0.5	U
Trichlorofluoromethane	75-69-4	10000	100000	-	ug/l	2.5	U	2.5	U
Vinyl acetate	108-05-4	10000	100000	-	ug/l	5	U	5	U
Vinyl chloride	75-01-4	2	2	2	ug/l	1	U	1	U
Xylenes, Total	1330-20-7	3000	3000	See Note 1	ug/l	1	U	1	U
BTEX	-	-	-	100	ug/l	1.3		ND	
Volatile Organics by GC/MS-SIM									
1,4-Dioxane	123-91-1	0.3	6000	200	ug/l	**19**		*3*	*U*
Semivolatile Organics by GC/MS									
1,2,4-Trichlorobenzene	120-82-1	70	200	-	ug/l	4.9	U	5	U
1,2-Dichlorobenzene	95-50-1	600	2000	600	ug/l	1.9	U	2	U
1,3-Dichlorobenzene	541-73-1	100	6000	320	ug/l	1.9	U	2	U
1,4-Dichlorobenzene	106-46-7	5	60	5	ug/l	1.9	U	2	U
2,4,5-Trichlorophenol	95-95-4	200	3000	-	ug/l	4.9	U	5	U
2,4,6-Trichlorophenol	88-06-2	10	500	-	ug/l	4.9	U	5	U
2,4-Dichlorophenol	120-83-2	10	2000	-	ug/l	4.9	U	5	U
2,4-Dimethylphenol	105-67-9	60	40000	-	ug/l	4.9	U	5	U
2,4-Dinitrophenol	51-28-5	200	20000	-	ug/l	19	U	20	U
2,4-Dinitrotoluene	121-14-2	30	20000	-	ug/l	4.9	U	5	U
2,6-Dinitrotoluene	606-20-2	1000	10000	-	ug/l	4.9	U	5	U
2-Chlorophenol	95-57-8	10	7000	-	ug/l	1.9	U	2	U
2-Methylphenol	95-48-7	5000	50000	-	ug/l	4.9	U	5	U
2-Nitroaniline	88-74-4	-	-	-	ug/l	4.9	U	5	U
2-Nitrophenol	88-75-5	1000	10000	-	ug/l	9.7	U	10	U
3,3'-Dichlorobenzidine	91-94-1	80	2000	-	ug/l	4.9	U	5	U
3-Methylphenol/4-Methylphenol	108-39-4	5000	50000	-	ug/l	**99**		5	U
3-Nitroaniline	99-09-2	-	-	-	ug/l	4.9	U	5	U
4,6-Dinitro-o-cresol	534-52-1	500	5000	-	ug/l	9.7	U	10	U
4-Bromophenyl phenyl ether	101-55-3	1000	10000	-	ug/l	1.9	U	2	U
4-Chloroaniline	106-47-8	20	300	-	ug/l	4.9	U	5	U
4-Chlorophenyl phenyl ether	7005-72-3	10000	100000	-	ug/l	1.9	U	2	U
4-Nitroaniline	100-01-6	10000	100000	-	ug/l	4.9	U	5	U
4-Nitrophenol	100-02-7	1000	10000	-	ug/l	9.7	U	10	U
Aniline	62-53-3	10000	100000	-	ug/l	1.9	U	2	U
Azobenzene	103-33-3	500	5000	-	ug/l	1.9	U	2	U
Benzidine	92-87-5	-	-	-	ug/l	19	U	20	U
Benzoic Acid	65-85-0	-	-	-	ug/l	49	U	50	U
Benzyl Alcohol	100-51-6	-	-	-	ug/l	1.9	U	2	U
Biphenyl	92-52-4	-	-	-	ug/l	1.9	U	2	U
Bis(2-chloroethoxy)methane	111-91-1	5000	50000	-	ug/l	4.9	U	5	U
Bis(2-chloroethyl)ether	111-44-4	30	30	-	ug/l	1.9	U	2	U

Table 1-3
Summary of Groundwater Sampling Results

Beachmont-Sales Creek Revere
Revere, Massachusetts

LOCATION						B-4C-MW		CDM-MW-PUMP	
CLIENT SAMPLE ID						B-4C-MW		MW-PUMP	
LAB SAMPLE ID						L1810053-01		L1810053-02	
	CAS Number	RCGW-1-14	RCGW-2-14	RGP Criteria WQBEL	Units		Qual		Qual
Bis(2-chloroisopropyl)ether	108-60-1	30	100	-	ug/l	1.9	U	2	U
Bis(2-ethylhexyl)phthalate	117-81-7	6	50000	-	ug/l	2.9	U	3	U
Butyl benzyl phthalate	85-68-7	1000	10000	-	ug/l	4.9	U	5	U
Carbazole	86-74-8	-	-	-	ug/l	1.9	U	2	U
Di-n-butylphthalate	84-74-2	500	5000	-	ug/l	4.9	U	5	U
Di-n-octylphthalate	117-84-0	10000	100000	-	ug/l	4.9	U	5	U
Dibenzofuran	132-64-9	1000	10000	-	ug/l	1.9	U	2	U
Diethyl phthalate	84-66-2	2000	9000	-	ug/l	4.9	U	5	U
Dimethyl phthalate	131-11-3	300	50000	-	ug/l	4.9	U	5	U
Hexachlorocyclopentadiene	77-47-4	500	5000	-	ug/l	19	U	20	U
Isophorone	78-59-1	1000	10000	-	ug/l	4.9	U	5	U
n-Nitrosodi-n-propylamine	621-64-7	500	5000	-	ug/l	4.9	U	5	U
n-Nitrosodimethylamine	62-75-9	500	5000	-	ug/l	1.9	U	2	U
NDPA/DPA	86-30-6	1000	10000	-	ug/l	1.9	U	2	U
Nitrobenzene	98-95-3	5000	50000	-	ug/l	1.9	U	2	U
p-Chloro-m-cresol	59-50-7	10000	100000	-	ug/l	1.9	U	2	U
Phenol	108-95-2	1000	2000	300	ug/l	**72**		5	U
Pyridine	110-86-1	5000	50000	-	ug/l	3.4	U	3.5	U
Semivolatile Organics by GC/MS-SIM									
1-Methylnaphthalene	90-12-0	-	-	-	ug/l	**1.4**		0.1	U
2-Chloronaphthalene	91-58-7	10000	100000	-	ug/l	0.19	U	0.2	U
2-Methylnaphthalene	91-57-6	10	2000	-	ug/l	**0.67**		0.1	U
Acenaphthene	83-32-9	20	10000	See Group II	ug/l	**0.56**		0.1	U
Acenaphthylene	208-96-8	30	40	See Group II	ug/l	**0.3**		0.1	U
Anthracene	120-12-7	30	30	See Group II	ug/l	**0.69**		0.1	U
Benzo(a)anthracene	56-55-3	1	1000	0.0038	ug/l	**0.64**		0.1	U
Benzo(a)pyrene	50-32-8	0.2	500	0.0038	ug/l	**0.56**		0.1	U
Benzo(b)fluoranthene	205-99-2	1	400	0.0038	ug/l	**0.68**		**0.15**	
Benzo(ghi)perylene	191-24-2	20	20	See Group II	ug/l	**0.35**		0.1	U
Benzo(k)fluoranthene	207-08-9	1	100	0.0038	ug/l	**0.28**		0.1	U
Chrysene	218-01-9	2	70	0.0038	ug/l	**0.7**		**0.11**	
Dibenzo(a,h)anthracene	53-70-3	0.5	40	0.0038	ug/l	**0.1**		0.1	U
Fluoranthene	206-44-0	90	200	See Group II	ug/l	**1.2**		**0.19**	
Fluorene	86-73-7	30	40	See Group II	ug/l	**1.4**		0.1	U
Hexachlorobenzene	118-74-1	1	1	-	ug/l	0.78	U	0.8	U
Hexachlorobutadiene	87-68-3	0.6	50	-	ug/l	0.49	U	0.5	U
Hexachloroethane	67-72-1	8	100	-	ug/l	0.78	U	0.8	U
Indeno(1,2,3-cd)pyrene	193-39-5	0.5	100	0.0038	ug/l	**0.36**		0.1	U
Naphthalene	91-20-3	140	700	20.0; See Group II	ug/l	**0.59**		**0.11**	
Pentachlorophenol	87-86-5	1	200	1	ug/l	0.78	U	0.8	U
Phenanthrene	85-01-8	40	10000	See Group II	ug/l	**3.3**		**0.21**	
Pyrene	129-00-0	20	20	See Group II	ug/l	**1.7**		**0.18**	
Total Group II PAHs	-	-	-	100	ug/l	**10.09**		**0.69**	
Polychlorinated Biphenyls by GC									
Aroclor 1016	12674-11-2	0.5	5	-	ug/l	0.25	U	NA	
Aroclor 1221	11104-28-2	0.5	5	-	ug/l	0.25	U	NA	
Aroclor 1232	11141-16-5	0.5	5	-	ug/l	0.25	U	NA	
Aroclor 1242	53469-21-9	0.5	5	-	ug/l	**0.266**		NA	
Aroclor 1248	12672-29-6	0.5	5	-	ug/l	0.25	U	NA	
Aroclor 1254	11097-69-1	0.5	5	-	ug/l	0.25	U	NA	
Aroclor 1260	11096-82-5	0.5	5	-	ug/l	0.2	U	NA	
Total PCBs	-	-	-	0.5	ug/l	**0.266**		NA	

Notes:
Italicized values greater than applicable laboratory reporting limits
BOLD values are detects
RGP WQBEL: Remediation General Permit Water Quality Based Effluent Limit
Exceeds RCGW-1 Criteria and/or RCGW-2 Criteria
Exceeds RGP WQBEL

TABLE 2: TERRA GROUNDWATER DATA

TABLE 1
Summary of Analytical Results for Groundwater
Beachmont – Sales Creek Neighborhood Sewer and Drainage Improvements Project
Revere, MA

TERRA Environmental 159 Haven Street Second Floor Reading, MA 01867 (781) 944-6851	Client Id Collection Date Lab Sample ID Matrix CAS	Units	Regulatory Criteria MCP Reportable Concentrations (RCGW-2)	Regulatory Criteria RGP Criteria WQBEL	P-4 12/02/2019 & 2/7/2020 CE70270 GROUND WATER Result	RL
Miscellaneous/Inorganics						
1,2-Dibromoethane (EDB)	106-93-4	ug/L	2	0.05	ND	0.02
Ammonia as Nitrogen	7664-41-7	mg/L	10		4.65	0.25
Chloride	16887-00-6	mg/L			1690	60
Chlorine Residual	7782-50-5	mg/L			ND	0.02
Chromium, Hexavalent	18540-29-9	mg/L	0.3		ND	0.01
Ethanol	64-17-5	ug/L	10000		ND	400
O&G, Non-polar Material	PHNX - OIL-GREASE-NP	mg/L			ND	1.4
PH	PHNX - PH	pH Units			7.09	1.0
Phenolics	64743-03-9	mg/L			ND	0.075
Tert-amyl-methyl-ether	994-05-8	ug/L			ND	1
Tert-butyl alcohol	75-65-0	ug/L	10000		ND	50
Total Cyanide	57-12-5	mg/L	0.03	0.0052	0.043	0.01
Total Suspended Solids	PHNX - TOTSUSPENDSOL	mg/L		30	20	3.3
Metals Total						
Antimony	7440-36-0	mg/L	8	0.64	ND	0.005
Arsenic	7440-38-2	mg/L	0.9	0.01	ND	0.004
Cadmium	7440-43-9	mg/L	0.004	0.00025	ND	0.001
Chromium	7440-47-3	mg/L	0.3	0.074	0.018	0.001
Copper	7440-50-8	mg/L	100	0.009	0.005	0.005
Hardness (CaCO3)	PHNX - HARDNESS	mg/L			338	0.1
Iron	7439-89-6	mg/L		1	0.778	0.01
Lead	7439-92-1	mg/L	0.01	0.0025	ND	0.002
Mercury	7439-97-6	mg/L	0.02	0.00077	ND	0.0002
Nickel	7440-02-0	mg/L	0.2	0.052	0.001	0.001
Selenium	7782-49-2	mg/L	0.1	0.005	ND	0.01
Silver	7440-22-4	mg/L	0.007	0.0032	ND	0.001
Zinc	7440-66-6	mg/L	0.9	0.12	0.005	0.004
Oxygenates & Dioxane - E624.1(OXY)						
All Oxy		mg/L			ND	
Polychlorinated Biphenyls - E608.3						
All PCBs		mg/L			ND	
Semivolatiles (SIM) - 625(SIM)						
All SVOCs		mg/L			ND	
Semivolatiles - E624.1(OXY)						
All SVOCs		mg/L			ND	
Volatiles - E624.1						
All VOCs		mg/L			ND	
Pesticides - E608.3						
All Pesticides		ug/L			ND	

Notes:
ug/L: micrograms per liter
mg/L: milligrams per liter
ND: Not detected above laboratory reporting limits (RL)
RL: Laboratory reporting limits
Shaded Values: Result detected
Shaded Values: Result exceeds criteria

APPENDIX A

LIMITATIONS

The purpose of this report is to present a summary of environmental conditions, including the results of testing of groundwater samples obtained from a groundwater monitoring well within the Sales Creek Project, in Revere, Massachusetts in support of an application for approval of temporary construction dewatering discharge of groundwater into surface waters of the Commonwealth of Massachusetts under EPA's Massachusetts Remediation General Permit MAG910000.

The observations were made under the conditions stated in this report. The conclusions presented above were based on these observations. If variations in the nature and extent of subsurface conditions between the spaced subsurface explorations become evident in the future, it will be necessary to re-evaluate the conclusions presented herein after performing on-Site observations and noting the characteristics of any variations. The conclusions submitted in this report are based in part upon analytical data obtained from analysis of groundwater samples and are contingent upon their validity. The data have been reviewed, and interpretations have been made in the text. It should also be noted that fluctuations in the types and levels of contaminants and variations in their flow paths may occur due to changes in seasonal water table, past practices used in disposal, and other factors.

Laboratory analyses have been performed for specific constituents during the course of this assessment, as described in the text. However, it should be noted that additional constituents not searched for during the current study may be present in soil and groundwater at the Site.

This report and application have been prepared on behalf of, and for the exclusive use of Northern Construction Services, LLC. This report and the findings contained herein shall not, in whole or in part, be disseminated or conveyed to any other party, other than the submission to relevant governmental agencies, nor used in whole or in part by any other party without prior written consent of TERRA Environmental, LLC.

APPENDIX B

NOTICE OF INTENT – NPDES REMEDIATION GENERAL PERMIT

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

A. General site information:

<table>
<tr><td rowspan="2">1. Name of site:
Beachmont-Sales Creek</td><td colspan="3">Site address: Jones Road, Henry Street, George Avenue, Dolphin Avenues
Street:</td></tr>
<tr><td>City: Revere</td><td>State: MA</td><td>Zip: 02151</td></tr>
<tr><td rowspan="4">2. Site owner
City of Revere

Owner is (check one): ☐ Federal ■ State/Tribal ☐ Private
☐ Other; if so, specify:</td><td colspan="3">Contact Person: Steve Callahan</td></tr>
<tr><td colspan="2">Telephone: 617-452-6719</td><td>Email: callahansr@cdmsmith.com</td></tr>
<tr><td colspan="3">Mailing address: 281 Broadway
Street:</td></tr>
<tr><td>City: Revere</td><td>State: MA</td><td>Zip: 02151</td></tr>
<tr><td rowspan="4">3. Site operator, if different than owner
R&D Site Development</td><td colspan="3">Contact Person: William Daley</td></tr>
<tr><td colspan="2">Telephone: 781-820-0227</td><td>Email: bill@rdsitedevelopment.com</td></tr>
<tr><td colspan="3">Mailing address:
Street: 7 Hemlock Lane</td></tr>
<tr><td>City: Groveland</td><td>State: MA</td><td>Zip: 01834</td></tr>
<tr><td>4. NPDES permit number assigned by EPA:

NPDES permit is (check all that apply: ■ RGP ☐ DGP ☐ CGP
☐ MSGP ☐ Individual NPDES permit ☐ Other; if so, specify:</td><td colspan="3">5. Other regulatory program(s) that apply to the site (check all that apply):
■ MA Chapter 21e; list RTN(s): 3-35955
☐ NH Groundwater Management Permit or Groundwater Release Detection Permit:
☐ CERCLA
☐ UIC Program
☐ POTW Pretreatment
☐ CWA Section 404</td></tr>
</table>

B. Receiving water information:

1. Name of receiving water(s):	Waterbody identification of receiving water(s):	Classification of receiving water(s):
Lynn Harbor	MA93-53	Class SB

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

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

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

3. Indicate if the receiving water(s) is listed in the State's Integrated List of Waters (i.e., CWA Section 303(d)). Include which designated uses are impaired, and any pollutants indicated. Also, indicate if a final TMDL is available for any of the indicated pollutants. For more information, contact the appropriate State as noted in Part 4.6 of the RGP. North Coastal Pathogen TMDL, TMDL ID:50122, Fecal Coliform

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.	NA
5. Indicate the requested dilution factor for the calculation of water quality-based effluent limitations (WQBELs) determined in accordance with the instructions in Appendix V for sites in Massachusetts and Appendix VI for sites in New Hampshire.	1:1

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

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

C. Source water information:

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

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

2. Source water contaminants: Ammonia, Chloride, Total Cyanide, TSS, RCRA 8 Metals, naphthalene, toluene, 1,4-Dioxane, SVOCs, PCBs	
a. For source waters that are contaminated groundwater or contaminated surface water, indicate are any contaminants present that are not included in the RGP? (check one): ☐ Yes ■ No If yes, indicate the contaminant(s) and the maximum concentration present in accordance with the instructions in Appendix VIII.	b. For a source water that is a surface water other than the receiving water, potable water or other, indicate any contaminants present at the maximum concentration in accordance with the instructions in Appendix VIII? (check one): ☐ Yes ☐ No
3. Has the source water been previously chlorinated or otherwise contains residual chlorine? (check one): ☐ Yes ■ No	

D. Discharge information

1.The discharge(s) is a(n) (check any that apply): ☐ Existing discharge ■ New discharge ☐ New source	
Outfall(s): Drainage Manhole D220 to Outfall on Syren Avenue (See Figure)	Outfall location(s): (Latitude, Longitude) 42.400769, -70.984467
Discharges enter the receiving water(s) via (check any that apply): ☐ Direct discharge to the receiving water ■ Indirect discharge, if so, specify: Drainage Manhole D220 to D409 to Outall on Syren Avenue which discharges to Lynn Harbor ☐ A private storm sewer system ■ A municipal storm sewer system If the discharge enters the receiving water via a private or municipal storm sewer system: Has notification been provided to the owner of this system? (check one): ■ Yes ☐ No Has the operator has received permission from the owner to use such system for discharges? (check one): ■ Yes ☐ No, if so, explain, with an estimated timeframe for obtaining permission: Has the operator attached a summary of any additional requirements the owner of this system has specified? (check one): ☐ Yes ■ No	
Provide the expected start and end dates of discharge(s) (month/year): July 2020 through July 2022 Indicate if the discharge is expected to occur over a duration of: ☐ less than 12 months ■ 12 months or more ☐ is an emergency discharge	
Has the operator attached a site plan in accordance with the instructions in D, above? (check one): ■ Yes ☐ No	

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

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

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

4. Influent and Effluent Characteristics

Parameter	Known or believed absent	Known or believed present	# of samples	Test method (#)	Detection limit (µg/l)	Influent		Effluent Limitations	
						Daily maximum (µg/l)	Daily average (µg/l)	TBEL	WQBEL
A. Inorganics									
Ammonia		✔	2		250	10300		Report mg/L	---
Chloride		✔	1		60000	1690000		Report µg/l	---
Total Residual Chlorine	✔		1		20	ND		0.2 mg/L	
Total Suspended Solids		✔	2		3.3	100		30 mg/L	---
Antimony	✔		3		5	ND		206 µg/L	
Arsenic		✔			4	18.62		104 µg/L	
Cadmium	✔		3		1	ND		10.2 µg/L	
Chromium III		✔	3		1	9.15		323 µg/L	
Chromium VI	✔							323 µg/L	
Copper		✔	3		5	5		242 µg/L	
Iron		✔	3		10	2820		5,000 µg/L	
Lead		✔	3		2	11.96		160 µg/L	
Mercury	✔		3		.2	ND		0.739 µg/L	
Nickel		✔	3		1	8.22		1,450 µg/L	
Selenium	✔		3		5	ND		235.8 µg/L	
Silver	✔		3		1	ND		35.1 µg/L	
Zinc		✔	3		4	23.8		420 µg/L	
Cyanide		✔	3		5	43		178 mg/L	
B. Non-Halogenated VOCs									
Total BTEX	✔		3		1.3	ND		100 µg/L	---
Benzene	✔		3		0.7	ND		5.0 µg/L	---
1,4 Dioxane		✔	3		3	19		200 µg/L	---
Acetone		✔	2		.005	.077		7.97 mg/L	---
Phenol	✔		2		.003	NA		1,080 µg/L	

Parameter	Known or believed absent	Known or believed present	# of samples	Test method (#)	Detection limit (µg/l)	Influent		Effluent Limitations	
						Daily maximum (µg/l)	Daily average (µg/l)	TBEL	WQBEL
C. Halogenated VOCs									
Carbon Tetrachloride	✔		3		.5	ND		4.4 µg/L	
1,2 Dichlorobenzene	✔		3		2.5	ND		600 µg/L	---
1,3 Dichlorobenzene	✔		3		2.5	ND		320 µg/L	---
1,4 Dichlorobenzene	✔		3		2.5	ND		5.0 µg/L	---
Total dichlorobenzene	✔		3		2.5	ND		763 µg/L in NH	---
1,1 Dichloroethane	✔		3		.5	ND		70 µg/L	---
1,2 Dichloroethane	✔		3		.5	ND		5.0 µg/L	---
1,1 Dichloroethylene	✔		3		.5	ND		3.2 µg/L	---
Ethylene Dibromide	✔		3		2	ND		0.05 µg/L	---
Methylene Chloride	✔		3		3	ND		4.6 µg/L	---
1,1,1 Trichloroethane	✔		3		.5	ND		200 µg/L	---
1,1,2 Trichloroethane	✔		3		.75	ND		5.0 µg/L	---
Trichloroethylene	✔		3		.5	ND		5.0 µg/L	---
Tetrachloroethylene	✔		3		.5	ND		5.0 µg/L	
cis-1,2 Dichloroethylene	✔		3		.5	ND		70 µg/L	---
Vinyl Chloride	✔		3		1	ND		2.0 µg/L	---
D. Non-Halogenated SVOCs									
Total Phthalates	✔		3		4.9	ND		190 µg/L	
Diethylhexyl phthalate	✔		3		4.7	ND		101 µg/L	
Total Group I PAHs		✔				3.42		1.0 µg/L	---
Benzo(a)anthracene		✔	3		.1	.64		As Total PAHs	
Benzo(a)pyrene		✔	3		0.1	.56			
Benzo(b)fluoranthene		✔	3		0.09	.68			
Benzo(k)fluoranthene		✔	3		0.09	0.28			
Chrysene		✔	3		0.05	0.7			
Dibenzo(a,h)anthracene		✔	3		0.02	0.1			
Indeno(1,2,3-cd)pyrene		✔	3		0.1	0.36			

Parameter	Known or believed absent	Known or believed present	# of samples	Test method (#)	Detection limit (µg/l)	Influent		Effluent Limitations	
						Daily maximum (µg/l)	Daily average (µg/l)	TBEL	WQBEL
Total Group II PAHs		✔				0.59		100 µg/L	---
Naphthalene		✔	3		0.47	0.59		20 µg/L	---
E. Halogenated SVOCs									
Total PCBs		✔	3		0.059	0.266		0.000064 µg/L	---
Pentachlorophenol	✔		3		0.78	ND		1.0 µg/L	---
F. Fuels Parameters									
Total Petroleum Hydrocarbons		✔	1		1	7.09		5.0 mg/L	---
Ethanol	✔		1		0.4	ND		Report mg/L	---
Methyl-tert-Butyl Ether	✔		1		1	ND		70 µg/L	
tert-Butyl Alcohol	✔		1		50	ND		120 µg/L in MA 40 µg/L in NH	---
tert-Amyl Methyl Ether	✔		1		1	ND		90 µg/L in MA 140 µg/L in NH	---
Other (i.e., pH, temperature, hardness, salinity, LC_{50}, additional pollutants present); if so, specify:									
pH			1		1.0	7.09			
Hardness			1		0.1	338			

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:
Bag Filtration, Sedimentation, Granular Activated Carbon (GAC) filtration, if needed

2. Provide a written description of all treatment system(s) or processes that will be applied to the effluent prior to discharge.
Settling tank and sediment bags, if necessary Granular Activated Carbon (GAC) filter

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: Frac Tank Is use of a flow meter feasible? (check one): ■ Yes ☐ No, if so, provide justification:	100-gpm
Provide the proposed maximum effluent flow in gpm.	200-gpm
Provide the average effluent flow in gpm.	100-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:
N/A

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 meeting the requirements of this general permit will be developed and implemented prior to the 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 ☐ Other; if so, specify:	Check one: Yes ☐ No ☐ NA ■
Signature:	Date: 6-10-20
Print Name and Title:	Bill Daley, Project Manager

APPENDIX C

MASSDEP PRIORITY RESOURCE MAP

USGS STREAMFLOW STATISTICS REPORT

ADDITIONAL NOI SUPPORT INFORMATION

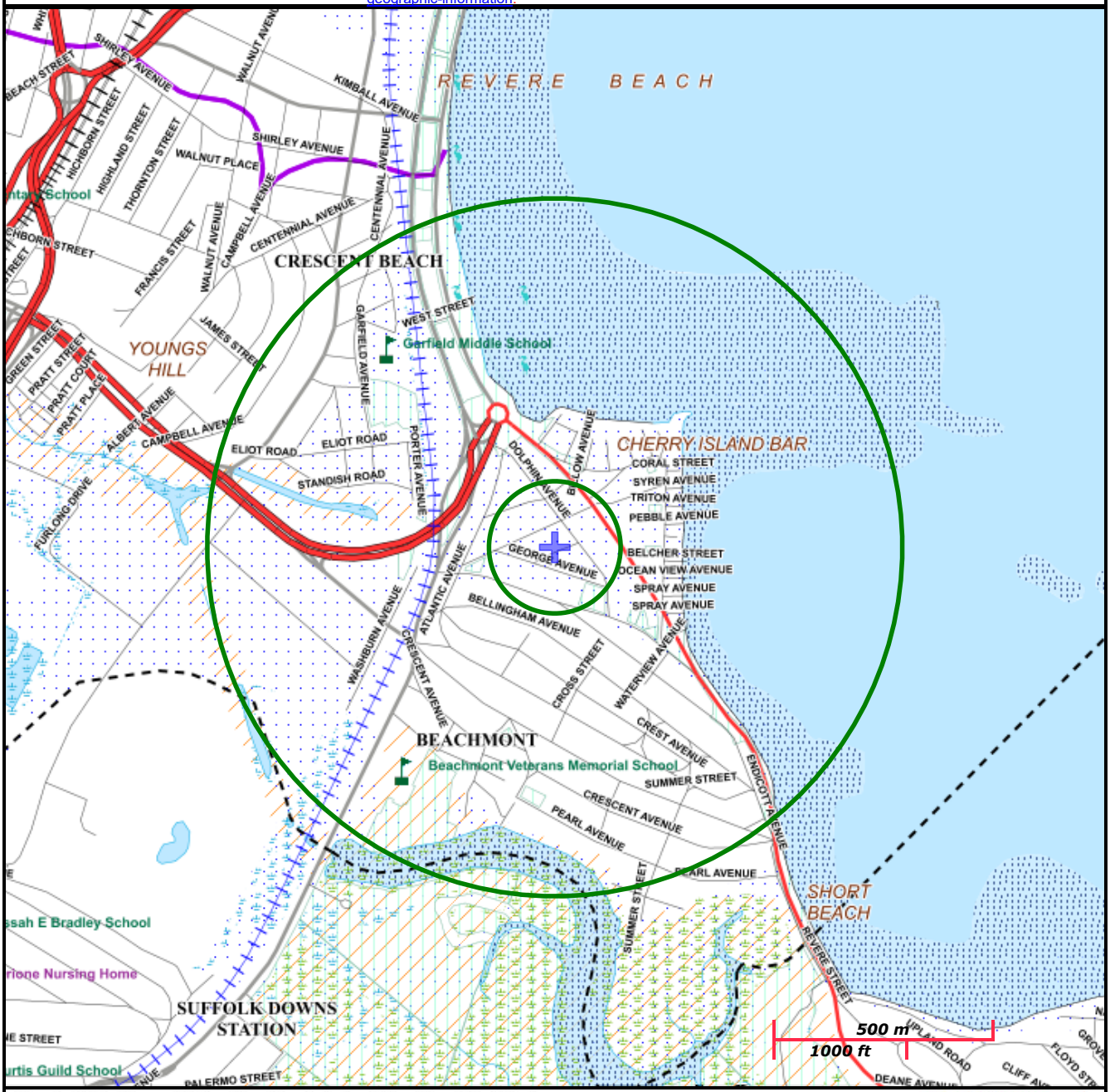
MassDEP - Bureau of Waste Site Cleanup

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

Site Information:
BEACHMONT
REVERE, MA
3-000035955
NAD83 UTM Meters:
4696052mN , 336387mE (Zone: 19)
January 14, 2020

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

MassDEP
Commonwealth of Massachusetts
Department of Environmental Protection

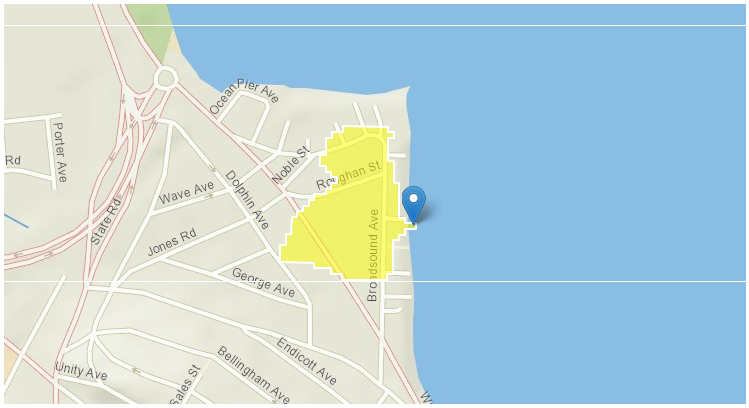


Roads: Limited Access, Divided, Other Hwy, Major Road, Minor Road, Track, Trail
Boundaries: Town, County, DEP Region; Train; Powerline; Pipeline; Aqueduct
Basins: Major, PWS; Streams: Perennial, Intermittent, Man Made Shore, Dam
Aquifers: Medium Yield, High Yield, EPA Sole Source
Non Potential Drinking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

A study area is needed before viewing the report

StreamStats Report

Region ID: MA
Workspace ID: MA20200609190846733000
Clicked Point (Latitude, Longitude): 42.40003, -70.98425
Time: 2020-06-09 15:09:01 -0400



Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	0.0153	square miles
BSLDEM250	Mean basin slope computed from 1:250K DEM	1.129	percent
DRFTPERSTR	Area of stratified drift per unit of stream length	-100000	square mile per mile
MAREGION	Region of Massachusetts 0 for Eastern 1 for Western	0	dimensionless

General Disclaimers

Parameter values have been edited, computed flows may not apply.

Upstream regulation was checked for this watershed.

This watershed is percent regulated, computed flows may not apply.

This watershed has been edited, computed flows may not apply.

The resulting delineations are derived from digital elevation data and storm drain vectors that have been processed to enforce drainage through storm drains.

Urban regression equations for peak flows were not developed using streamgages which incorporate storm drain delineations and therefore should be used with caution.

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

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	0.0153	square miles	1.61	149
BSLDEM250	Mean Basin Slope from 250K DEM	1.129	percent	0.32	24.6
DRFTPERSTR	Stratified Drift per Stream Length	-100000	square mile per mile	0	1.29
MAREGION	Massachusetts Region	0	dimensionless	0	1

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

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

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

Statistic	Value	Unit

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: January 14, 2020
Consultation Code: 05E1NE00-2020-SLI-1000
Event Code: 05E1NE00-2020-E-02815
Project Name: Beachmont-Sales Creek Neighborhood Sewer and Drainage Improvements

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: 05E1NE00-2020-SLI-1000

Event Code: 05E1NE00-2020-E-02815

Project Name: Beachmont-Sales Creek Neighborhood Sewer and Drainage Improvements

Project Type: WATER QUALITY MODIFICATION

Project Description: This project includes sewer replacement, a new wastewater pump station and drainage
improvements along Jones Road, Henry Street, George Avenue, Dolphin Avenues in the City of
Revere. The proposed construction includes the rehabilitation and replacement of the existing storm
drains, sewer pipes, manholes, and catch basins within the project area, , and the construction of a
wastewater pump station and valve vault at the west end of Jones Road near the intersection with
George Avenue. Associated manholes are expected to be prefabricated, but may be cast-in-place if
site conditions warrant. Approximately 3200 linear feet of sewer and 2400 linear feet of drain
lines are anticipated to be installed as part of this project. Construction is expected to start in February of 2020.

Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/place/42.39938757149476N70.988246790323W

Counties: Suffolk, MA

Endangered Species Act Species

There is a total of 1 threatened, endangered, or candidate species on this 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.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

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1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Birds

NAME	STATUS
Red Knot *Calidris canutus rufa* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/1864	Threatened

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

IPaC resource list

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

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

Location

Suffolk County, Massachusetts

Local office

New England Ecological Services Field Office

(603) 223-2541
(603) 223-0104

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

http://www.fws.gov/newengland

Endangered species

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

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

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

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

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

Listed species

[1] and their critical habitats are managed by the Ecological Services Program of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries[2]).

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

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

The following species are potentially affected by activities in this location:

Birds

NAME	STATUS
Red Knot Calidris canutus rufa No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/1864	Threatened

Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

THERE ARE NO CRITICAL HABITATS AT THIS LOCATION.

Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act

[1] and the Bald and Golden Eagle Protection Act[2].

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

1. The Migratory Birds Treaty Act of 1918.
2. The Bald and Golden Eagle Protection Act of 1940.

Additional information can be found using the following links:

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

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

species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found below.

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

NAME	BREEDING SEASON (IF A BREEDING SEASON IS INDICATED FOR A BIRD ON YOUR LIST, THE BIRD MAY BREED IN YOUR PROJECT AREA SOMETIME WITHIN THE TIMEFRAME SPECIFIED, WHICH IS A VERY LIBERAL ESTIMATE OF THE DATES INSIDE WHICH THE BIRD BREEDS ACROSS ITS ENTIRE RANGE. "BREEDS ELSEWHERE" INDICATES THAT THE BIRD DOES NOT LIKELY BREED IN YOUR PROJECT AREA.)
American Oystercatcher *Haematopus palliatus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/8935	Breeds Apr 15 to Aug 31
Bald Eagle *Haliaeetus leucocephalus* This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1626	Breeds Oct 15 to Aug 31
Black Skimmer *Rynchops niger* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/5234	Breeds May 20 to Sep 15
Bobolink *Dolichonyx oryzivorus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 20 to Jul 31
Buff-breasted Sandpiper *Calidris subruficollis* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9488	Breeds elsewhere

Canada Warbler Cardellina canadensis This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 20 to Aug 10
Dunlin Calidris alpina arcticola This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA	Breeds elsewhere
King Rail Rallus elegans This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/8936	Breeds May 1 to Sep 5
Least Tern Sterna antillarum This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA	Breeds Apr 20 to Sep 10
Lesser Yellowlegs Tringa flavipes This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9679	Breeds elsewhere
Long-eared Owl asio otus This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/3631	Breeds elsewhere
Nelson's Sparrow Ammodramus nelsoni This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 15 to Sep 5
Prairie Warbler Dendroica discolor This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 1 to Jul 31
Purple Sandpiper Calidris maritima This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds elsewhere
Red-throated Loon Gavia stellata This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds elsewhere
Ruddy Turnstone Arenaria interpres morinella This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA	Breeds elsewhere

Rusty Blackbird Euphagus carolinus This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds elsewhere
Seaside Sparrow Ammodramus maritimus This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 10 to Aug 20
Semipalmated Sandpiper Calidris pusilla This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds elsewhere
Short-billed Dowitcher Limnodromus griseus This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9480	Breeds elsewhere
Snowy Owl Bubo scandiacus This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds elsewhere
Whimbrel Numenius phaeopus This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9483	Breeds elsewhere
Willet Tringa semipalmata This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Apr 20 to Aug 5
Wood Thrush Hylocichla mustelina This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 10 to Aug 31

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

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

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

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

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

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

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

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

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

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

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

What are the levels of concern for migratory birds?

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

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

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

Details about birds that are potentially affected by offshore projects

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

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

What if I have eagles on my list?

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

Proper Interpretation and Use of Your Migratory Bird Report

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

Facilities

National Wildlife Refuge lands

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

THERE ARE NO REFUGE LANDS AT THIS LOCATION.

Fish hatcheries

THERE ARE NO FISH HATCHERIES AT THIS LOCATION.

Wetlands in the National Wetlands Inventory

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

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

THERE ARE NO KNOWN WETLANDS AT THIS LOCATION.

Data limitations

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

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

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

Data exclusions

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

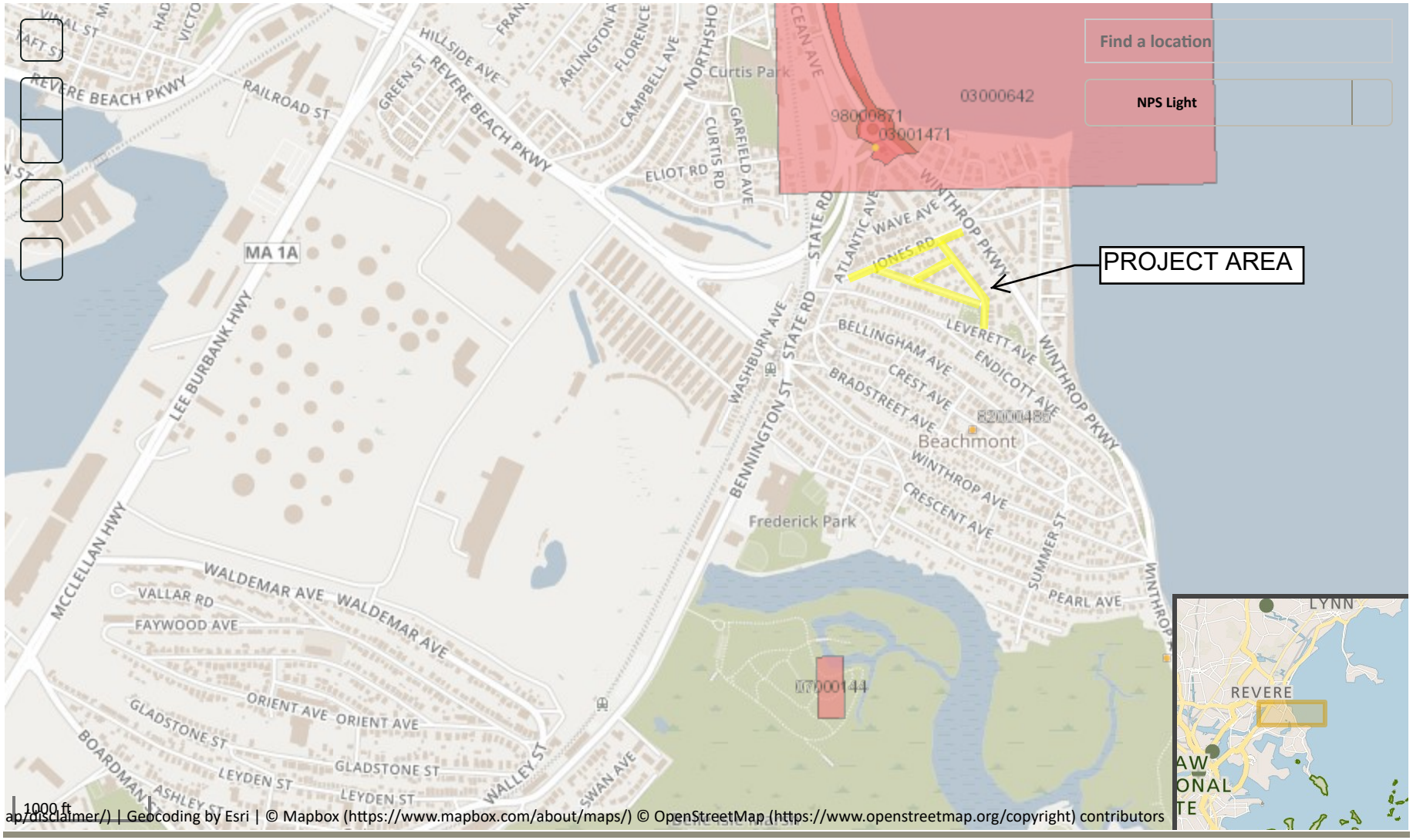
Data precautions

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

National Register of Historic Places

National Park Service
U.S. Department of the Interior

Public, non-restricted data depicting National Register spatial data processed by the Cultural Resources …



Massachusetts Cultural Resource Information System

MACRIS

MACRIS Search Results

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

Inv. No.	Property Name	Street	Town	Year
REV.D	Metropolitan Park System of Greater Boston		Revere	
REV.E	Winthrop Parkway		Revere	
REV.G	Our Lady of Lourdes Roman Catholic Church Complex		Revere	
REV.6	Ronan, Mary T. School	154 Bradstreet Ave	Revere	1896
REV.1	Howe, Julia Ward School	Crescent Ave	Revere	1893
REV.958	Our Lady of Lourdes Garden and Shrine	Endicott Ave	Revere	c 1960
REV.83	Our Lady of Lourdes Roman Catholic Church Rectory	1 Endicott Ave	Revere	c 1910
REV.84	Our Lady of Lourdes Roman Catholic Rectory Garage	1 Endicott Ave	Revere	c 1950
REV.7	Our Lady of Lourdes Roman Catholic Church	2 Endicott Ave	Revere	1902
REV.2	Trinity Congregational Church	887 Winthrop Ave	Revere	1882
REV.3	Saint Paul's Episcopal Church	890 Winthrop Ave	Revere	1887
REV.4	Winthrop Avenue Fire Station	931 Winthrop Ave	Revere	c 1925
REV.948	Winthrop Parkway - Segment One	Winthrop Pkwy	Revere	c 1909
REV.949	Winthrop Parkway - Segment Two	Winthrop Pkwy	Revere	c 1909
REV.950	Winthrop Parkway Tide Gates	Winthrop Pkwy	Revere	c 1946

APPENDIX D

LABORATORY ANALYTICAL REPORT

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Nashville
2960 Foster Creighton Drive
Nashville, TN 37204
Tel: (615)726-0177

TestAmerica Job ID: 490-148861-1
Client Project/Site: L1810053

For:
Alpha Analytical Inc
145 Flanders Road
Westborough, Massachusetts 01581-1019

Attn: Ashaley Kane

Authorized for release by:
3/30/2018 6:14:43 PM

Ken Hayes, Project Manager II
(615)301-5035
ken.hayes@testamericainc.com

Table of Contents

Sample Summary

Client: Alpha Analytical Inc
Project/Site: L1810053

TestAmerica Job ID: 490-148861-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
490-148861-1	B-4C-MW	Water	03/23/18 09:25	03/27/18 10:25
490-148861-2	MW-PUMP	Water	03/23/18 10:55	03/27/18 10:25

Case Narrative

Client: Alpha Analytical Inc
Project/Site: L1810053

TestAmerica Job ID: 490-148861-1

Job ID: 490-148861-1

Laboratory: TestAmerica Nashville

Narrative

Job Narrative
490-148861-1

Comments
No additional comments.

Receipt
The samples were received on 3/27/2018 10:25 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 1.1° C.

GC Semi VOA
Method 1671A: The matrix spike duplicate (MSD) recoveries for Ethanol for analytical batch 490-504533 were outside control limits. Sample matrix interference is suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Definitions/Glossary

Client: Alpha Analytical Inc
Project/Site: L1810053

TestAmerica Job ID: 490-148861-1

Qualifiers

GC VOA

Qualifier	Qualifier Description
F1	MS and/or MSD Recovery is outside acceptance limits.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Client Sample Results

Client: Alpha Analytical Inc
Project/Site: L1810053

TestAmerica Job ID: 490-148861-1

Client Sample ID: B-4C-MW
Date Collected: 03/23/18 09:25
Date Received: 03/27/18 10:25

Lab Sample ID: 490-148861-1
Matrix: Water

Method: 1671A - Ethanol (GC/FID)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethanol	ND	F1	2000	500	ug/L			03/28/18 15:43	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Isopropyl acetate (Surr)	*98*		*70 - 130*		*03/28/18 15:43*	*1*

Client Sample Results

Client: Alpha Analytical Inc
Project/Site: L1810053

TestAmerica Job ID: 490-148861-1

Client Sample ID: MW-PUMP

Date Collected: 03/23/18 10:55
Date Received: 03/27/18 10:25

Lab Sample ID: 490-148861-2

Matrix: Water

Method: 1671A - Ethanol (GC/FID)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethanol	ND		2000	500	ug/L			03/28/18 16:01	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Isopropyl acetate (Surr)	*94*		*70 - 130*		*03/28/18 16:01*	*1*

QC Sample Results

Client: Alpha Analytical Inc
Project/Site: L1810053

TestAmerica Job ID: 490-148861-1

Method: 1671A - Ethanol (GC/FID)

Lab Sample ID: MB 490-504533/10
Matrix: Water
Analysis Batch: 504533

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethanol	ND		2000	500	ug/L			03/28/18 15:31	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Isopropyl acetate (Surr)	*101*		*70 - 130*		*03/28/18 15:31*	*1*

Lab Sample ID: LCS 490-504533/11
Matrix: Water
Analysis Batch: 504533

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Ethanol			50200	62190		ug/L		124	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Isopropyl acetate (Surr)	*105*		*70 - 130*

Lab Sample ID: 490-148861-1 MS
Matrix: Water
Analysis Batch: 504533

Client Sample ID: B-4C-MW
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Ethanol	ND	F1	50200	65230		ug/L		130	70 - 130		

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
Isopropyl acetate (Surr)	*100*		*70 - 130*

Lab Sample ID: 490-148861-1 MSD
Matrix: Water
Analysis Batch: 504533

Client Sample ID: B-4C-MW
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ethanol	ND	F1	50200	69400	F1	ug/L		138	70 - 130	6	20

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
Isopropyl acetate (Surr)	*100*		*70 - 130*

QC Association Summary

Client: Alpha Analytical Inc
Project/Site: L1810053

TestAmerica Job ID: 490-148861-1

GC VOA

Analysis Batch: 504533

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-148861-1	B-4C-MW	Total/NA	Water	1671A	
490-148861-2	MW-PUMP	Total/NA	Water	1671A	
MB 490-504533/10	Method Blank	Total/NA	Water	1671A	
LCS 490-504533/11	Lab Control Sample	Total/NA	Water	1671A	
490-148861-1 MS	B-4C-MW	Total/NA	Water	1671A	
490-148861-1 MSD	B-4C-MW	Total/NA	Water	1671A	

Lab Chronicle

Client: Alpha Analytical Inc
Project/Site: L1810053

TestAmerica Job ID: 490-148861-1

Client Sample ID: B-4C-MW

Lab Sample ID: 490-148861-1

Date Collected: 03/23/18 09:25

Matrix: Water

Date Received: 03/27/18 10:25

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	1671A		1			504533	03/28/18 15:43	JML	TAL NSH

Client Sample ID: MW-PUMP

Lab Sample ID: 490-148861-2

Date Collected: 03/23/18 10:55

Matrix: Water

Date Received: 03/27/18 10:25

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	1671A		1			504533	03/28/18 16:01	JML	TAL NSH

Laboratory References:

TAL NSH = TestAmerica Nashville, 2960 Foster Creighton Drive, Nashville, TN 37204, TEL (615)726-0177

Method Summary

Client: Alpha Analytical Inc
Project/Site: L1810053

TestAmerica Job ID: 490-148861-1

Method	Method Description	Protocol	Laboratory
1671A	Ethanol (GC/FID)	EPA	TAL NSH

Protocol References:

EPA = US Environmental Protection Agency

Laboratory References:

TAL NSH = TestAmerica Nashville, 2960 Foster Creighton Drive, Nashville, TN 37204, TEL (615)726-0177

Accreditation/Certification Summary

Client: Alpha Analytical Inc
Project/Site: L1810053

TestAmerica Job ID: 490-148861-1

Laboratory: TestAmerica Nashville

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	EPA Region	Identification Number	Expiration Date
California	State Program	9	2938	10-31-18

The following analytes are included in this report, but accreditation/certification is not offered by the governing authority:

Analysis Method	Prep Method	Matrix	Analyte
1671A		Water	Ethanol

Maine	State Program	1	TN00032	11-03-19

The following analytes are included in this report, but accreditation/certification is not offered by the governing authority:

Analysis Method	Prep Method	Matrix	Analyte
1671A		Water	Ethanol

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
Nashville, TN

COOLER RECEIPT FORM

490-148861 Chain of Custody

Cooler Received/Opened On 03-27-2018 @ 1025

Time Samples Removed From Cooler 1505 Time Samples Placed In Storage 1602 (2 Hour Window)

1. Tracking # 1Z E30654 0192 3000 4 (last 4 digits, FedEx) Courier: UPS Next Day

IR Gun ID 31470366 pH Strip Lot N/A Chlorine Strip Lot N/A

2. Temperature of rep. sample or temp blank when opened: 1.1 *Degrees Celsius*

3. If Item #2 temperature is 0°C or less, was the representative sample or temp blank frozen? YES NO...NA

4. Were custody seals on outside of cooler? YES...NO...NA

If yes, how many and where:

5. Were the seals intact, signed, and dated correctly? YES...NO...NA

6. Were custody papers inside cooler? YES...NO...NA

I certify that I opened the cooler and answered questions 1-6 (intial) EMA

7. Were custody seals on containers: YES NO and Intact YES...NO...NA

Were these signed and dated correctly? YES...NO...NA

8. Packing mat'l used? Bubblewrap Plastic bag Peanuts Vermiculite Foam Insert Paper Other None

9. Cooling process: Ice Ice-pack Ice (direct contact) Dry ice Other None

10. Did all containers arrive in good condition (unbroken)? YES...NO...NA

11. Were all container labels complete (#, date, signed, pres., etc)? YES...NO...NA

12. Did all container labels and tags agree with custody papers? YES...NO...NA

13a. Were VOA vials received? YES...NO...NA

b. Was there any observable headspace present in any VOA vial? YES...NO...NA

● ⬅ Larger than this.

14. Was there a Trip Blank in this cooler? YES...NO...NA If multiple coolers, sequence #

I certify that I unloaded the cooler and answered questions 7-14 (intial)

15a. On pres'd bottles, did pH test strips suggest preservation reached the correct pH level? YES...NO...NA

b. Did the bottle labels indicate that the correct preservatives were used YES...NO...NA

16. Was residual chlorine present? YES...NO...NA

I certify that I checked for chlorine and pH as per SOP and answered questions 15-16 (intial)

17. Were custody papers properly filled out (ink, signed, etc)? YES...NO...NA

18. Did you sign the custody papers in the appropriate place? YES...NO...NA

19. Were correct containers used for the analysis requested? YES...NO...NA

20. Was sufficient amount of sample sent in each container? YES...NO...NA

I certify that I entered this project into LIMS and answered questions 17-20 (intial)

I certify that I attached a label with the unique LIMS number to each container (intial)

21. Were there Non-Conformance issues at login? YES...NO Was a NCM generated? YES...NO...#

BIS = Broken in shipment
Cooler Receipt Form.doc

LF-1
End of Form

Revised 8/23/17

ALPHA ANALYTICAL
World Class Chemistry

Subcontract Chain of Custody

Test America (Nashville)
2960 Foster Creighton Drive
Nashville, TN 37204

Alpha Job Number
L1810053

Client Information	Project Information	Regulatory Requirements/Report Limits
Client: Alpha Analytical Labs Address: Eight Walkup Drive Westborough, MA 01581-1019 Phone: 508-439-5132 Email: akane@alphalab.com	Project Location: MA Project Manager: Ashaley Kane **Turnaround & Deliverables Information** Due Date: 04/10/18 Deliverables:	State/Federal Program: Regulatory Criteria:

Project Specific Requirements and/or Report Requirements

Reference following Alpha Job Number on final report/deliverables: L1810053

Report to include Method Blank, LCS/LCSD:

Additional Comments: Send all results/reports to subreports@alphalab.com Report Ethanol only, method 1666.

Lab ID	Client ID	Collection Date/Time	Sample Matrix	Analysis	Batch QC
	B-4C-MW	03-23-18 09:25	WATER	Ethanol by EPA 1671 Revision A	
	MW-PUMP	03-23-18 10:55	WATER	Ethanol by EPA 1671 Revision A	

Loc: 490
148861

Relinquished By:	Date/Time:	Received By:	Date/Time:
AAL	3/26/18	TA-NAS	3-27-18 1025

Form No: AL_subcoc

1-1

APPENDIX E

BEST MANAGEMENT PLAN

A Notice of Intent for a Remediation General Permit (RGP) under the National Pollutant Discharge Elimination System (NPDES) has been submitted to the U.S. Environmental Protection Agency (EPA) in anticipation of temporary construction dewatering that will occur during the Sales Creek Project in Revere, Massachusetts. This Best Management Practices Plan (BMPP) has been prepared as an Appendix to the RGP and will be posted at the site during the time period that temporary construction dewatering is occurring at the site.

Water Treatment and Management

During construction of the proposed building foundation, dewatering effluent is anticipated to be pumped from localized sumps and trenches within the excavation directly into a settling tank. The effluent will then flow through the necessary treatment systems and discharge through felt sediment bags into an on-Site drainage basin. Dewatering effluent treatment will consist of a settling tank and felt sediment bags to remove suspended soil particulates. If further treatment is necessary, effluent discharge will be passed through ion resin media vessels prior to on-Site discharge to lower concentrations of metals below applicable TBELs. pH adjustment will be conducted, if necessary, through the addition of hydrochloric acid, caustic soda, or carbon dioxide.

Discharge Monitoring and Compliance

Sampling and testing will be conducted at the influent to the system and the treated effluent as required by the RGP. During the first week of discharge, the operator must sample the untreated influent and treated effluent two times: one (1) sample of untreated influent and one (1) sample of treated effluent be collected on the first day of discharge, and one (1) sample of untreated influent and one (1) sample of treated effluent must be collected on one additional non-consecutive day within the first week of discharge. Samples must be analyzed in accordance with 40 CFR §136 unless otherwise specified by the RGP, with a maximum 5-day turnaround time and results must be reviewed no more than 48 hours from receipt of the results of each sampling event. After the first week, samples may be analyzed with up to a ten (10)-day turnaround time and results must be reviewed no more than 72 hours from receipt of the results. If the treatment system is operating as designed and achieving the effluent limitations outlined in the RGP, on-going sampling shall be conducted weekly for three (3) additional weeks beginning no earlier than 24 hours following initial sampling, and monthly as described below. Any adjustments/reductions in monitoring frequency must be approved by EPA in writing.

In accordance with Part 4.1 of the RGP, the operator will perform routine monthly monitoring for both influent and effluent beginning no more than 30 days following the completion of the sampling requirements for new discharges or discharges that have been interrupted. The routine monthly monitoring is to be conducted through the end of the scheduled discharge. The routine monthly monitoring must continue for five (5) consecutive months prior to submission of any request for modification of monitoring frequency.

Dewatering activity for the Site is classified as Category III-G: Sites with Known Contamination. Monitoring shall include analysis of influent and effluent for contaminates specified by the EPA.

Monitoring will include checking the condition of the treatment system, assessing the need for treatment system adjustments based on monitoring data, observing, and recording daily flow rates and discharge

quantities, and verifying the flow path of the discharged effluent. The total monthly flow will be monitored by checking and documenting the flow through the flow meter to be installed on the system. Flow will be maintained below the "system design flow" by regularly monitoring flow and adjusting the amount of construction dewatering as needed. Monthly monitoring reports will be compiled and maintained at the site.

System Maintenance

Schedule regular maintenance and periodic cleaning of the treatment system will be conducted to verify proper operation and shall be conducted in accordance with the project earthwork specifications. Regular maintenance will include checking the condition of the treatment system equipment such as the settling tanks, bag filters, hoses, pumps, and flow meters. Equipment will be monitored daily for potential issues and unscheduled maintenance requirements.

Employees who have direct or indirect responsibility for ensuring compliance with the RGP will be trained by the Contractor.

Miscellaneous Items

It is anticipated that the erosion control measures, and the nature of the site will minimize potential runoff to or from the site. The project specifications also include requirements for erosion control. Site security for the treatment system will be addressed within the overall site security plan.

No adverse effects on designated uses of surrounding surface water bodies is anticipated. The nearest surface water body is the Atlantic Ocean. Dewatering effluent will be pumped into a settling tank. Water within the settling tank will pumped through felt sediment bags and, if necessary, ion exchange chambers prior to discharge into the storm drains.

Management of Treatment System Materials

Dewatering effluent will be pumped directly into the treatment system from the excavation with use of hoses and localized sumps to minimize handling. The Contractor will establish staging areas for equipment or materials storage that may be possible sources of pollution away from any dewatering activities, to the extent practicable.

Sediment from the tank used in the treatment system will be characterized and removed from the Site to an appropriate receiving facility, in accordance with applicable laws and regulations. Bags will be replaced/disposed of as necessary.

PHOENIX
Environmental Laboratories, Inc.

Wednesday, January 15, 2020

Attn:
Terra Environmental LLC
P.O. Box 473
Reading, MA 01867

Project ID: **BEACH MONT REVERE**
SDG ID: **GCE70270**
Sample ID#s: CE70270 - CE70271

This laboratory is in compliance with the NELAC requirements of procedures used except where indicated.

This report contains results for the parameters tested, under the sampling conditions described on the Chain Of Custody, as received by the laboratory. This report is incomplete unless all pages indicated in the pagination at the bottom of the page are included.

A scanned version of the COC form accompanies the analytical report and is an exact duplicate of the original.

Enclosed are revised Analysis Report pages. Please replace and discard the original pages. If you are the client above and have any questions concerning this testing, please do not hesitate to contact Phoenix Client Services at ext.200. The contents of this report cannot be discussed with anyone other than the client listed above without their written consent.

Sincerely yours,

Phyllis Shiller
Laboratory Director

NELAC - #NY11301
CT Lab Registration #PH-0618
MA Lab Registration #M-CT007
ME Lab Registration #CT-007
NH Lab Registration #213693-A,B
NJ Lab Registration #CT-003
NY Lab Registration #11301
PA Lab Registration #68-03530
RI Lab Registration #63
UT Lab Registration #CT00007
VT Lab Registration #VT11301

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

NY # 11301

SDG Comments

January 15, 2020

SDG I.D.: GCE70270

8260 Analysis:
1,2-Dibromoethane doesn't meet GW-1 criteria, this compound is analyzed by GC/FID to achieve this criteria.

8260 Analysis:
1,4-Dioxane doesn't meet GW-1 criteria, this compound is analyzed by 8270SIM to achieve this criteria.
Sample CE70270 was received past hold time for Chromium, Hexavalent (SM3500CRB).

Version 2: Per client request Hardness was added on.

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

Sample Id Cross Reference

January 15, 2020

SDG I.D.: GCE70270

Project ID: BEACH MONT REVERE

Client Id	Lab Id	Matrix
P-4	CE70270	GROUND WATER
TRIP BLANK	CE70271	GROUND WATER

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

Analysis Report

January 15, 2020

FOR: Attn:
Terra Environmental LLC
P.O. Box 473
Reading, MA 01867

Sample Information		Custody Information		Date	Time
Matrix:	GROUND WATER	Collected by:		12/02/19	12:00
Location Code:	TERRA-ENV	Received by:	SW	12/03/19	14:32
Rush Request:	Standard	Analyzed by:	see "By" below		
P.O.#:	19-125				

Laboratory Data

SDG ID: GCE70270
Phoenix ID: CE70270

Project ID: BEACH MONT REVERE
Client ID: P-4

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
Silver	< 0.001	0.001	mg/L	1	12/04/19	TH	SW6010D
Arsenic	< 0.004	0.004	mg/L	1	12/04/19	TH	SW6010D
Cadmium	< 0.001	0.001	mg/L	1	12/04/19	TH	SW6010D
Chromium	0.018	0.001	mg/L	1	12/04/19	TH	SW6010D
Copper	0.005	0.005	mg/L	1	12/04/19	TH	SW6010D
Iron	0.778	0.010	mg/L	1	12/04/19	TH	SW6010D
Hardness (CaCO3)	338	0.1	mg/L	1	01/14/20		E200.7
Mercury	< 0.0002	0.0002	mg/L	1	12/04/19	RS	SW7470A
Nickel	0.001	0.001	mg/L	1	12/04/19	TH	SW6010D
Lead	< 0.002	0.002	mg/L	1	12/04/19	TH	SW6010D
Antimony	< 0.005	0.005	mg/L	1	12/04/19	TH	SW6010D
Selenium	< 0.010	0.010	mg/L	1	12/04/19	TH	SW6010D
Zinc	0.005	0.004	mg/L	1	12/04/19	TH	SW6010D
Chloride	1690	60.0	mg/L	20	12/05/19	TB	SM4500CLE-11
Chlorine Residual	< 0.02	0.02	mg/L	1	12/03/19 18:22	O	SM4500Cl-G-00
Chromium, Hexavalent	< 0.01	0.01	mg/L	1	12/03/19 18:03	O	SM3500CRB-11
Ammonia as Nitrogen	4.65	0.25	mg/L	5	12/04/19	KDB	E350.1
Phenolics	< 0.075	0.075	mg/L	5	12/09/19	MSF	E420.4
Total Cyanide	0.043	0.010	mg/L	1	12/05/19	O/GD	SW9010C/SW9012B
O&G, Non-polar Material	< 1.4	1.4	mg/L	1	12/06/19	MSF	E1664A
Total Suspended Solids	20	3.3	mg/L	0.7	12/04/19	NLM	SM 2540D-11
Mercury Digestion	Completed				12/04/19	Q/LS	SW7470A
PCB Extraction (LDL)	Completed				12/03/19	AT/AT	SW3510C
Semi-Volatile Extraction	Completed				12/03/19	P/AK	SW3520C
Total Metals Digestion	Completed				12/03/19	AG	
Polychlorinated Biphenyls							
PCB-1016	ND	0.059	ug/L	1	12/04/19	SC	SW8082A

Ver 2

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
PCB-1221	ND	0.059	ug/L	1	12/04/19	SC	SW8082A
PCB-1232	ND	0.059	ug/L	1	12/04/19	SC	SW8082A
PCB-1242	ND	0.059	ug/L	1	12/04/19	SC	SW8082A
PCB-1248	ND	0.059	ug/L	1	12/04/19	SC	SW8082A
PCB-1254	ND	0.059	ug/L	1	12/04/19	SC	SW8082A
PCB-1260	ND	0.059	ug/L	1	12/04/19	SC	SW8082A
PCB-1262	ND	0.059	ug/L	1	12/04/19	SC	SW8082A
PCB-1268	ND	0.059	ug/L	1	12/04/19	SC	SW8082A
QA/QC Surrogates							
% DCBP (Surrogate Rec)	52		%	1	12/04/19	SC	30 - 150 %
% DCBP (Surrogate Rec) (Confirmation)	49		%	1	12/04/19	SC	30 - 150 %
% TCMX (Surrogate Rec)	69		%	1	12/04/19	SC	30 - 150 %
% TCMX (Surrogate Rec) (Confirmation)	71		%	1	12/04/19	SC	30 - 150 %
1,2-Dibromoethane (EDB)	ND	0.02	ug/L	1	12/07/19	CG	SW8011
Volatiles							
1,1,1,2-Tetrachloroethane	ND	1.0	ug/L	1	12/04/19	MH	SW8260C
1,1,1-Trichloroethane	ND	1.0	ug/L	1	12/04/19	MH	SW8260C
1,1,2,2-Tetrachloroethane	ND	0.50	ug/L	1	12/04/19	MH	SW8260C
1,1,2-Trichloroethane	ND	1.0	ug/L	1	12/04/19	MH	SW8260C
1,1-Dichloroethane	ND	1.0	ug/L	1	12/04/19	MH	SW8260C
1,1-Dichloroethene	ND	1.0	ug/L	1	12/04/19	MH	SW8260C
1,1-Dichloropropene	ND	1.0	ug/L	1	12/04/19	MH	SW8260C
1,2,3-Trichlorobenzene	ND	1.0	ug/L	1	12/04/19	MH	SW8260C
1,2,3-Trichloropropane	ND	1.0	ug/L	1	12/04/19	MH	SW8260C
1,2,4-Trichlorobenzene	ND	1.0	ug/L	1	12/04/19	MH	SW8260C
1,2,4-Trimethylbenzene	ND	1.0	ug/L	1	12/04/19	MH	SW8260C
1,2-Dibromo-3-chloropropane	ND	1.0	ug/L	1	12/04/19	MH	SW8260C
1,2-Dibromoethane	ND	0.50	ug/L	1	12/04/19	MH	SW8260C
1,2-Dichlorobenzene	ND	1.0	ug/L	1	12/04/19	MH	SW8260C
1,2-Dichloroethane	ND	0.60	ug/L	1	12/04/19	MH	SW8260C
1,2-Dichloropropane	ND	1.0	ug/L	1	12/04/19	MH	SW8260C
1,3,5-Trimethylbenzene	ND	1.0	ug/L	1	12/04/19	MH	SW8260C
1,3-Dichlorobenzene	ND	1.0	ug/L	1	12/04/19	MH	SW8260C
1,3-Dichloropropane	ND	1.0	ug/L	1	12/04/19	MH	SW8260C
1,4-Dichlorobenzene	ND	1.0	ug/L	1	12/04/19	MH	SW8260C
2,2-Dichloropropane	ND	1.0	ug/L	1	12/04/19	MH	SW8260C
2-Chlorotoluene	ND	1.0	ug/L	1	12/04/19	MH	SW8260C
2-Hexanone	ND	5.0	ug/L	1	12/04/19	MH	SW8260C
2-Isopropyltoluene	ND	1.0	ug/L	1	12/04/19	MH	SW8260C
4-Chlorotoluene	ND	1.0	ug/L	1	12/04/19	MH	SW8260C
4-Methyl-2-pentanone	ND	5.0	ug/L	1	12/04/19	MH	SW8260C
Acetone	ND	25	ug/L	1	12/04/19	MH	SW8260C
Acrylonitrile	ND	1.0	ug/L	1	12/04/19	MH	SW8260C
Benzene	ND	0.70	ug/L	1	12/04/19	MH	SW8260C
Bromobenzene	ND	1.0	ug/L	1	12/04/19	MH	SW8260C
Bromochloromethane	ND	1.0	ug/L	1	12/04/19	MH	SW8260C
Bromodichloromethane	ND	0.50	ug/L	1	12/04/19	MH	SW8260C
Bromoform	ND	1.0	ug/L	1	12/04/19	MH	SW8260C

Project ID: BEACH MONT REVERE
Client ID: P-4

Phoenix I.D.: CE70270

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
Bromomethane	ND	1.0	ug/L	1	12/04/19	MH	SW8260C
Carbon Disulfide	ND	5.0	ug/L	1	12/04/19	MH	SW8260C
Carbon tetrachloride	ND	1.0	ug/L	1	12/04/19	MH	SW8260C
Chlorobenzene	ND	1.0	ug/L	1	12/04/19	MH	SW8260C
Chloroethane	ND	1.0	ug/L	1	12/04/19	MH	SW8260C
Chloroform	ND	1.0	ug/L	1	12/04/19	MH	SW8260C
Chloromethane	ND	1.0	ug/L	1	12/04/19	MH	SW8260C
cis-1,2-Dichloroethene	ND	1.0	ug/L	1	12/04/19	MH	SW8260C
cis-1,3-Dichloropropene	ND	0.40	ug/L	1	12/04/19	MH	SW8260C
Dibromochloromethane	ND	0.50	ug/L	1	12/04/19	MH	SW8260C
Dibromomethane	ND	1.0	ug/L	1	12/04/19	MH	SW8260C
Dichlorodifluoromethane	ND	1.0	ug/L	1	12/04/19	MH	SW8260C
Ethylbenzene	ND	1.0	ug/L	1	12/04/19	MH	SW8260C
Hexachlorobutadiene	ND	0.40	ug/L	1	12/04/19	MH	SW8260C
Isopropylbenzene	ND	1.0	ug/L	1	12/04/19	MH	SW8260C
m&p-Xylene	ND	1.0	ug/L	1	12/04/19	MH	SW8260C
Methyl ethyl ketone	ND	5.0	ug/L	1	12/04/19	MH	SW8260C
Methyl t-butyl ether (MTBE)	ND	1.0	ug/L	1	12/04/19	MH	SW8260C
Methylene chloride	ND	1.0	ug/L	1	12/04/19	MH	SW8260C
Naphthalene	ND	1.0	ug/L	1	12/04/19	MH	SW8260C
n-Butylbenzene	ND	1.0	ug/L	1	12/04/19	MH	SW8260C
n-Propylbenzene	ND	1.0	ug/L	1	12/04/19	MH	SW8260C
o-Xylene	ND	1.0	ug/L	1	12/04/19	MH	SW8260C
p-Isopropyltoluene	ND	1.0	ug/L	1	12/04/19	MH	SW8260C
sec-Butylbenzene	ND	1.0	ug/L	1	12/04/19	MH	SW8260C
Styrene	ND	1.0	ug/L	1	12/04/19	MH	SW8260C
tert-Butylbenzene	ND	1.0	ug/L	1	12/04/19	MH	SW8260C
Tetrachloroethene	ND	1.0	ug/L	1	12/04/19	MH	SW8260C
Tetrahydrofuran (THF)	ND	2.5	ug/L	1	12/04/19	MH	SW8260C
Toluene	ND	1.0	ug/L	1	12/04/19	MH	SW8260C
Total Xylenes	ND	1.0	ug/L	1	12/04/19	MH	SW8260C
trans-1,2-Dichloroethene	ND	1.0	ug/L	1	12/04/19	MH	SW8260C
trans-1,3-Dichloropropene	ND	0.40	ug/L	1	12/04/19	MH	SW8260C
trans-1,4-dichloro-2-butene	ND	5.0	ug/L	1	12/04/19	MH	SW8260C
Trichloroethene	ND	1.0	ug/L	1	12/04/19	MH	SW8260C
Trichlorofluoromethane	ND	1.0	ug/L	1	12/04/19	MH	SW8260C
Trichlorotrifluoroethane	ND	1.0	ug/L	1	12/04/19	MH	SW8260C
Vinyl chloride	ND	1.0	ug/L	1	12/04/19	MH	SW8260C
QA/QC Surrogates							
% 1,2-dichlorobenzene-d4	93		%	1	12/04/19	MH	70 - 130 %
% Bromofluorobenzene	97		%	1	12/04/19	MH	70 - 130 %
% Dibromofluoromethane	95		%	1	12/04/19	MH	70 - 130 %
% Toluene-d8	95		%	1	12/04/19	MH	70 - 130 %

Oxygenates & Dioxane

1,4-Dioxane	ND	50	ug/L	1	12/04/19	MH	SW8260C (OXY)
Diethyl ether	ND	1.0	ug/L	1	12/04/19	MH	SW8260C (OXY)
Di-isopropyl ether	ND	1.0	ug/L	1	12/04/19	MH	SW8260C (OXY)
Ethyl tert-butyl ether	ND	1.0	ug/L	1	12/04/19	MH	SW8260C (OXY)
tert-amyl methyl ether	ND	1.0	ug/L	1	12/04/19	MH	SW8260C (OXY)

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
Ethanol	ND	400	ug/L	1	12/04/19	MH	SW8260C
Tert-amyl-methyl-ether	ND	1.0	ug/L	1	12/04/19	MH	SW8260C
Tert-butyl alcohol	ND	50	ug/L	1	12/04/19	MH	SW8260C
Semivolatiles							
1,2,4,5-Tetrachlorobenzene	ND	3.3	ug/L	1	12/06/19	WB	SW8270D
1,2,4-Trichlorobenzene	ND	4.7	ug/L	1	12/06/19	WB	SW8270D
1,2-Dichlorobenzene	ND	2.4	ug/L	1	12/06/19	WB	SW8270D
1,2-Diphenylhydrazine	ND	4.7	ug/L	1	12/06/19	WB	SW8270D
1,3-Dichlorobenzene	ND	2.4	ug/L	1	12/06/19	WB	SW8270D
1,4-Dichlorobenzene	ND	2.4	ug/L	1	12/06/19	WB	SW8270D
2,4,5-Trichlorophenol	ND	0.94	ug/L	1	12/06/19	WB	SW8270D
2,4,6-Trichlorophenol	ND	0.94	ug/L	1	12/06/19	WB	SW8270D
2,4-Dichlorophenol	ND	0.94	ug/L	1	12/06/19	WB	SW8270D
2,4-Dimethylphenol	ND	0.94	ug/L	1	12/06/19	WB	SW8270D
2,4-Dinitrophenol	ND	0.94	ug/L	1	12/06/19	WB	SW8270D
2,4-Dinitrotoluene	ND	4.7	ug/L	1	12/06/19	WB	SW8270D
2,6-Dinitrotoluene	ND	4.7	ug/L	1	12/06/19	WB	SW8270D
2-Chloronaphthalene	ND	4.7	ug/L	1	12/06/19	WB	SW8270D
2-Chlorophenol	ND	0.94	ug/L	1	12/06/19	WB	SW8270D
2-Methylphenol (o-cresol)	ND	0.94	ug/L	1	12/06/19	WB	SW8270D
2-Nitroaniline	ND	4.7	ug/L	1	12/06/19	WB	SW8270D
2-Nitrophenol	ND	0.94	ug/L	1	12/06/19	WB	SW8270D
3&4-Methylphenol (m&p-cresol)	ND	9.4	ug/L	1	12/06/19	WB	SW8270D
3,3'-Dichlorobenzidine	ND	4.7	ug/L	1	12/06/19	WB	SW8270D
3-Nitroaniline	ND	4.7	ug/L	1	12/06/19	WB	SW8270D
4,6-Dinitro-2-methylphenol	ND	0.94	ug/L	1	12/06/19	WB	SW8270D
4-Bromophenyl phenyl ether	ND	4.7	ug/L	1	12/06/19	WB	SW8270D
4-Chloro-3-methylphenol	ND	0.94	ug/L	1	12/06/19	WB	SW8270D
4-Chloroaniline	ND	4.7	ug/L	1	12/06/19	WB	SW8270D
4-Chlorophenyl phenyl ether	ND	0.94	ug/L	1	12/06/19	WB	SW8270D
4-Nitroaniline	ND	4.7	ug/L	1	12/06/19	WB	SW8270D
4-Nitrophenol	ND	0.94	ug/L	1	12/06/19	WB	SW8270D
Acetophenone	ND	4.7	ug/L	1	12/06/19	WB	SW8270D
Aniline	ND	4.7	ug/L	1	12/06/19	WB	SW8270D
Benzidine	ND	4.7	ug/L	1	12/06/19	WB	SW8270D
Benzoic acid	ND	47	ug/L	1	12/06/19	WB	SW8270D
Benzyl butyl phthalate	ND	4.7	ug/L	1	12/06/19	WB	SW8270D
Bis(2-chloroethoxy)methane	ND	4.7	ug/L	1	12/06/19	WB	SW8270D
Bis(2-chloroethyl)ether	ND	0.94	ug/L	1	12/06/19	WB	SW8270D
Bis(2-chloroisopropyl)ether	ND	4.7	ug/L	1	12/06/19	WB	SW8270D
Bis(2-ethylhexyl)phthalate	ND	0.94	ug/L	1	12/06/19	WB	SW8270D
Carbazole	ND	4.7	ug/L	1	12/06/19	WB	SW8270D
Dibenzofuran	ND	4.7	ug/L	1	12/06/19	WB	SW8270D
Diethyl phthalate	ND	4.7	ug/L	1	12/06/19	WB	SW8270D
Dimethylphthalate	ND	4.7	ug/L	1	12/06/19	WB	SW8270D
Di-n-butylphthalate	ND	4.7	ug/L	1	12/06/19	WB	SW8270D
Di-n-octylphthalate	ND	4.7	ug/L	1	12/06/19	WB	SW8270D
Hexachloroethane	ND	0.94	ug/L	1	12/06/19	WB	SW8270D

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
Isophorone	ND	4.7	ug/L	1	12/06/19	WB	SW8270D
N-Nitrosodi-n-propylamine	ND	4.7	ug/L	1	12/06/19	WB	SW8270D
N-Nitrosodiphenylamine	ND	4.7	ug/L	1	12/06/19	WB	SW8270D
Pentachloronitrobenzene	ND	2.4	ug/L	1	12/06/19	WB	SW8270D
Phenol	ND	0.94	ug/L	1	12/06/19	WB	SW8270D
QA/QC Surrogates							
% 2,4,6-Tribromophenol	81		%	1	12/06/19	WB	15 - 110 %
% 2-Fluorobiphenyl	60		%	1	12/06/19	WB	30 - 130 %
% 2-Fluorophenol	37		%	1	12/06/19	WB	15 - 110 %
% Nitrobenzene-d5	78		%	1	12/06/19	WB	30 - 130 %
% Phenol-d5	52		%	1	12/06/19	WB	15 - 110 %
% Terphenyl-d14	56		%	1	12/06/19	WB	30 - 130 %
Semivolatiles (SIM)							
2-Methylnaphthalene	ND	0.47	ug/L	1	12/05/19	WB	SW8270D (SIM)
Acenaphthene	ND	0.47	ug/L	1	12/05/19	WB	SW8270D (SIM)
Acenaphthylene	ND	0.09	ug/L	1	12/05/19	WB	SW8270D (SIM)
Anthracene	ND	0.09	ug/L	1	12/05/19	WB	SW8270D (SIM)
Benz(a)anthracene	ND	0.09	ug/L	1	12/05/19	WB	SW8270D (SIM)
Benzo(a)pyrene	ND	0.19	ug/L	1	12/05/19	WB	SW8270D (SIM)
Benzo(b)fluoranthene	ND	0.09	ug/L	1	12/05/19	WB	SW8270D (SIM)
Benzo(ghi)perylene	ND	0.02	ug/L	1	12/05/19	WB	SW8270D (SIM)
Benzo(k)fluoranthene	ND	0.09	ug/L	1	12/05/19	WB	SW8270D (SIM)
Chrysene	ND	0.05	ug/L	1	12/05/19	WB	SW8270D (SIM)
Dibenz(a,h)anthracene	ND	0.02	ug/L	1	12/05/19	WB	SW8270D (SIM)
Fluoranthene	ND	0.47	ug/L	1	12/05/19	WB	SW8270D (SIM)
Fluorene	ND	0.09	ug/L	1	12/05/19	WB	SW8270D (SIM)
Hexachlorobenzene	ND	0.47	ug/L	1	12/05/19	WB	SW8270D (SIM)
Hexachlorobutadiene	ND	0.47	ug/L	1	12/05/19	WB	SW8270D (SIM)
Hexachlorocyclopentadiene	ND	0.47	ug/L	1	12/05/19	WB	SW8270D (SIM)
Indeno(1,2,3-cd)pyrene	ND	0.09	ug/L	1	12/05/19	WB	SW8270D (SIM)
Naphthalene	ND	0.47	ug/L	1	12/05/19	WB	SW8270D (SIM)
Nitrobenzene	ND	0.47	ug/L	1	12/05/19	WB	SW8270D (SIM)
N-Nitrosodimethylamine	ND	0.47	ug/L	1	12/05/19	WB	SW8270D (SIM)
Pentachlorophenol	ND	0.47	ug/L	1	12/05/19	WB	SW8270D (SIM)
Phenanthrene	ND	0.47	ug/L	1	12/05/19	WB	SW8270D (SIM)
Pyrene	ND	0.07	ug/L	1	12/05/19	WB	SW8270D (SIM)
Pyridine	ND	0.47	ug/L	1	12/05/19	WB	SW8270D (SIM)
QA/QC Surrogates							
% 2,4,6-Tribromophenol	63		%	1	12/05/19	WB	15 - 110 %
% 2-Fluorobiphenyl	58		%	1	12/05/19	WB	40 - 140 %
% 2-Fluorophenol	41		%	1	12/05/19	WB	15 - 110 %
% Nitrobenzene-d5	52		%	1	12/05/19	WB	40 - 140 %
% Phenol-d5	45		%	1	12/05/19	WB	15 - 110 %
% Terphenyl-d14	51		%	1	12/05/19	WB	40 - 140 %
1,4-dioxane							
1,4-dioxane	ND	0.20	ug/l	1	12/05/19	AW	SW8270DSIM
QA/QC Surrogates							
% 1,4-dioxane-d8	74		%	1	12/05/19	AW	30 - 130 %

Project ID: BEACH MONT REVERE
Client ID: P-4

Phoenix I.D.: CE70270

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
Extraction for 1,4-Dioxane	Completed				12/03/19	S/S	

RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level
QA/QC Surrogates: Surrogates are compounds (preceeded with a %) added by the lab to determine analysis efficiency. Surrogate results(%) listed in the report are not "detected" compounds.

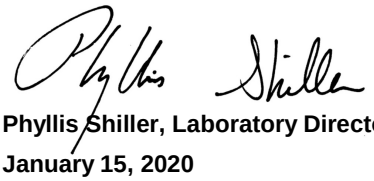
Comments:

Per 1.4.6 of EPA method 8270D, 1,2-Diphenylhydrazine is unstable and readily converts to Azobenzene. Azobenzene is used for the calibration of 1,2-Diphenylhydrazine.

The regulatory hold time for Chlorine is immediately. This Chlorine was performed in the laboratory and may be considered outside of hold-time.

8260 Analysis:
1,4-Dioxane doesn't meet GW-1 criteria, this compound is analyzed by 8270SIM to achieve this criteria.

If you are the client above and have any questions concerning this testing, please do not hesitate to contact Phoenix Client Services at ext.200.
The contents of this report cannot be discussed with anyone other than the client listed above without their written consent.



Phyllis Shiller, Laboratory Director
January 15, 2020
Reviewed and Released by: Rashmi Makol, Project Manager

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

Analysis Report

January 15, 2020

FOR: Attn:
Terra Environmental LLC
P.O. Box 473
Reading, MA 01867

Sample Information		Custody Information		Date	Time
Matrix:	GROUND WATER	Collected by:		12/02/19	
Location Code:	TERRA-ENV	Received by:	SW	12/03/19	14:32
Rush Request:	Standard	Analyzed by:	see "By" below		
P.O.#:	19-125				

Laboratory Data

SDG ID: GCE70270
Phoenix ID: CE70271

Project ID: BEACH MONT REVERE
Client ID: TRIP BLANK

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
Volatiles							
1,1,1,2-Tetrachloroethane	ND	1.0	ug/L	1	12/03/19	MH	SW8260C
1,1,1-Trichloroethane	ND	1.0	ug/L	1	12/03/19	MH	SW8260C
1,1,2,2-Tetrachloroethane	ND	0.50	ug/L	1	12/03/19	MH	SW8260C
1,1,2-Trichloroethane	ND	1.0	ug/L	1	12/03/19	MH	SW8260C
1,1-Dichloroethane	ND	1.0	ug/L	1	12/03/19	MH	SW8260C
1,1-Dichloroethene	ND	1.0	ug/L	1	12/03/19	MH	SW8260C
1,1-Dichloropropene	ND	1.0	ug/L	1	12/03/19	MH	SW8260C
1,2,3-Trichlorobenzene	ND	1.0	ug/L	1	12/03/19	MH	SW8260C
1,2,3-Trichloropropane	ND	1.0	ug/L	1	12/03/19	MH	SW8260C
1,2,4-Trichlorobenzene	ND	1.0	ug/L	1	12/03/19	MH	SW8260C
1,2,4-Trimethylbenzene	ND	1.0	ug/L	1	12/03/19	MH	SW8260C
1,2-Dibromo-3-chloropropane	ND	1.0	ug/L	1	12/03/19	MH	SW8260C
1,2-Dibromoethane	ND	0.50	ug/L	1	12/03/19	MH	SW8260C
1,2-Dichlorobenzene	ND	1.0	ug/L	1	12/03/19	MH	SW8260C
1,2-Dichloroethane	ND	0.60	ug/L	1	12/03/19	MH	SW8260C
1,2-Dichloropropane	ND	1.0	ug/L	1	12/03/19	MH	SW8260C
1,3,5-Trimethylbenzene	ND	1.0	ug/L	1	12/03/19	MH	SW8260C
1,3-Dichlorobenzene	ND	1.0	ug/L	1	12/03/19	MH	SW8260C
1,3-Dichloropropane	ND	1.0	ug/L	1	12/03/19	MH	SW8260C
1,4-Dichlorobenzene	ND	1.0	ug/L	1	12/03/19	MH	SW8260C
2,2-Dichloropropane	ND	1.0	ug/L	1	12/03/19	MH	SW8260C
2-Chlorotoluene	ND	1.0	ug/L	1	12/03/19	MH	SW8260C
2-Hexanone	ND	5.0	ug/L	1	12/03/19	MH	SW8260C
2-Isopropyltoluene	ND	1.0	ug/L	1	12/03/19	MH	SW8260C
4-Chlorotoluene	ND	1.0	ug/L	1	12/03/19	MH	SW8260C
4-Methyl-2-pentanone	ND	5.0	ug/L	1	12/03/19	MH	SW8260C

Project ID: BEACH MONT REVERE
Client ID: TRIP BLANK

Phoenix I.D.: CE70271

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
Acetone	ND	25	ug/L	1	12/03/19	MH	SW8260C
Acrylonitrile	ND	1.0	ug/L	1	12/03/19	MH	SW8260C
Benzene	ND	0.70	ug/L	1	12/03/19	MH	SW8260C
Bromobenzene	ND	1.0	ug/L	1	12/03/19	MH	SW8260C
Bromochloromethane	ND	1.0	ug/L	1	12/03/19	MH	SW8260C
Bromodichloromethane	ND	0.50	ug/L	1	12/03/19	MH	SW8260C
Bromoform	ND	1.0	ug/L	1	12/03/19	MH	SW8260C
Bromomethane	ND	1.0	ug/L	1	12/03/19	MH	SW8260C
Carbon Disulfide	ND	5.0	ug/L	1	12/03/19	MH	SW8260C
Carbon tetrachloride	ND	1.0	ug/L	1	12/03/19	MH	SW8260C
Chlorobenzene	ND	1.0	ug/L	1	12/03/19	MH	SW8260C
Chloroethane	ND	1.0	ug/L	1	12/03/19	MH	SW8260C
Chloroform	ND	1.0	ug/L	1	12/03/19	MH	SW8260C
Chloromethane	ND	1.0	ug/L	1	12/03/19	MH	SW8260C
cis-1,2-Dichloroethene	ND	1.0	ug/L	1	12/03/19	MH	SW8260C
cis-1,3-Dichloropropene	ND	0.40	ug/L	1	12/03/19	MH	SW8260C
Dibromochloromethane	ND	0.50	ug/L	1	12/03/19	MH	SW8260C
Dibromomethane	ND	1.0	ug/L	1	12/03/19	MH	SW8260C
Dichlorodifluoromethane	ND	1.0	ug/L	1	12/03/19	MH	SW8260C
Ethylbenzene	ND	1.0	ug/L	1	12/03/19	MH	SW8260C
Hexachlorobutadiene	ND	0.40	ug/L	1	12/03/19	MH	SW8260C
Isopropylbenzene	ND	1.0	ug/L	1	12/03/19	MH	SW8260C
m&p-Xylene	ND	1.0	ug/L	1	12/03/19	MH	SW8260C
Methyl ethyl ketone	ND	5.0	ug/L	1	12/03/19	MH	SW8260C
Methyl t-butyl ether (MTBE)	ND	1.0	ug/L	1	12/03/19	MH	SW8260C
Methylene chloride	ND	1.0	ug/L	1	12/03/19	MH	SW8260C
Naphthalene	ND	1.0	ug/L	1	12/03/19	MH	SW8260C
n-Butylbenzene	ND	1.0	ug/L	1	12/03/19	MH	SW8260C
n-Propylbenzene	ND	1.0	ug/L	1	12/03/19	MH	SW8260C
o-Xylene	ND	1.0	ug/L	1	12/03/19	MH	SW8260C
p-Isopropyltoluene	ND	1.0	ug/L	1	12/03/19	MH	SW8260C
sec-Butylbenzene	ND	1.0	ug/L	1	12/03/19	MH	SW8260C
Styrene	ND	1.0	ug/L	1	12/03/19	MH	SW8260C
tert-Butylbenzene	ND	1.0	ug/L	1	12/03/19	MH	SW8260C
Tetrachloroethene	ND	1.0	ug/L	1	12/03/19	MH	SW8260C
Tetrahydrofuran (THF)	ND	2.5	ug/L	1	12/03/19	MH	SW8260C
Toluene	ND	1.0	ug/L	1	12/03/19	MH	SW8260C
Total Xylenes	ND	1.0	ug/L	1	12/03/19	MH	SW8260C
trans-1,2-Dichloroethene	ND	1.0	ug/L	1	12/03/19	MH	SW8260C
trans-1,3-Dichloropropene	ND	0.40	ug/L	1	12/03/19	MH	SW8260C
trans-1,4-dichloro-2-butene	ND	5.0	ug/L	1	12/03/19	MH	SW8260C
Trichloroethene	ND	1.0	ug/L	1	12/03/19	MH	SW8260C
Trichlorofluoromethane	ND	1.0	ug/L	1	12/03/19	MH	SW8260C
Trichlorotrifluoroethane	ND	1.0	ug/L	1	12/03/19	MH	SW8260C
Vinyl chloride	ND	1.0	ug/L	1	12/03/19	MH	SW8260C
QA/QC Surrogates							
% 1,2-dichlorobenzene-d4	94		%	1	12/03/19	MH	70 - 130 %
% Bromofluorobenzene	96		%	1	12/03/19	MH	70 - 130 %
% Dibromofluoromethane	103		%	1	12/03/19	MH	70 - 130 %

Project ID: BEACH MONT REVERE
Client ID: TRIP BLANK

Phoenix I.D.: CE70271

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
% Toluene-d8	91		%	1	12/03/19	MH	70 - 130 %
Oxygenates & Dioxane							
1,4-Dioxane	ND	50	ug/L	1	12/03/19	MH	SW8260C (OXY)
Diethyl ether	ND	1.0	ug/L	1	12/03/19	MH	SW8260C (OXY)
Di-isopropyl ether	ND	1.0	ug/L	1	12/03/19	MH	SW8260C (OXY)
Ethyl tert-butyl ether	ND	1.0	ug/L	1	12/03/19	MH	SW8260C (OXY)
tert-amyl methyl ether	ND	1.0	ug/L	1	12/03/19	MH	SW8260C (OXY)

RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level
QA/QC Surrogates: Surrogates are compounds (preceeded with a %) added by the lab to determine analysis efficiency. Surrogate results(%) listed in the report are not "detected" compounds.

Comments:

TRIP BLANK INCLUDED.

8260 Analysis:
1,4-Dioxane doesn't meet GW-1 criteria, this compound is analyzed by 8270SIM to achieve this criteria.

If you are the client above and have any questions concerning this testing, please do not hesitate to contact Phoenix Client Services at ext.200.
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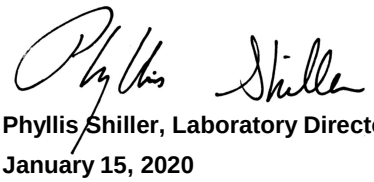

Phyllis Shiller, Laboratory Director
January 15, 2020
Reviewed and Released by: Rashmi Makol, Project Manager

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

QA/QC Report

January 15, 2020

QA/QC Data

SDG I.D.: GCE70270

Parameter	Blank	Blk RL	Sample Result	Dup Result	Dup RPD	LCS %	LCSD %	LCS RPD	MS %	MSD %	MS RPD	% Rec Limits	% RPD Limits
QA/QC Batch 508678 (mg/L), QC Sample No: CE70572 (CE70270)													
Mercury - Water	BRL	0.0002	<0.0002	<0.0002	NC	95.9			89.9			75 - 125	30
Comment:													
Additional Mercury criteria: LCS acceptance range for waters is 80-120% and for soils is 75-125%													
QA/QC Batch 508575 (mg/L), QC Sample No: CE69425 (CE70270)													
ICP Metals - Aqueous													
Antimony	BRL	0.005	<0.005	<0.005	NC	105	106	0.9	106			75 - 125	20
Arsenic	BRL	0.004	<0.004	<0.004	NC	97.7	98.3	0.6	98.4			75 - 125	20
Cadmium	BRL	0.001	<0.001	<0.001	NC	108	107	0.9	105			75 - 125	20
Chromium	BRL	0.001	<0.001	<0.001	NC	106	106	0.0	105			75 - 125	20
Copper	BRL	0.005	<0.005	<0.005	NC	95.6	95.6	0.0	96.6			75 - 125	20
Iron	BRL	0.010	0.102	0.101	1.00	104	104	0.0	103			75 - 125	20
Lead	BRL	0.002	<0.002	<0.002	NC	96.6	96.9	0.3	97.2			75 - 125	20
Nickel	BRL	0.001	<0.001	<0.001	NC	103	103	0.0	102			75 - 125	20
Selenium	BRL	0.010	<0.010	<0.010	NC	93.2	94.0	0.9	93.7			75 - 125	20
Silver	BRL	0.001	<0.001	<0.001	NC	99.8	100	0.2	101			75 - 125	20
Zinc	BRL	0.004	0.004	<0.004	NC	101	101	0.0	100			75 - 125	20

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QA/QC Report

January 15, 2020

QA/QC Data

SDG I.D.: GCE70270

Parameter	Blank	Blk RL	Sample Result	Dup Result	Dup RPD	LCS %	LCSD %	LCS RPD	MS %	MSD %	MS RPD	% Rec Limits	% RPD Limits	
QA/QC Batch 508635 (mg/L), QC Sample No: CE69161 (CE70270)														
Total Cyanide	BRL	0.010	0.481	0.479	0.40	97.9			86.5			90 - 110	30	m
Comment:														
Blank spike recovery was 106 %.														
Additional soil criteria LCS acceptance range is 80-120% MS acceptance range 75-125%.														
QA/QC Batch 508739 (mg/L), QC Sample No: CE70086 (CE70270)														
Total Suspended Solids	BRL	2.5	18	16	NC	106						85 - 115		
QA/QC Batch 509086 (mg/L), QC Sample No: CE70164 (CE70270)														
O&G, Non-polar Material	BRL	1.4	<1.4	<1.4	NC	93.0			92.0			85 - 115	20	
Comment:														
Additional: LCS acceptance range is 85-115% MS acceptance range 75-125%.														
QA/QC Batch 508626 (mg/L), QC Sample No: CE70457 (CE70270)														
Chromium, Hexavalent	BRL	0.01	<0.01	<0.01	NC	103			111			90 - 110	30	
Comment:														
Additional Hexavalent Chromium criteria: LCS acceptance range for waters is 90-110% and MS acceptance range is 85-115%.														
QA/QC Batch 509071 (mg/L), QC Sample No: CE70731 (CE70270)														
Chloride	BRL	3.0	15.2	14.3	NC	99.0			104			90 - 110	20	
QA/QC Batch 508585 (mg/L), QC Sample No: CE68684 (CE70270)														
Ammonia as Nitrogen	BRL	0.05	0.14	0.25	NC	99.9			97.4			90 - 110	20	
QA/QC Batch 508900 (mg/L), QC Sample No: CE70703 (CE70270)														
Phenolics	BRL	0.015	<0.015	<0.015	NC	105			92.5			90 - 110	20	
QA/QC Batch 508627 (mg/L), QC Sample No: CE70176 (CE70270)														
Chlorine Residual	BRL	0.02	<0.02	<0.02	NC	106								

m = This parameter is outside laboratory MS/MSD specified recovery limits.

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QA/QC Report

January 15, 2020

QA/QC Data

SDG I.D.: GCE70270

Parameter	Blank	Blk RL	LCS %	LCSD %	LCS RPD	MS %	MSD %	MS RPD	% Rec Limits	% RPD Limits	
QA/QC Batch 509108 (ug/L), QC Sample No: CE81798 (CE70270)											
EDB and DBCP Analysis - Ground Water											
1,2-Dibromoethane (EDB)	ND	0.01	105	108	2.8	115			70 - 130	25	
Comment:											
This batch consists of a Blank, LCS, LCSD and MS.											
QA/QC Batch 508551 (ug/L), QC Sample No: CE69915 (CE70270)											
Polychlorinated Biphenyls - Ground Water											
PCB-1016	ND	0.050	92	105	13.2				40 - 140	20	
PCB-1221	ND	0.050							40 - 140	20	
PCB-1232	ND	0.050							40 - 140	20	
PCB-1242	ND	0.050							40 - 140	20	
PCB-1248	ND	0.050							40 - 140	20	
PCB-1254	ND	0.050							40 - 140	20	
PCB-1260	ND	0.050	95	111	15.5				40 - 140	20	
PCB-1262	ND	0.050							40 - 140	20	
PCB-1268	ND	0.050							40 - 140	20	
% DCBP (Surrogate Rec)	77	%	94	94	0.0				30 - 150	20	
% DCBP (Surrogate Rec) (Confirm	73	%	90	88	2.2				30 - 150	20	
% TCMX (Surrogate Rec)	71	%	94	100	6.2				30 - 150	20	
% TCMX (Surrogate Rec) (Confirm	65	%	91	101	10.4				30 - 150	20	
Comment:											
A LCS and LCS Duplicate were performed instead of a matrix spike and matrix spike duplicate.											
QA/QC Batch 508558 (ug/L), QC Sample No: CE69275 (CE70270)											
Semivolatiles - Ground Water											
1,2,4,5-Tetrachlorobenzene	ND	3.5	74	70	5.6	70	75	6.9	40 - 140	20	
1,2,4-Trichlorobenzene	ND	3.5	65	54	18.5	64	60	6.5	40 - 140	20	
1,2-Dichlorobenzene	ND	1.0	57	45	23.5	52	48	8.0	40 - 140	20	r
1,2-Diphenylhydrazine	ND	1.6	93	88	5.5	82	91	10.4	40 - 140	20	
1,3-Dichlorobenzene	ND	1.0	52	42	21.3	50	43	15.1	40 - 140	20	r
1,4-Dichlorobenzene	ND	1.0	54	44	20.4	50	46	8.3	40 - 140	20	
2,4,5-Trichlorophenol	ND	1.0	98	92	6.3	84	87	3.5	30 - 130	20	
2,4,6-Trichlorophenol	ND	1.0	92	87	5.6	87	86	1.2	30 - 130	20	
2,4-Dichlorophenol	ND	1.0	80	74	7.8	77	81	5.1	30 - 130	20	
2,4-Dimethylphenol	ND	1.0	89	85	4.6	84	82	2.4	30 - 130	20	
2,4-Dinitrophenol	ND	1.0	95	99	4.1	90	118	26.9	30 - 130	20	r
2,4-Dinitrotoluene	ND	3.5	104	103	1.0	97	105	7.9	40 - 140	20	
2,6-Dinitrotoluene	ND	3.5	99	99	0.0	94	100	6.2	40 - 140	20	
2-Chloronaphthalene	ND	3.5	78	76	2.6	74	73	1.4	40 - 140	20	
2-Chlorophenol	ND	1.0	66	53	21.8	61	61	0.0	30 - 130	20	r
2-Methylphenol (o-cresol)	ND	1.0	81	68	17.4	69	81	16.0	30 - 130	20	
2-Nitroaniline	ND	3.5	161	148	8.4	82	94	13.6	40 - 140	20	l
2-Nitrophenol	ND	1.0	91	77	16.7	88	83	5.8	30 - 130	20	

QA/QC Data

SDG I.D.: GCE70270

Parameter	Blank	Blk RL	LCS %	LCSD %	LCS RPD	MS %	MSD %	MS RPD	% Rec Limits	% RPD Limits	
3&4-Methylphenol (m&p-cresol)	ND	1.0	82	74	10.3	74	86	15.0	30 - 130	20	
3,3'-Dichlorobenzidine	ND	5.0	52	57	9.2	11	11	0.0	40 - 140	20	m
3-Nitroaniline	ND	5.0	105	104	1.0	92	93	1.1	40 - 140	20	
4,6-Dinitro-2-methylphenol	ND	1.0	112	109	2.7	95	129	30.4	30 - 130	20	r
4-Bromophenyl phenyl ether	ND	3.5	85	89	4.6	83	86	3.6	40 - 140	20	
4-Chloro-3-methylphenol	ND	1.0	97	94	3.1	92	102	10.3	30 - 130	20	
4-Chloroaniline	ND	3.5	79	68	15.0	71	65	8.8	40 - 140	20	
4-Chlorophenyl phenyl ether	ND	1.0	94	91	3.2	85	94	10.1	40 - 140	20	
4-Nitroaniline	ND	5.0	100	100	0.0	65	65	0.0	40 - 140	20	
4-Nitrophenol	ND	1.0	120	112	6.9	102	117	13.7	30 - 130	20	
Acetophenone	ND	3.5	68	60	12.5	65	70	7.4	40 - 140	20	
Aniline	ND	3.5	58	39	39.2	52	40	26.1	40 - 140	20	l,r
Benzidine	ND	4.5	72	<10	NC	<10	<10	NC	40 - 140	20	l,m
Benzoic acid	ND	10	67	88	27.1	84	119	34.5	30 - 130	20	r
Benzyl butyl phthalate	ND	1.5	94	87	7.7	81	94	14.9	40 - 140	20	
Bis(2-chloroethoxy)methane	ND	3.5	73	69	5.6	75	76	1.3	40 - 140	20	
Bis(2-chloroethyl)ether	ND	1.0	54	42	25.0	54	53	1.9	40 - 140	20	r
Bis(2-chloroisopropyl)ether	ND	1.0	58	47	21.0	57	57	0.0	40 - 140	20	r
Bis(2-ethylhexyl)phthalate	ND	1.5	96	85	12.2	82	98	17.8	40 - 140	20	
Carbazole	ND	5.0	90	93	3.3	84	87	3.5	40 - 140	20	
Dibenzofuran	ND	3.5	87	84	3.5	81	82	1.2	40 - 140	20	
Diethyl phthalate	ND	1.5	102	99	3.0	91	104	13.3	40 - 140	20	
Dimethylphthalate	ND	1.5	94	91	3.2	84	91	8.0	40 - 140	20	
Di-n-butylphthalate	ND	1.5	101	100	1.0	88	100	12.8	40 - 140	20	
Di-n-octylphthalate	ND	1.5	107	98	8.8	92	112	19.6	40 - 140	20	
Hexachloroethane	ND	3.5	56	43	26.3	52	45	14.4	40 - 140	20	r
Isophorone	ND	3.5	72	69	4.3	72	75	4.1	40 - 140	20	
N-Nitrosodi-n-propylamine	ND	3.5	81	72	11.8	80	90	11.8	40 - 140	20	
N-Nitrosodiphenylamine	ND	3.5	82	84	2.4	66	74	11.4	40 - 140	20	
Pentachloronitrobenzene	ND	5.0	97	94	3.1	84	92	9.1	40 - 140	20	
Phenol	ND	1.0	73	62	16.3	69	73	5.6	30 - 130	20	
% 2,4,6-Tribromophenol	84	%	94	101	7.2	91	96	5.3	15 - 110	20	
% 2-Fluorobiphenyl	66	%	72	69	4.3	69	67	2.9	30 - 130	20	
% 2-Fluorophenol	54	%	50	38	27.3	49	43	13.0	15 - 110	20	r
% Nitrobenzene-d5	56	%	70	61	13.7	65	71	8.8	30 - 130	20	
% Phenol-d5	52	%	63	54	15.4	61	63	3.2	15 - 110	20	
% Terphenyl-d14	70	%	85	90	5.7	75	83	10.1	30 - 130	20	

Comment:

Additional 8270 criteria: 10% of compounds can be outside of acceptance criteria as long as recovery is at least 10%. (Acid surrogates acceptance range for aqueous samples: 10-110%, for soils 30-130%)

QA/QC Batch 508591 (ug/l), QC Sample No: CE69269 (CE70270)

1,4dioxane - Ground Water

1,4-dioxane	ND	0.20	84	77	8.7	94	81	14.9	30 - 130	20	
% 1,4-dioxane-d8	75	%	83	81	2.4	80	70	13.3	30 - 130	20	

QA/QC Batch 508558 (ug/L), QC Sample No: CE69275 (CE70270)

Semivolatiles (SIM) - Ground Water

2-Methylnaphthalene	ND	0.50	77	75	2.6				40 - 140	20	
Acenaphthene	ND	0.50	92	97	5.3				40 - 140	20	
Acenaphthylene	ND	0.50	82	85	3.6				40 - 140	20	
Anthracene	ND	0.50	102	110	7.5				40 - 140	20	
Benz(a)anthracene	ND	0.50	104	111	6.5				40 - 140	20	
Benzo(a)pyrene	ND	0.50	111	119	7.0				40 - 140	20	

Parameter	Blank	Blk RL	LCS %	LCSD %	LCS RPD	MS %	MSD %	MS RPD	% Rec Limits	% RPD Limits	
Benzo(b)fluoranthene	ND	0.50	118	127	7.3				40 - 140	20	
Benzo(ghi)perylene	ND	0.50	117	122	4.2				40 - 140	20	
Benzo(k)fluoranthene	ND	0.50	136	147	7.8				40 - 140	20	l
Chrysene	ND	0.50	109	116	6.2				40 - 140	20	
Dibenz(a,h)anthracene	ND	0.50	139	146	4.9				40 - 140	20	l
Fluoranthene	ND	0.50	103	111	7.5				40 - 140	20	
Fluorene	ND	0.50	95	100	5.1				40 - 140	20	
Hexachlorobenzene	ND	0.50	98	107	8.8				40 - 140	20	
Hexachlorobutadiene	ND	0.50	66	56	16.4				40 - 140	20	
Hexachlorocyclopentadiene	ND	0.50	38	35	8.2				40 - 140	20	l
Indeno(1,2,3-cd)pyrene	ND	0.50	121	128	5.6				40 - 140	20	
Naphthalene	ND	0.50	70	64	9.0				40 - 140	20	
Nitrobenzene	ND	0.50	73	66	10.1				40 - 140	20	
N-Nitrosodimethylamine	ND	0.05	54	48	11.8				40 - 140	20	
Pentachlorophenol	ND	0.50	112	127	12.6				40 - 140	20	
Phenanthrene	ND	0.50	96	103	7.0				40 - 140	20	
Pyrene	ND	0.50	107	113	5.5				40 - 140	20	
Pyridine	ND	0.50	42	28	40.0				40 - 140	20	l,r
% 2,4,6-Tribromophenol	76	%	110	121	9.5				15 - 110	20	l
% 2-Fluorobiphenyl	58	%	76	79	3.9				40 - 140	20	
% 2-Fluorophenol	55	%	65	51	24.1				15 - 110	20	r
% Nitrobenzene-d5	51	%	70	62	12.1				40 - 140	20	
% Phenol-d5	60	%	75	67	11.3				15 - 110	20	
% Terphenyl-d14	77	%	94	100	6.2				40 - 140	20	

Comment:

Additional 8270 criteria: 10% of compounds can be outside of acceptance criteria as long as recovery is at least 10%. (Acid surrogates acceptance range for aqueous samples: 10-110%, for soils 30-130%)

QA/QC Batch 508771 (ug/L), QC Sample No: CE70331 (CE70270, CE70271)

Volatiles - Ground Water

1,1,1,2-Tetrachloroethane	ND	1.0	96	106	9.9				70 - 130	30	
1,1,1-Trichloroethane	ND	1.0	90	105	15.4				70 - 130	30	
1,1,2,2-Tetrachloroethane	ND	0.50	89	105	16.5				70 - 130	30	
1,1,2-Trichloroethane	ND	1.0	87	104	17.8				70 - 130	30	
1,1-Dichloroethane	ND	1.0	96	104	8.0				70 - 130	30	
1,1-Dichloroethene	ND	1.0	97	108	10.7				70 - 130	30	
1,1-Dichloropropene	ND	1.0	82	100	19.8				70 - 130	30	
1,2,3-Trichlorobenzene	ND	1.0	80	96	18.2				70 - 130	30	
1,2,3-Trichloropropane	ND	1.0	83	98	16.6				70 - 130	30	
1,2,4-Trichlorobenzene	ND	1.0	90	102	12.5				70 - 130	30	
1,2,4-Trimethylbenzene	ND	1.0	92	99	7.3				70 - 130	30	
1,2-Dibromo-3-chloropropane	ND	1.0	96	112	15.4				70 - 130	30	
1,2-Dibromoethane	ND	1.0	88	101	13.8				70 - 130	30	
1,2-Dichlorobenzene	ND	1.0	89	100	11.6				70 - 130	30	
1,2-Dichloroethane	ND	1.0	88	103	15.7				70 - 130	30	
1,2-Dichloropropane	ND	1.0	92	105	13.2				70 - 130	30	
1,3,5-Trimethylbenzene	ND	1.0	93	99	6.3				70 - 130	30	
1,3-Dichlorobenzene	ND	1.0	90	99	9.5				70 - 130	30	
1,3-Dichloropropane	ND	1.0	88	100	12.8				70 - 130	30	
1,4-Dichlorobenzene	ND	1.0	89	99	10.6				70 - 130	30	
1,4-dioxane	ND	100	117	116	0.9				40 - 160	30	
2,2-Dichloropropane	ND	1.0	97	111	13.5				70 - 130	30	
2-Chlorotoluene	ND	1.0	94	99	5.2				70 - 130	30	

QA/QC Data

SDG I.D.: GCE70270

Parameter	Blank	Blk RL	LCS %	LCSD %	LCS RPD	MS %	MSD %	MS RPD	% Rec Limits	% RPD Limits	
2-Hexanone	ND	5.0	74	90	19.5				40 - 160	30	
2-Isopropyltoluene	ND	1.0	90	97	7.5				70 - 130	30	
4-Chlorotoluene	ND	1.0	93	98	5.2				70 - 130	30	
4-Methyl-2-pentanone	ND	5.0	75	96	24.6				40 - 160	30	
Acetone	ND	5.0	60	89	38.9				40 - 160	30	r
Acrylonitrile	ND	5.0	85	101	17.2				70 - 130	30	
Benzene	ND	0.70	94	103	9.1				70 - 130	30	
Bromobenzene	ND	1.0	92	99	7.3				70 - 130	30	
Bromochloromethane	ND	1.0	93	108	14.9				70 - 130	30	
Bromodichloromethane	ND	0.50	93	107	14.0				70 - 130	30	
Bromoform	ND	1.0	92	110	17.8				70 - 130	30	
Bromomethane	ND	1.0	131	132	0.8				40 - 160	30	
Carbon Disulfide	ND	1.0	87	97	10.9				70 - 130	30	
Carbon tetrachloride	ND	1.0	88	105	17.6				70 - 130	30	
Chlorobenzene	ND	1.0	94	100	6.2				70 - 130	30	
Chloroethane	ND	1.0	98	102	4.0				70 - 130	30	
Chloroform	ND	1.0	97	107	9.8				70 - 130	30	
Chloromethane	ND	1.0	99	103	4.0				40 - 160	30	
cis-1,2-Dichloroethene	ND	1.0	96	105	9.0				70 - 130	30	
cis-1,3-Dichloropropene	ND	0.40	91	106	15.2				70 - 130	30	
Dibromochloromethane	ND	0.50	97	110	12.6				70 - 130	30	
Dibromomethane	ND	1.0	88	103	15.7				70 - 130	30	
Dichlorodifluoromethane	ND	1.0	105	114	8.2				40 - 160	30	
Ethyl ether	ND	1.0	86	101	16.0				70 - 130	30	
Ethylbenzene	ND	1.0	94	101	7.2				70 - 130	30	
Hexachlorobutadiene	ND	0.40	101	104	2.9				70 - 130	30	
Isopropylbenzene	ND	1.0	89	98	9.6				70 - 130	30	
m&p-Xylene	ND	1.0	93	100	7.3				70 - 130	30	
Methyl ethyl ketone	ND	5.0	68	102	40.0				40 - 160	30	r
Methyl t-butyl ether (MTBE)	ND	1.0	86	107	21.8				70 - 130	30	
Methylene chloride	ND	1.0	84	91	8.0				70 - 130	30	
Naphthalene	ND	1.0	79	96	19.4				70 - 130	30	
n-Butylbenzene	ND	1.0	90	99	9.5				70 - 130	30	
n-Propylbenzene	ND	1.0	88	99	11.8				70 - 130	30	
o-Xylene	ND	1.0	95	103	8.1				70 - 130	30	
p-Isopropyltoluene	ND	1.0	90	100	10.5				70 - 130	30	
sec-Butylbenzene	ND	1.0	90	103	13.5				70 - 130	30	
Styrene	ND	1.0	99	109	9.6				70 - 130	30	
tert-Butylbenzene	ND	1.0	86	98	13.0				70 - 130	30	
Tetrachloroethene	ND	1.0	86	104	18.9				70 - 130	30	
Tetrahydrofuran (THF)	ND	2.5	75	94	22.5				70 - 130	30	
Toluene	ND	1.0	95	106	10.9				70 - 130	30	
trans-1,2-Dichloroethene	ND	1.0	97	107	9.8				70 - 130	30	
trans-1,3-Dichloropropene	ND	0.40	90	106	16.3				70 - 130	30	
trans-1,4-dichloro-2-butene	ND	5.0	100	117	15.7				70 - 130	30	
Trichloroethene	ND	1.0	91	101	10.4				70 - 130	30	
Trichlorofluoromethane	ND	1.0	94	107	12.9				70 - 130	30	
Trichlorotrifluoroethane	ND	1.0	88	105	17.6				70 - 130	30	
Vinyl chloride	ND	1.0	91	99	8.4				70 - 130	30	
% 1,2-dichlorobenzene-d4	94	%	97	101	4.0				70 - 130	30	
% Bromofluorobenzene	97	%	97	101	4.0				70 - 130	30	
% Dibromofluoromethane	103	%	93	99	6.3				70 - 130	30	
% Toluene-d8	91	%	100	101	1.0				70 - 130	30	

QA/QC Data

SDG I.D.: GCE70270

Parameter	Blank	Blk RL	LCS %	LCSD %	LCS RPD	MS %	MSD %	MS RPD	% Rec Limits	% RPD Limits
Comment:										
A LCS and LCS Duplicate were performed instead of a matrix spike and matrix spike duplicate.										
Additional 8260 criteria: 10% of compounds can be outside of acceptance criteria as long as recovery is 10%.										
QA/QC Batch 508770 (ug/L), QC Sample No: CE70270 (CE70270)										
Oxygenates - Ground Water										
Ethanol	ND	200	89	85	4.6	77	90	15.6	70 - 130	30
tert-amyl methyl ether	ND	10	109	110	0.9	103	104	1.0	70 - 130	30
tert-butyl alcohol	ND	25	101	112	10.3	95	97	2.1	70 - 130	30
Comment:										
A blank MS/MSD was analyzed with this batch.										

l = This parameter is outside laboratory LCS/LCSD specified recovery limits.
m = This parameter is outside laboratory MS/MSD specified recovery limits.
r = This parameter is outside laboratory RPD specified recovery limits.

If there are any questions regarding this data, please call Phoenix Client Services at extension 200.

RPD - Relative Percent Difference
LCS - Laboratory Control Sample
LCSD - Laboratory Control Sample Duplicate
MS - Matrix Spike
MS Dup - Matrix Spike Duplicate
NC - No Criteria
Intf - Interference

Phyllis Shiller, Laboratory Director
January 15, 2020

Wednesday, January 15, 2020

Criteria: MA: CAM, GW1, GW2

State: MA

Sample Criteria Exceedances Report

GCE70270 - TERRA-ENV

SampNo	Acode	Phoenix Analyte	Criteria	Result	RL	Criteria	RL Criteria	Analysis Units
CE70270	$8260GWR	Acetone	MA / CAM Protocol / VOA AQ RL	ND	25		10	ug/L
CE70270	$8260GWR	Carbon Disulfide	MA / CAM Protocol / VOA AQ RL	ND	5.0		2	ug/L
CE70270	$8260GWR	Tetrahydrofuran (THF)	MA / CAM Protocol / VOA AQ RL	ND	2.5		2	ug/L
CE70270	$8260GWR	trans-1,4-dichloro-2-butene	MA / CAM Protocol / VOA AQ RL	ND	5.0		2	ug/L
CE70270	$8260GWR	1,2-Dibromoethane	MA / CMR 310.40.1600 / GW-1 (mg/l)	ND	0.50	0.02	0.02	ug/L
CE70270	$8260GWR	1,2-Dibromoethane	MA / GROUNDWATER STANDARDS / GW-1	ND	0.50	0.02	0.02	ug/L
CE70270	$8270-SIMFSR	Benzoic acid	MA / CAM Protocol / SVOA AQ RL	ND	47		10	ug/L
CE70270	NH3-WM	Ammonia as Nitrogen	MA / CMR 310.40.1600 / GW-1 (mg/l)	4.65	0.25	1	1	mg/L
CE70270	TCN-WM	Total Cyanide	MA / CMR 310.40.1600 / GW-1 (mg/l)	0.043	0.010	0.03	0.03	mg/L
CE70270	TCN-WM	Total Cyanide	MA / CMR 310.40.1600 / GW-2 (mg/l)	0.043	0.010	0.03	0.03	mg/L
CE70271	$8260GWR	Acetone	MA / CAM Protocol / VOA AQ RL	ND	25		10	ug/L
CE70271	$8260GWR	Carbon Disulfide	MA / CAM Protocol / VOA AQ RL	ND	5.0		2	ug/L
CE70271	$8260GWR	Tetrahydrofuran (THF)	MA / CAM Protocol / VOA AQ RL	ND	2.5		2	ug/L
CE70271	$8260GWR	trans-1,4-dichloro-2-butene	MA / CAM Protocol / VOA AQ RL	ND	5.0		2	ug/L
CE70271	$8260GWR	1,2-Dibromoethane	MA / CMR 310.40.1600 / GW-1 (mg/l)	ND	0.50	0.02	0.02	ug/L
CE70271	$8260GWR	1,2-Dibromoethane	MA / GROUNDWATER STANDARDS / GW-1	ND	0.50	0.02	0.02	ug/L
CE70271	$MCPADD-WM	1,4-Dioxane	MA / CMR 310.40.1600 / GW-1 (mg/l)	ND	50	3	3	ug/L
CE70271	$MCPADD-WM	1,4-Dioxane	MA / GROUNDWATER STANDARDS / GW-1	ND	50	0.3	0.3	ug/L

MassDEP Analytical Protocol Certification Form

Laboratory Name: Phoenix Environmental Laboratories, Inc. **Project #:**

Project Location: BEACH MONT REVERE **RTN:**

This Form provides certifications for the following data set: [list Laboratory Sample ID Number(s)]

CE70270, CE70271

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

CAM Protocol (check all that apply below)

8260 VOC CAM II A ☑	7470/7471 Hg CAM III B ☑	MassDEP VPH CAM IV A ☐	8081 Pesticides CAM V B ☐	7196 Hex Cr CAM VI B ☐	MassDEP APH CAM IX A ☐
8270 SVOC CAM II B ☑	7010 Metals CAM III C ☐	MassDEP EPH CAM IV B ☐	8151 Herbicides CAM V C ☐	8330 Explosives CAM VIII A ☐	TO-15 VOC CAM IX B ☐
6010 Metals CAM III A ☑	6020 Metals CAM III D ☐	8082 PCB CAM V A ☐	9012 Total Cyanide/PAC CAM V1 A ☐	6860 Perchlorate CAM VIII B ☐	

Affirmative responses to questions A through F are required for "Presumptive Certainty" status

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

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

G	Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocol(s)?	☐ Yes ☑ No

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

H	Were all QC performance standards specified in the CAM protocol(s) achieved? See Sections: SVOA, SVOASIM, VOA Narrations .	☐ Yes ☑ No
I	Were results reported for the complete analyte list specified in the selected CAM protocol(s)?	☐ Yes ☑ No

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

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

Authorized Signature: Rashmi Makol

Date: Wednesday, January 15, 2020

Printed Name: Rashmi Makol

Position: Project Manager

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

ACCREDITED IN ACCORDANCE WITH nelac NY # 11301

MCP Certification Report

January 15, 2020

SDG I.D.: GCE70270

SDG Comments

Metals Analysis:
The client requested a site specific list of elements which is shorter than the 6010 MCP list.

8260 Analysis:
1,2-Dibromoethane doesn't meet GW-1 criteria, this compound is analyzed by GC/FID to achieve this criteria.

1,4-Dioxane doesn't meet GW-1 criteria, this compound is analyzed by 8270SIM to achieve this criteria.

Phoenix reporting levels may exceed those referenced in the CAM protocol. Please refer to criteria sheet for comparisons to requested MCP standards.

504.1

Were all QA/QC performance criteria specified in the MADEP document CAM achieved? Yes.

Instrument:

CHEM35 12/06/19-1 Chelsey Guerette, Chemist 12/06/19

CE70270

The initial calibration (CHEM35/504tcp_1206): RSD for the compound list was less than 20% except for the following compounds: None.
The continuing calibration %D for the compound list was less than 15% except for the following compounds:None.

QC (Batch Specific):

Batch 509108 (CE81798)

CE70270

All LCS recoveries were within 70 - 130 with the following exceptions: None.
All LCSD recoveries were within 70 - 130 with the following exceptions: None.
All LCS/LCSD RPDs were less than 25% with the following exceptions: None.
This batch consists of a Blank, LCS, LCSD and MS.

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

Cyanide Narration

Were all QA/QC performance criteria specified in the MADEP document CAM achieved? Yes.

Instrument:

LACHAT 12/05/19-1 Brian Sheriden, Greg Danielewski, Chemist 12/05/19

CE70270

The samples were distilled in accordance with the method.
The initial calibration met criteria.

The calibration check standards (ICV,CCV) were within 15% of true value and were analyzed at a frequencey of one per ten samples.
The continuing calibration blanks (ICB,CCB) had concentrations less than the reporting level.

The method blank, laboratory control sample (LCS), and matrix spike were distilled with the samples.

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
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ACCREDITED IN ACCORDANCE WITH nelac NY # 11301

MCP Certification Report

January 15, 2020

SDG I.D.: GCE70270

Cyanide Narration

QC (Batch Specific):

Batch 508635 (CE69161)

CE70270

All LCS recoveries were within 90 - 110 with the following exceptions: None.
Blank spike recovery was 106 %.
Additional soil criteria LCS acceptance range is 80-120% MS acceptance range 75-125%.

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

Hexavalent Chromium (Aqueous)

Were all QA/QC performance criteria specified in the MADEP document CAM achieved? Yes.

Instrument:

BECKMAN DU720 12/03/19-1 Dustin Harrison, Chemist 12/03/19

CE70270

The initial calibration met all criteria including a standard run at the reporting level.
All calibration verification standards (ICV, CCV) met criteria.
All calibration blank verification standards (ICB, CCB) met criteria.

QC (Batch Specific):

Batch 508626 (CE70457)

CE70270

All LCS recoveries were within 90 - 110 with the following exceptions: None.
Additional Hexavalent Chromium criteria: LCS acceptance range for waters is 90-110% and MS acceptance range is 85-115%.

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

Mercury Narration

Were all QA/QC performance criteria specified in the analytical method achieved? Yes.

Instrument:

MERLIN 12/04/19 07:36 Rick Schweitzer, Chemist 12/04/19

CE70270

The method preparation blank contains all of the acids and reagents as the samples; the instrument blanks do not.
The initial calibration met all criteria including a standard run at or below the reporting level.
All calibration verification standards (ICV, CCV) met criteria.
All calibration blank verification standards (ICB, CCB) met criteria.
The matrix spike sample is used to identify spectral interference for each batch of samples, if within 85-115%, no interference is

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Certification Report

January 15, 2020

SDG I.D.: GCE70270

Mercury Narration

observed and no further action is taken.
The following Initial Calibration Verification (ICV) compounds did not meet criteria: None.
The following Continuing Calibration Verification (CCV) compounds did not meet criteria: None.

QC (Batch Specific):

Batch 508678 (CE70572)

CE70270

All LCS recoveries were within 75 - 125 with the following exceptions: None.
Additional Mercury criteria: LCS acceptance range for waters is 80-120% and for soils is 75-125%

ICP Metals Narration

Were all QA/QC performance criteria specified in the analytical method achieved? Yes.

Instrument:

BLUE 12/04/19 08:45 Tina Hall, Chemist 12/04/19

CE70270

The initial calibration met criteria.
The continuing calibration standards met criteria for all the elements reported. The linear range is defined daily by the calibration range.
The continuing calibration blanks were less than the reporting level for the elements reported.
The ICSA and ICSAB were analyzed at the beginning and end of the run and were within criteria.The linear range is defined daily by the calibration range.
The following Initial Calibration Verification (ICV) compounds did not meet criteria: None.
The following Continuing Calibration Verification (CCV) compounds did not meet criteria: None.
The following ICP Interference Check (ICSAB) compounds did not meet criteria: None.

QC (Batch Specific):

Batch 508575 (CE69425)

CE70270

All LCS recoveries were within 75 - 125 with the following exceptions: None.
All LCSD recoveries were within 75 - 125 with the following exceptions: None.
All LCS/LCSD RPDs were less than 20% with the following exceptions: None.

LACHAT

Were all QA/QC performance criteria specified in the MADEP document CAM achieved? Yes.

Instrument:

LACHAT 12/05/19-3 Thomas Budz, Chemist 12/05/19

CE70270

The initial calibration met all criteria including a standard run at the reporting level.
All method verification standards and blanks met criteria.

QC (Batch Specific):

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NY # 11301

MCP Certification Report

January 15, 2020

SDG I.D.: GCE70270

LACHAT

Batch 509071 (CE70731)

CE70270

All LCS recoveries were within 90 - 110 with the following exceptions: None.

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

NITROGEN

Were all QA/QC performance criteria specified in the MADEP document CAM achieved? Yes.

Instrument:

LACHAT 12/04/19-1 Kandi Della Bella, Chemist 12/04/19

CE70270

The initial calibration met all criteria including a standard run at the reporting level.
All method verification standards and blanks met criteria.

QC (Batch Specific):

Batch 508585 (CE68684)

CE70270

All LCS recoveries were within 85 - 115 with the following exceptions: None.
Additional criteria: LCS acceptance range for waters is 85-115% and for soils is 75-125%. MS acceptance range is 75-125%.

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

PCB Narration

Were all QA/QC performance criteria specified in the MADEP document CAM achieved? Yes.

Instrument:

AU-ECD24 12/04/19-1 Saadia Chudary, Chemist 12/04/19

CE70270

The initial calibration (PC1125AI) RSD for the compound list was less than 20% except for the following compounds: None.
The initial calibration (PC1125BI) RSD for the compound list was less than 20% except for the following compounds: None.
The continuing calibration %D for the compound list was less than 15% except for the following compounds:None.

QC (Batch Specific):

Batch 508551 (CE69915)

CE70270

All LCS recoveries were within 40 - 140 with the following exceptions: None.
All LCSD recoveries were within 40 - 140 with the following exceptions: None.
All LCS/LCSD RPDs were less than 20% with the following exceptions: None.

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January 15, 2020

SDG I.D.: GCE70270

PCB Narration

A LCS and LCS Duplicate were performed instead of a matrix spike and matrix spike duplicate.

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

PHENOLS

Were all QA/QC performance criteria specified in the MADEP document CAM achieved? Yes.

Instrument:

LACHAT 12/09/19-1

CE70270

The initial calibration met all criteria including a standard run at the reporting level.
All method verification standards and blanks met criteria.

QC (Batch Specific):

Batch 508900 (CE70703)

CE70270

All LCS recoveries were within 90 - 110 with the following exceptions: None.

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

SVOA Narration

Were all QA/QC performance criteria specified in the MADEP document CAM achieved? No.

QC Batch 508558 (Samples: CE70270): -----

The LCS and/or the LCSD recovery is above the upper range for one or more analytes that were not reported in the sample(s), therefore no significant bias is suspected. (2-Nitroaniline)

The LCS and/or the LCSD recovery is below the method criteria. All of the other QC is acceptable, therefore no significant bias is suspected. (Aniline, Benzidine)

The LCS/LCSD RPD exceeds the method criteria for one or more analytes, but these analytes were not reported in the sample(s) so no variability is suspected. (1,2-Dichlorobenzene, 1,3-Dichlorobenzene, 2-Chlorophenol, Aniline, Benzoic acid, Bis(2-chloroethyl)ether, Bis(2-chloroisopropyl)ether, Hexachloroethane)

The LCS/LCSD RPD exceeds the method criteria for one or more surrogates, therefore there may be variability in the reported result. (% 2-Fluorophenol)

Instrument:

CHEM05 12/05/19-1 Matt Richard, Chemist 12/05/19

CE70270

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MCP Certification Report

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SDG I.D.: GCE70270

SVOA Narration

For 8270 full list, the DDT breakdown and pentachlorophenol & benzidine peak tailing were evaluated in the DFTPP tune and were found to be in control.
For 8270 BN list, benzidine peak tailing was evaluated in the DFTPP tune and was found to be in control.

Initial Calibration Evaluation (CHEM05/5_SPLIT_1115):
100% of target compounds met criteria.
The following compounds had %RSDs >20%: None.
The following compounds did not meet recommended response factors: 2-Nitrophenol 0.096 (0.1)
The following compounds did not meet a minimum response factors: None.

Continuing Calibration Verification (CHEM05/1205_07-5_SPLIT_1115) (MCP Compliance):
Internal standard areas were within 50 to 200% of the initial calibration with the following exceptions: None.
97% of target compounds met criteria.
The following compounds did not meet % deviation criteria: None.
The following compounds did not meet maximum % deviations: None.
The following compounds did not meet recommended response factors: None.
The following compounds did not meet minimum response factors: None.

QC (Batch Specific):

Batch 508558 (CE69275)

CE70270

All LCS recoveries were within 40 - 140 with the following exceptions: 2-Nitroaniline(161%)
All LCSD recoveries were within 40 - 140 with the following exceptions: 2-Nitroaniline(148%), Aniline(39%), Benzidine(<10%)
All LCS/LCSD RPDs were less than 20% with the following exceptions: % 2-Fluorophenol(27.3%), 1,2-Dichlorobenzene(23.5%), 1,3-Dichlorobenzene(21.3%), 2-Chlorophenol(21.8%), Aniline(39.2%), Benzoic acid(27.1%), Bis(2-chloroethyl)ether(25.0%), Bis(2-chloroisopropyl)ether(21.0%), Hexachloroethane(26.3%)
Additional 8270 criteria: 10% of compounds can be outside of acceptance criteria as long as recovery is at least 10%. (Acid surrogates acceptance range for aqueous samples: 10-110%, for soils 30-130%)

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

SVOA-Dioxane

Were all QA/QC performance criteria specified in the MADEP document CAM achieved? Yes.

Instrument:

CHEM22 12/05/19-1 Adam Werner, Chemist 12/05/19

CE70270

Initial Calibration Evaluation (CHEM22/DIOX_1111):
100% of target compounds met criteria.
The following compounds had %RSDs >20%: None.
The following compounds did not meet recommended response factors: None.
The following compounds did not meet a minimum response factors: None.

Continuing Calibration Verification (CHEM22/1205_04-DIOX_1111) (MCP Compliance):
Internal standard areas were within 50 to 200% of the initial calibration with the following exceptions: None.

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MCP Certification Report

January 15, 2020

SDG I.D.: GCE70270

SVOA-Dioxane

100% of target compounds met criteria.
The following compounds did not meet % deviation criteria: None.
The following compounds did not meet maximum % deviations: None.
The following compounds did not meet recommended response factors: None.
The following compounds did not meet minimum response factors: None.

QC (Batch Specific):

Batch 508591 (CE69269)

CE70270

All LCS recoveries were within 30 - 130 with the following exceptions: None.
All LCSD recoveries were within 30 - 130 with the following exceptions: None.
All LCS/LCSD RPDs were less than 20% with the following exceptions: None.

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

SVOASIM Narration

Were all QA/QC performance criteria specified in the MADEP document CAM achieved? No.

QC Batch 508558 (Samples: CE70270): -----

One or more analytes is below the method criteria. A low bias for these analytes is possible. (Hexachlorocyclopentadiene)

One or more surrogates is outside of criteria. (% 2,4,6-Tribromophenol)

The LCS and/or the LCSD recovery is above the upper range for one or more analytes that were not reported in the sample(s), therefore no significant bias is suspected. (Benzo(k)fluoranthene, Dibenz(a,h)anthracene)

The LCS and/or the LCSD recovery is below the method criteria. All of the other QC is acceptable, therefore no significant bias is suspected. (Pyridine)

The LCS/LCSD RPD exceeds the method criteria for one or more analytes, but these analytes were not reported in the sample(s) so no variability is suspected. (Pyridine)

The LCS/LCSD RPD exceeds the method criteria for one or more surrogates, therefore there may be variability in the reported result. (% 2-Fluorophenol)

Instrument:

CHEM25 12/05/19-1 Wes Bryon, Chemist 12/05/19

CE70270

For 8270 BN list, benzidine peak tailing was evaluated in the DFTPP tune and was found to be in control.

Initial Calibration Evaluation (CHEM25/25_SIM18_1118):
100% of target compounds met criteria.
The following compounds had %RSDs >20%: None.

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MCP Certification Report

January 15, 2020

SDG I.D.: GCE70270

SVOASIM Narration

The following compounds did not meet recommended response factors: None.
The following compounds did not meet a minimum response factors: None.

Continuing Calibration Verification (CHEM25/1205_03-25_SIM18_1118) (MCP Compliance):
Internal standard areas were within 50 to 200% of the initial calibration with the following exceptions: None.
100% of target compounds met criteria.
The following compounds did not meet % deviation criteria: None.
The following compounds did not meet maximum % deviations: None.
The following compounds did not meet recommended response factors: None.
The following compounds did not meet minimum response factors: None.

QC (Batch Specific):

Batch 508558 (CE69275)

CE70270

All LCS recoveries were within 40 - 140 with the following exceptions: Hexachlorocyclopentadiene(38%)
All LCSD recoveries were within 40 - 140 with the following exceptions: % 2,4,6-Tribromophenol(121%), Benzo(k)fluoranthene(147%), Dibenz(a,h)anthracene(146%), Hexachlorocyclopentadiene(35%), Pyridine(28%)
All LCS/LCSD RPDs were less than 20% with the following exceptions: % 2-Fluorophenol(24.1%), Pyridine(40.0%)
Additional 8270 criteria: 10% of compounds can be outside of acceptance criteria as long as recovery is at least 10%. (Acid surrogates acceptance range for aqueous samples: 10-110%, for soils 30-130%)

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

VOA Narration

Were all QA/QC performance criteria specified in the MADEP document CAM achieved? No.

QC Batch 508771 (Samples: CE70270, CE70271): -----

The LCS/LCSD RPD exceeds the method criteria for one or more analytes, but these analytes were not reported in the sample(s) so no variability is suspected. (Acetone, Methyl ethyl ketone)

Instrument:

CHEM17 12/03/19-2 Michael Hahn, Chemist 12/03/19

CE70270, CE70271

Initial Calibration Evaluation (CHEM17/VT-S112019):
94% of target compounds met criteria.
The following compounds had %RSDs >20%: 1,2-Dibromo-3-chloropropane 33% (20%), Bromoform 23% (20%), Naphthalene 26% (20%), Styrene 26% (20%), trans-1,4-dichloro-2-butene 24% (20%)
The following compounds did not meet recommended response factors: 1,2-Dibromo-3-chloropropane 0.034 (0.05), 2-Hexanone 0.085 (0.1), Acetone 0.048 (0.1), Bromoform 0.068 (0.1), Methyl ethyl ketone 0.070 (0.1), Tetrahydrofuran (THF) 0.038 (0.05)
The following compounds did not meet a minimum response factors: None.

Continuing Calibration Verification (CHEM17/1203_08-VT-S112019) (MCP Compliance):
Internal standard areas were within 50 to 200% of the initial calibration with the following exceptions: None.
93% of target compounds met criteria.

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MCP Certification Report

January 15, 2020

SDG I.D.: GCE70270

VOA Narration

The following compounds did not meet % deviation criteria: None.
The following compounds did not meet maximum % deviations: None.
The following compounds did not meet recommended response factors: 1,2-Dibromo-3-chloropropane 0.034 (0.05), 2-Hexanone 0.064 (0.1), 4-Methyl-2-pentanone 0.092 (0.1), Acetone 0.034 (0.1), Acrylonitrile 0.044 (0.05), Bromoform 0.072 (0.1), Methyl ethyl ketone 0.054 (0.1), Tetrahydrofuran (THF) 0.030 (0.05)
The following compounds did not meet minimum response factors: None.

QC (Batch Specific):

Batch 508771 (CE70331) CHEM17 12/3/2019-2

CE70270, CE70271

All LCS recoveries were within 70 - 130 with the following exceptions: None.
All LCSD recoveries were within 70 - 130 with the following exceptions: None.
All LCS/LCSD RPDs were less than 30% with the following exceptions: Acetone(38.9%), Methyl ethyl ketone(40.0%)
A LCS and LCS Duplicate were performed instead of a matrix spike and matrix spike duplicate.
Additional 8260 criteria: 10% of compounds can be outside of acceptance criteria as long as recovery is 10%.

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

VOA-OXY Narration

Were all QA/QC performance criteria specified in the MADEP document CAM achieved? Yes.

Instrument:

CHEM17 12/03/19-1 Michael Hahn, Chemist 12/03/19

CE70270

Initial Calibration Evaluation (CHEM17/OXY1114):
100% of target compounds met criteria.
The following compounds had %RSDs >20%: None.
The following compounds did not meet recommended response factors: None.
The following compounds did not meet a minimum response factors: None.

Continuing Calibration Verification (CHEM17/1203_07-OXY1114) (MCP Compliance):
Internal standard areas were within 50 to 200% of the initial calibration with the following exceptions: None.
90% of target compounds met criteria.
The following compounds did not meet % deviation criteria: None.
The following compounds did not meet maximum % deviations: None.
The following compounds did not meet recommended response factors: None.
The following compounds did not meet minimum response factors: None.

QC (Batch Specific):

Batch 508770 (CE70270) CHEM17 12/3/2019-1

CE70270

All LCS recoveries were within 70 - 130 with the following exceptions: None.
All LCSD recoveries were within 70 - 130 with the following exceptions: None.
All LCS/LCSD RPDs were less than 30% with the following exceptions: None.

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MCP Certification Report

January 15, 2020

SDG I.D.: GCE70270

VOA-OXY Narration

A blank MS/MSD was analyzed with this batch.

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

Cooler: Yes ☒ No ☐
Coolant: IPK ☒ ICE ☐ No ☐
Temp 2.1 °C Pg of

PHOENIX
Environmental Laboratories, Inc.

CHAIN OF CUSTODY RECORD

587 East Middle Turnpike, P.O. Box 370, Manchester, CT 06040
Email: info@phoenixlabs.com Fax (860) 645-0823
Client Services (860) 645-8726

Data Delivery/Contact Options:
☐ Fax:
☐ Phone:
☐ Email:

Customer: Terra Environmental
Address: 159 Haven St, Reading, MA

Project: Beachmont, Revere
Report to: Terra
Invoice to: Terra
QUOTE #

Project P.O: 19-125

This section MUST be completed with Bottle Quantities.

Client Sample - Information - Identification

Sampler's Signature: [signature] Date: 12/2/19

Matrix Code:
DW=Drinking Water **GW**=Ground Water **SW**=Surface Water **WW**=Waste Water
RW=Raw Water **SE**=Sediment **SL**=Sludge **S**=Soil **SD**=Solid **W**=Wipe **OIL**=Oil
B=Bulk **L**=Liquid **X** = _____(Other)

Analysis Request: NPDES RGP

PHOENIX USE ONLY SAMPLE #	Customer Sample Identification	Sample Matrix	Date Sampled	Time Sampled	GL Amber 8 oz. w/H3PO4	Soil VOA Vials [ ] methanol [ ] H2O	GL Soil container [ ] methanol [ ] H2O	GL Soil container ( ) oz	40 ml VOA Vial [6] As is [ ] HCl	GL Amber 1000ml [1] As is [ ] H2SO4	PL As is [ ] 250ml [1] 500ml [ ] 1000ml	PL H2SO4 [1] 250ml [1] 500ml [ ] 500ml	PL HNO3 250ml	PL NaOH 250ml	Bacteria Bottle w/thio	Bacteria Bottle as is	Total
70270	P-4	GW	12/2/19	1200	X				9	5	1	1	1	1			
70271	Trip Blank				X				3								
																	21

Relinquished by:	Accepted by:	Date:	Time:
[signature]	[signature]	12-3-19	11:20
[signature]	Kristal Hall	12/3/19	14:32

Comments, Special Requirements or Regulations:

Turnaround Time:
☐ 1 Day*
☐ 2 Days*
☐ 3 Days*
☒ Standard
☐ Other
* SURCHARGE APPLIES

RI
☐ (Residential) Direct Exposure
☐ (Comm/Industrial) Direct Exposure
☐ GA Leachability
☐ GB Leachability
☐ GA-GW Objectives
☐ GB-GW Objectives

CT
☐ RCP Cert
☐ GW Protection
☐ SW Protection
☐ GA Mobility
☐ GB Mobility
☐ Residential DEC
☐ I/C DEC
☐ Other

MA
☒ MCP Certification
☒ GW-1 ☐ MWRA eSMART
☒ GW-2
☐ GW-3
☐ S-1 GW-1 ☐ S-1 GW-2 ☐ S-1 GW-3
☐ S-2 GW-1 ☐ S-2 GW-2 ☐ S-2 GW-3
☐ S-3 GW-1 ☐ S-3 GW-2 ☐ S-3 GW-3
☐ SW Protection

State where samples were collected: MA

Data Format
☒ Excel
☒ PDF
☐ GIS/Key
☐ EQuIS
☐ Other

Data Package
☐ Tier II Checklist
☐ Full Data Package*
☐ Phoenix Std Report
☐ Other
* SURCHARGE APPLIES

Makrina Nolan

Subject: GCE70270

From: Philip Peterson [mailto:ppeterson@terra-env.com]
Sent: Wednesday, December 4, 2019 11:05 AM
To: Makrina Nolan; Andres Gallego; Christopher M. Ragnelli; James McMullen; Jesse Vaughan
Subject: Re: Beachmont, Revere

Please analyze.

Thanks, Phil

Philip M. Peterson, LSP
TERRA Environmental, LLC
T: 781-944-6851
M: 781-417-0589
Email: ppeterson@terra-env.com
Website: www.terra-env.com

From: Makrina Nolan <Makrina@phoenixlabs.com>
Date: Wednesday, December 4, 2019 at 11:03 AM
To: "Andres F. Gallego" <agallego@terra-env.com>, "Christopher M. Ragnelli" <cragnelli@terra-env.com>, James McMullen <jmcmullen@terra-env.com>, Jesse Vaughn <jvaughan@terra-env.com>, "Philip M. Peterson, LSP" <ppeterson@terra-env.com>
Subject: Beachmont, Revere

Good morning,

We received your samples yesterday, with regards to the attached chain. Unfortunately, “P-4” was received past hold for HexChrome.

Please let me know if you would like this reported past hold.

Thank you,

Makrina Nolan
Client Service –Project Manager
Drinking Water Specialist
Phoenix Environmental Labs
587 Middle Turnpike East

Manchester, CT
Direct Line: 860-645-3219
Website: www.phoenixlabs.com

Sarah Bell

Subject: FW: Sample Release

From: Christopher M. Ragnelli [mailto:cragnelli@terra-env.com]
Sent: Monday, January 13, 2020 2:58 PM
To: Sarah Bell
Subject: RE: Sample Release

Can you add pH to the second sample CE88383?

From: Sarah Bell <sarah@phoenixlabs.com>
Sent: Monday, January 13, 2020 2:10 PM
To: Christopher M. Ragnelli <cragnelli@terra-env.com>
Cc: Philip Peterson <ppeterson@terra-env.com>; James McMullen <jmcmullen@terra-env.com>; Jesse Vaughan <jvaughan@terra-env.com>
Subject: RE: Sample Release

We don't have sample for 70270 I can get Hardness on that one.
Alkalinity I can't get you on 70270

From: Christopher M. Ragnelli [mailto:cragnelli@terra-env.com]
Sent: Monday, January 13, 2020 1:59 PM
To: Sarah Bell
Cc: Philip Peterson; James McMullen; Jesse Vaughan
Subject: Sample Release

Hi Sarah,

Please add Hardness as CaCO3 to samples CE70270 and CE88383. Please release asap.

Also, should we have added that separately to the COC? We put down NPDES RGP parameters, which Hardness is included.

If you have any questions or require additional information please don't hesitate to call me.

Thank you

Christopher Ragnelli, Project Engineer
TERRA Environmental, LLC
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Reading, MA 01867
P: 781-944-6851
M: 781-330-3430
Email: cragnelli@terra-env.com
Website: www.terra-env.com