Proactive by Design

GEOTECHNICAL
ENVIRONMENTAL
ECOLOGICAL
WATER
CONSTRUCTION MANAGEMENT

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July 22, 2020
File No. 02.0174659.00

United States Environmental Protection Agency – Region 1
1 Congress Street, Suite 1100
Boston, Massachusetts 02114-2023

Attention: Ms. Shauna Little

Re: Submittal of Notice of Intent (NOI)
Remediation General Permit (RGP)
Rustcraft Road Sewer Improvement Project
Dedham, Massachusetts

Dear Ms. Little:

GZA GeoEnvironmental, Inc. (GZA), on behalf the Town of Dedham is submitting the attached Notice of Intent (NOI; Appendix A) for a Remediation General Permit (RGP) for the Rustcraft Road Sewer Improvement Project (the Site). The NOI and RGP are required for dewatering activities due to the presence of a Massachusetts Department of Environmental Protection (MassDEP) disposal site located near a portion of the project area with documented impacts of inorganics and semi-volatile organic compounds to groundwater.

BACKGROUND

The scope of work includes construction of approximately 4,900 linear feet of 10-inch DI force main, 3 force main cleanout manholes, 1 air release valve, replacing existing pumps, and increasing all 6-inch DI piping, valves and appurtenances to 10-inch DI piping, valves and appurtenances at the Rustcraft Road pump station.

The work also includes the removal, segregation, and disposal of impacted materials to be determined, if encountered.

A portion of the Site is subject to a Massachusetts Contingency Plan (MCP) Utility Release Abatement Measure (URAM). The RGP is associated with the portion of the site being managed under the URAM, MassDEP Release Tracking Number (RTN) 3-36237. Based on reviewed information, the identified impacts to soil and groundwater in the area of the URAM include lead, iron, arsenic and trichloroethylene.

NOTICE OF INTENT

GZA is submitting this NOI to request authorization for dewatered groundwater from the Site to be discharged to a wetland following treatment. The wetland drains to an unknown culverted stream, ultimately discharging to the Charles River.

A Best Management Practices Plan (BMPP), meeting the requirements of the RGP, has been prepared and will be posted at the Site and implemented during the time-period that temporary dewatering is occurring at the Site.

This NOI application includes the following items:

- Laboratory analytical results of the influent source and receiving water are included as Appendix B;
- Calculation sheets for establishing effluent limitations are included as Appendix C;
- Review of Areas of Critical Environmental Concern (ACEC) indicate that the proposed discharge does not go to an ACEC. Review of Federally Listed Endangered and Threatened Species in Massachusetts indicate that a Northern Long-eared Bat habitat is located state-wide but is not likely to be present at the Site. Review of the U.S. Fish and Wildlife's online Information for Planning and Consultation (IPaC) service, indicates that federally listed species were not likely to be present within the action area of site activities (see Appendix D);
- Review of the Massachusetts Geographic Information Systems (MassGIS) DEP Priority Resources Map of Dedham shows that there are no ACECs and no habitats for Species of Special Concern or Threatened or Endangered Species within 500 feet of the subject site. Therefore, permit eligibility meets "Criterion A";
- Review of the electronic Massachusetts Cultural Resource Information System database, made available through Massachusetts Historical Commission, found that the are no properties listed or eligible for listing on the National Registry of Historic Places under the National Historic Preservation Act. Therefore, there will be no impact associated with this discharge to such properties. The documentation of this review can be found in Appendix E.

Please do not hesitate to contact the undersigned at (781) 278-3700 if you have any questions or require further information.

Very truly yours,
GZA GEOENVIRONMENTAL, INC.

William Davis
Assistant Project Manager

Adam C. Swederskas
Senior Project Manager

Enclosures:

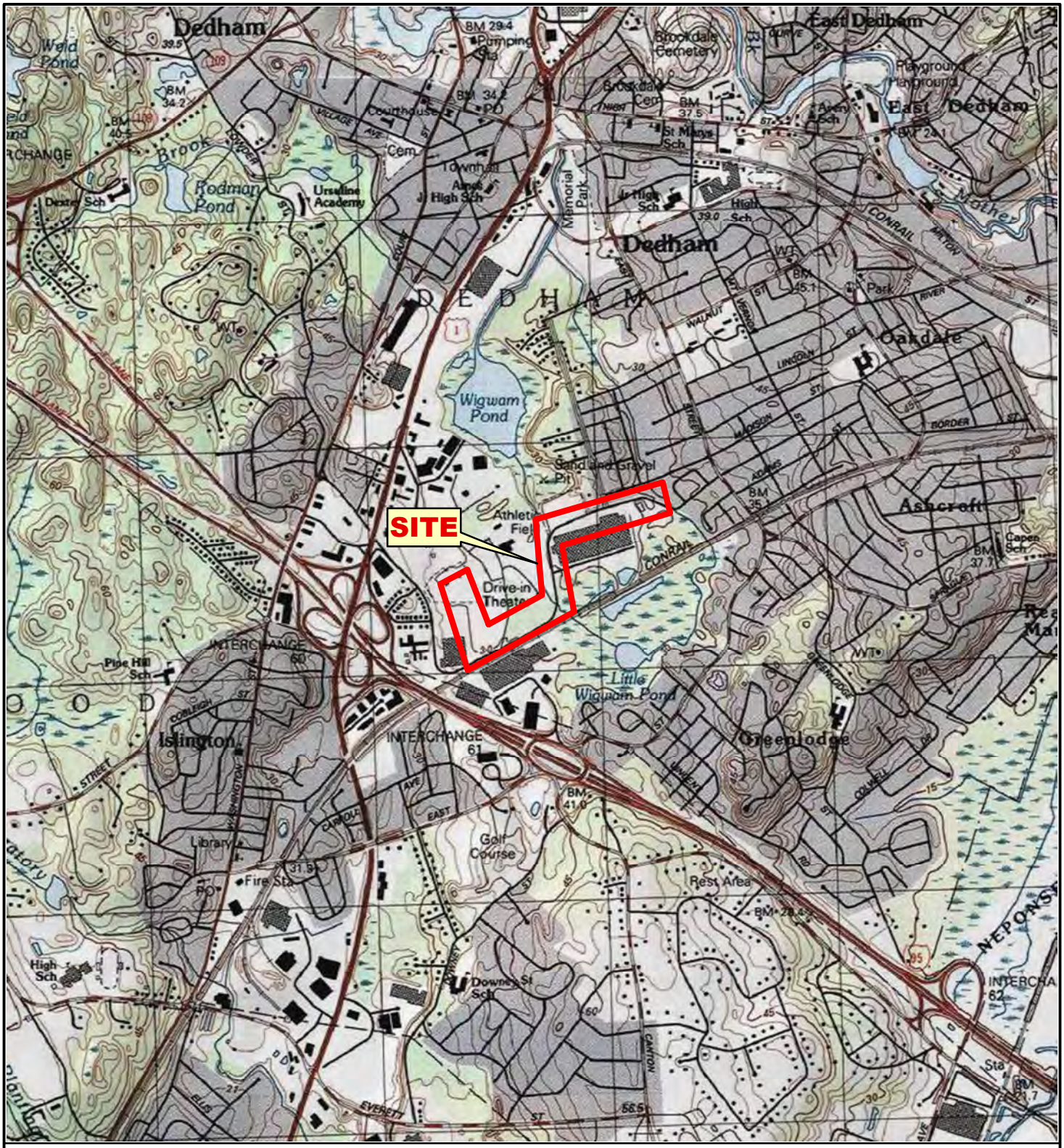
Figures:
Figure 1 - Site Locus Map
Figure 2 – Site Drainage Plan
Figure 3 – Groundwater Treatment System Process Flow Diagram
Figure 4 – Site Scoring Map Showing 500 Foot & ½ Mile Radii
Figure 5 – Site Plan

Appendices: Appendix A - Notice of Intent Form
Appendix B – Influent and Receiving Water Laboratory Analytical Reports
Appendix C – Calculation Sheets for Effluent Limitations
Appendix D – ACEC and Federally Listed Endangered and Threatened Species in Massachusetts Evaluation
Appendix E – MACRIS Search Results

K:\174659\174659-00.ACS\RGP\Cover Letter\NOI Cover Letter July2020.docx

FIGURE 1

Site Locus Map



SOURCE : THIS MAP CONTAINS THE ESRI ARCGIS ONLINE USA TOPOGRAPHIC MAP SERVICE, PUBLISHED JUNE 19, 2019 BY ESRI ARCIMS SERVICES AND UPDATED AS NEEDED. THIS SERVICE USES UNIFORM NATIONALLY RECOGNIZED DATUM AND CARTOGRAPHY STANDARDS AND A VARIETY OF AVAILABLE SOURCES FROM SEVERAL DATA PROVIDERS.

Data Supplied by : esri

0 1,000 2,000 4,000 6,000

SCALE IN FEET

N W E S

PROJ. MGR.: ACS
DESIGNED BY: JJS
REVIEWED BY: BWR
OPERATOR: EMD

DATE: 05-11-2020

SITE LOCUS

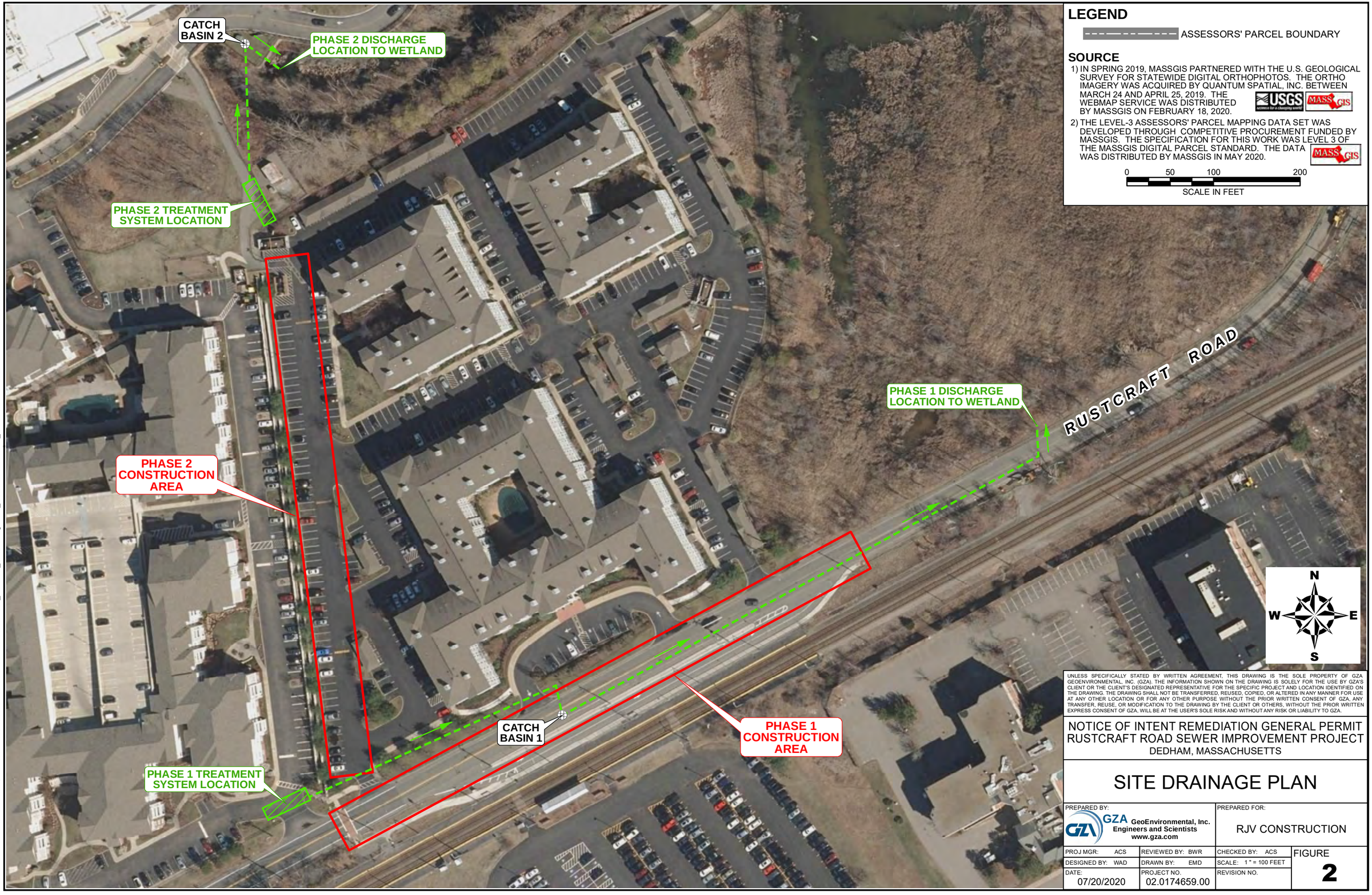
RUSTCRAFT ROAD SEWER IMPROVEMENTS, CONTRACT 20-1
DEDHAM, MASSACHUSETTS

JOB NO. 02.0174659.00

FIGURE NO. 1

FIGURE 2

Site Drainage Plan



LEGEND

ASSESSORS' PARCEL BOUNDARY

SOURCE

1) IN SPRING 2019, MASSGIS PARTNERED WITH THE U.S. GEOLOGICAL SURVEY FOR STATEWIDE DIGITAL ORTHOPHOTOS. THE ORTHO IMAGERY WAS ACQUIRED BY QUANTUM SPATIAL, INC. BETWEEN MARCH 24 AND APRIL 25, 2019. THE WEBMAP SERVICE WAS DISTRIBUTED BY MASSGIS ON FEBRUARY 18, 2020.

2) THE LEVEL-3 ASSESSORS' PARCEL MAPPING DATA SET WAS DEVELOPED THROUGH COMPETITIVE PROCUREMENT FUNDED BY MASSGIS. THE SPECIFICATION FOR THIS WORK WAS LEVEL 3 OF THE MASSGIS DIGITAL PARCEL STANDARD. THE DATA WAS DISTRIBUTED BY MASSGIS IN MAY 2020.

0 50 100 200

SCALE IN FEET

NOTICE OF INTENT REMEDIATION GENERAL PERMIT RUSTCRAFT ROAD SEWER IMPROVEMENT PROJECT

DEDHAM, MASSACHUSETTS

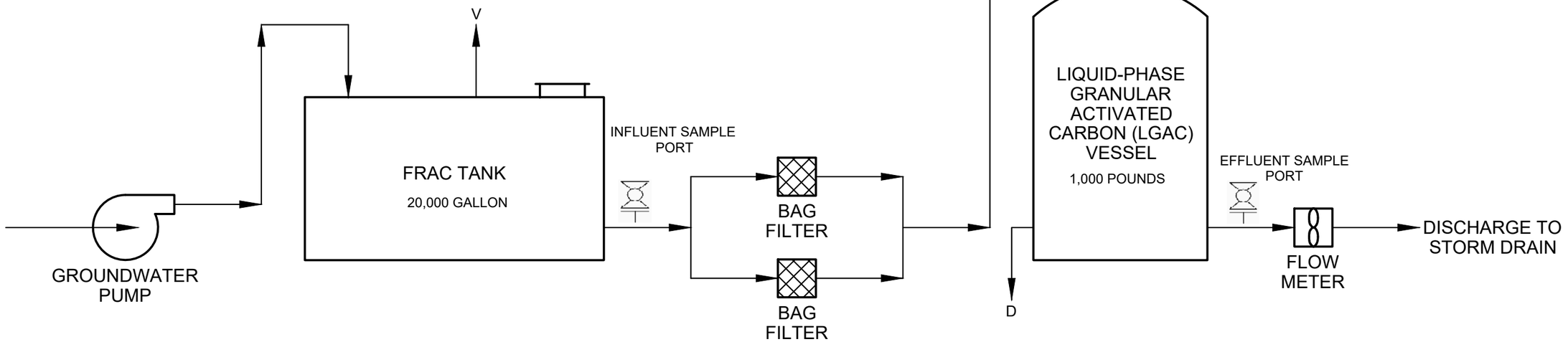
SITE DRAINAGE PLAN

PREPARED BY: GZA GeoEnvironmental, Inc. Engineers and Scientists www.gza.com		PREPARED FOR: RJV CONSTRUCTION	
PROJ MGR: ACS	REVIEWED BY: BWR	CHECKED BY: ACS	FIGURE 2
DESIGNED BY: WAD	DRAWN BY: EMD	SCALE: 1 " = 100 FEET	
DATE: 07/20/2020	PROJECT NO. 02.0174659.00	REVISION NO.	

FIGURE 3

Groundwater Treatment System

Process Flow Diagram



NOTICE OF INTENT REMEDIATION GENERAL PERMIT
RUSTCRAFT ROAD SEWER IMPROVEMENT PROJECT
DEDHAM, MASSACHUSETTS

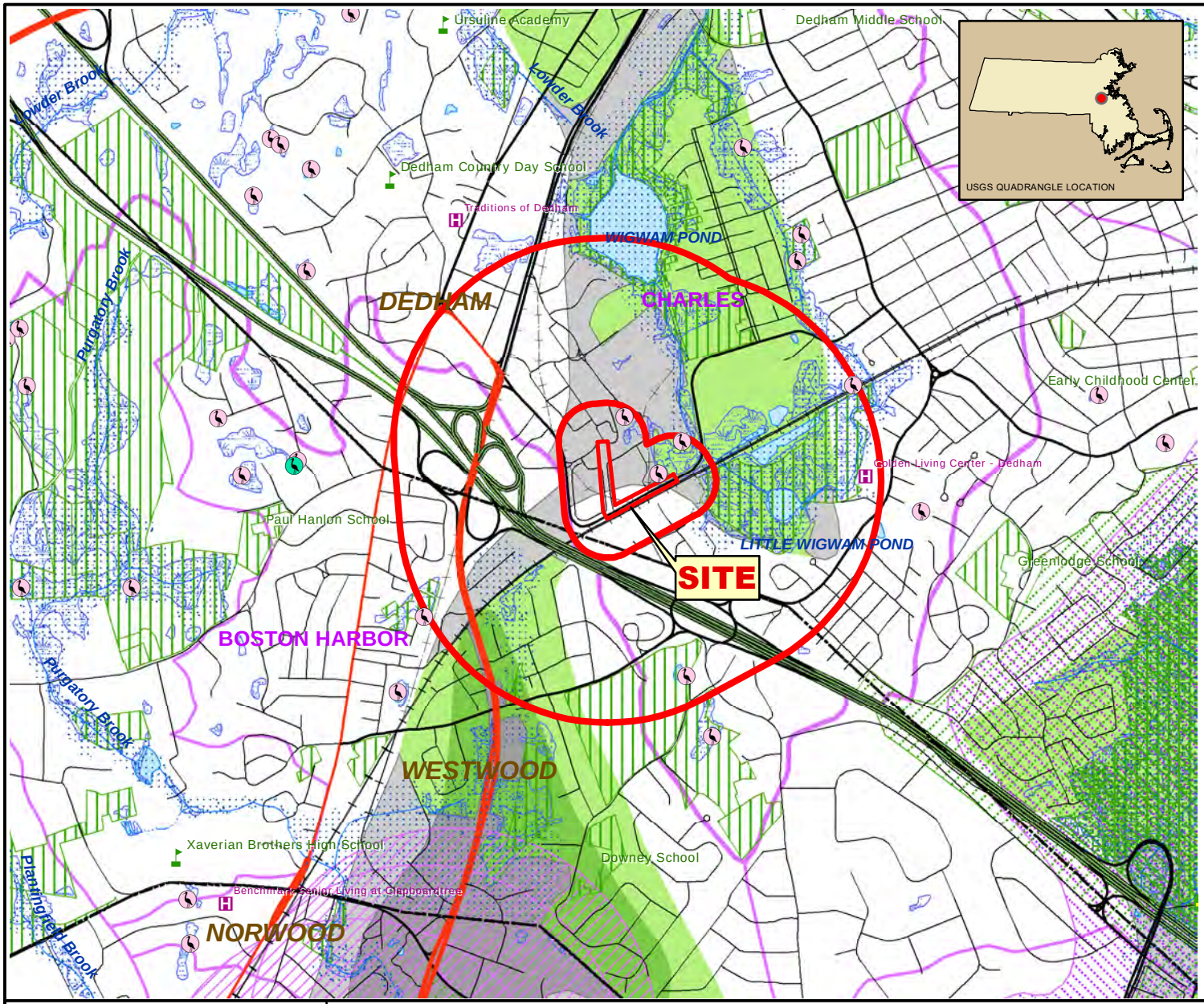
TREATMENT SYSTEM PROCESS FLOW DIAGRAM

PREPARED BY: GZA GeoEnvironmental, Inc. Engineers and Scientists www.gza.com		PREPARED FOR: RJV CONSTRUCTION	
PROJ MGR: ACS	REVIEWED BY: BWR	CHECKED BY: ACS	FIGURE 3
DESIGNED BY: WAD	DRAWN BY: EMD	SCALE: N.T.S.	
DATE: 07-20-2020	PROJECT NO. 02.0174659.00	REVISION NO.	

FIGURE 4

Site Scoring Map

500 Foot and ½ Mile Radii



DEP MCP 21e LEGEND

- Public Water Supply Well: Community GW, Community SW, Emergency SW, Non-Community
- Zone II's
- Interim Wellhead Protection Areas (IWPA's)
- Zone A
- Sole Source Aquifers
- Solid Waste Sites
- Protected Openspace
- Areas of Critical Environmental Concern
- NHESP Estimated Habitats of Rare Wildlife: Use with MA Wetlands Protection Act (310 CMR 10.12)
- NHESP Priority Habitats of State-Listed Rare Species: Use with MA Wetlands Protection Act (310 CMR 10.12)
- NHESP Vernal Pools: Certified, Potential
- Drainage Subbasins
- Massachusetts Major Basins
- MassDEP Regions
- Town Boundaries
- County Boundaries

Aquifers, By Yield

- High Yield - Potential Source
- Medium Yield - Potential Source
- Low Yield - Potential Source

Non-Potential Drinking Water Souce Area

- High Yield - Non Potential Source
- Medium Yield - Non Potenital Source

FEMA Floodplains

- 100 Year Floodplain

Hydrography

- Lake, Pond, Wide River, Impoundment
- Reservoir (with PWSID)
- Wetlands: Marsh, Wooded Swamp
- Saltwater Wetlands; Cranberry Bog
- Tidal Flats, Shoals

Rivers and Streams

- Stream
- Intermittent Stream
- Shoreline
- Man-Made Shoreline
- Dam

EOT-OTP Roads, Transmission Lines

- Limited Access Highway
- Multi-Lane Highway, Unlimited Access
- Other Numbered Highway
- Major Road - Connector
- Minor Street or Road
- Railroad Lines
- Aqueducts
- Powerline
- Pipeline
- Airport
- Track
- Trail

Source Data Supplied by MassGIS (June 2020)

N W E S

0 1,000 2,000

SCALE IN FEET

SITE SCORING MAP SHOWING 500 FOOT & 1/2 MILE RADII

NOTICE OF INTENT REMEDIATION GENERAL PERMIT
RUSTCRAFT ROAD SEWER IMPROVEMENT PROJECT
DEDHAM, MASSACHUSETTS

GZA GeoEnvironmental, Inc.
Engineers and Scientists
www.gza.com

JOB NO. 174659.00

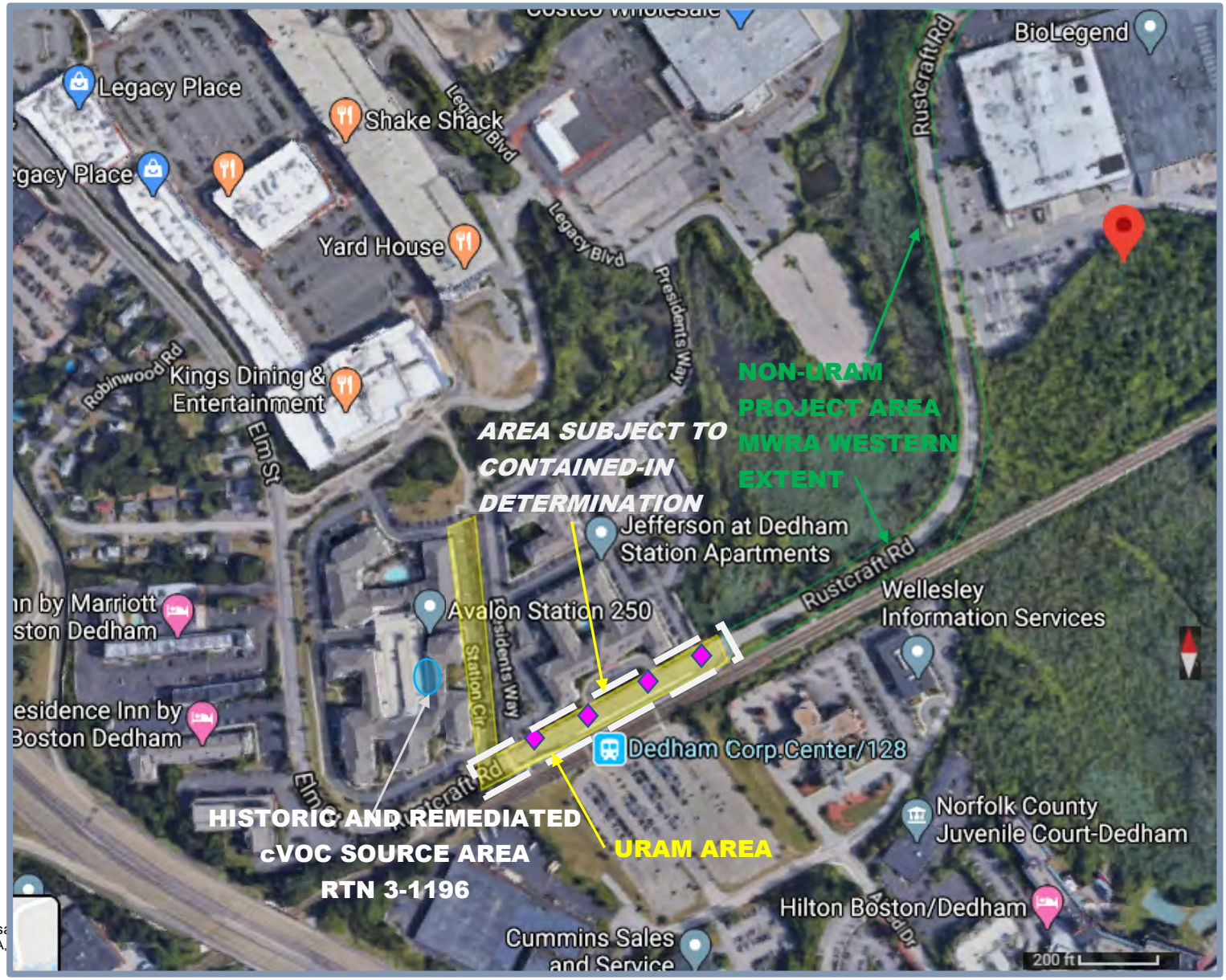
PROJ. MGR.: SJB
DESIGNED BY.: AMS
REVIEWED BY.: GWM
OPERATOR.: EMD
DATE: 07-20-2020

FIGURE NO. 4

FIGURE 5
Site Plan

♦ PROPOSED TEST PIT LOCATION

SK-01: PROJECT AREA SKETCH



NOTE: SKETCH IS FOR GRAPHICAL PURPOSES ONLY, ALL LOCATIONS ARE APPROXIMATE AND NOT TO SCALE.

APPENDIX A

NOTICE OF INTENT FORM

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:
Rustcraft Road - Sewer Improvements</td><td colspan="3">Site address: Rustcraft Road
Street: Rustcraft Road</td></tr>
<tr><td>City: Dedham</td><td>State: MA</td><td>Zip: 02026</td></tr>
<tr><td rowspan="4">2. Site owner
Town of Dedham

Owner is (check one): ☐ Federal ■ State/Tribal ☐ Private
☐ Other; if so, specify:</td><td colspan="3">Contact Person: Jason Mammone</td></tr>
<tr><td colspan="2">Telephone: 781-751-9350</td><td>Email: jmammone@dedhan-ma.gov</td></tr>
<tr><td colspan="3">Mailing address:
Street: 55 River</td></tr>
<tr><td>City: Dedham</td><td>State: MA</td><td>Zip: 02026</td></tr>
<tr><td rowspan="4">3. Site operator, if different than owner
RJV Construction Corp</td><td colspan="3">Contact Person: Matthew DeLuca</td></tr>
<tr><td colspan="2">Telephone: 781-831-8036</td><td>Email:</td></tr>
<tr><td colspan="3">Mailing address:
Street: 21 Lincoln Street</td></tr>
<tr><td>City: Canton</td><td>State: MA</td><td>Zip: 02021</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): 3-36237, 3-1196
☐ 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):
Wetlands to unclassified culverted stream to Charles River	MA 72-07	B

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. Pathogens and nutrients

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.	NA

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: email dated 7/3/2020

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: lead, arsenic, barium, copper, iron, chromium III, zinc, benzo (ghi) perylene, chrysene, pyrene	
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): Two catch basins to wetlands to unclassified culverted stream to Charles River	Outfall location(s): (Latitude, Longitude) CB-1 42°13’40.61”N, 71°10’20.05”W Discharge 1 42°13’41.63”N, 71°10’19.79”W CB-2 42°13’45.85”N, 71°10’31.84”W Discharge 2 42°13’45.60”N, 71°10’31.70”W
Discharges enter the receiving water(s) via (check any that apply): ☐ Direct discharge to the receiving water ■ Indirect discharge, if so, specify: ☐ 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): August 2020 through July 2021 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="4">☐ 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		✔	1	35.01	0.05	1.2		Report mg/L	---
Chloride		✔	1	SM4500	60,000	536,000		Report µg/l	---
Total Residual Chlorine	✔		1	SM4500	0.02	<0.02		0.2 mg/L	
Total Suspended Solids		✔	1	SM4500	10	100		30 mg/L	---
Antimony	✔		1	6010D	5	<5		206 µg/L	
Arsenic		✔	1	6010D	4	8		104 µg/L	
Cadmium	✔		1	6010D	1	<1		10.2 µg/L	
Chromium III		✔	1	3500	1	4		323 µg/L	
Chromium VI	✔		1	6010D	10	<10		323 µg/L	
Copper		✔	1	6010D	5	12		242 µg/L	
Iron		✔	1	6010D	10	16,900		5,000 µg/L	
Lead		✔	1	6010D	2	15		160 µg/L	
Mercury	✔		1	7470A	0.2	<0.2		0.739 µg/L	
Nickel		✔	1	6010D	1	3		1,450 µg/L	
Selenium	✔		1	6010D	10	<10		235.8 µg/L	
Silver	✔		1	6010D	1	<1		35.1 µg/L	
Zinc		✔	1	6010D	4	27		420 µg/L	
Cyanide	✔		1	9010C/901	0.10	<0.10		178 mg/L	
B. Non-Halogenated VOCs									
Total BTEX	✔		1	624.1	0.5	<0.5		100 µg/L	---
Benzene	✔		1	624.1	0.5	<0.5		5.0 µg/L	---
1,4 Dioxane	✔		1	8280D	0.20	<0.20		200 µg/L	---
Acetone	✔		1	624.1	0.005	<0.005		7.97 mg/L	---
Phenol	✔		1	420.4	15	<15		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	✔		1	624.1	0.50	<0.50		4.4 µg/L	
1,2 Dichlorobenzene	✔		1	624.1	0.50	<0.50		600 µg/L	---
1,3 Dichlorobenzene	✔		1	624.1	0.50	<0.50		320 µg/L	---
1,4 Dichlorobenzene	✔		1	624.1	0.50	<0.50		5.0 µg/L	---
Total dichlorobenzene	✔		1	624.1	0.50	<0.50		763 µg/L in NH	---
1,1 Dichloroethane	✔		1	624.1	0.50	<0.50		70 µg/L	---
1,2 Dichloroethane	✔		1	624.1	0.50	<0.50		5.0 µg/L	---
1,1 Dichloroethylene	✔		1	624.1	0.50	<0.50		3.2 µg/L	---
Ethylene Dibromide	✔		1	624.1	0.50	<0.50		0.05 µg/L	---
Methylene Chloride	✔		1	624.1	0.50	<0.50		4.6 µg/L	---
1,1,1 Trichloroethane	✔		1	624.1	0.50	<0.50		200 µg/L	---
1,1,2 Trichloroethane	✔		1	624.1	0.50	<0.50		5.0 µg/L	---
Trichloroethylene	✔		1	624.1	0.50	<0.50		5.0 µg/L	---
Tetrachloroethylene	✔		1	624.1	0.50	<0.50		5.0 µg/L	
cis-1,2 Dichloroethylene	✔		1	624.1	0.50	<0.50		70 µg/L	---
Vinyl Chloride	✔		1	624.1	0.50	<0.50		2.0 µg/L	---
D. Non-Halogenated SVOCs									
Total Phthalates	✔		1	8270D	4.7	<4.7		190 µg/L	
Diethylhexyl phthalate	✔		1	8270D	4.7	<4.7		101 µg/L	
Total Group I PAHs		✔	1	625.1	0.05	0.08		1.0 µg/L	---
Benzo(a)anthracene	✔		1	625.1	0.05	<0.05		As Total PAHs	
Benzo(a)pyrene	✔		1	625.1	0.09	<0.09			
Benzo(b)fluoranthene	✔		1	625.1	0.05	<0.05			
Benzo(k)fluoranthene	✔		1	625.1	0.09	<0.09			
Chrysene		✔	1	8270D	0.05	0.08			
Dibenzo(a,h)anthracene	✔		1	625.1	0.02	<0.02			
Indeno(1,2,3-cd)pyrene	✔		1	625.1	0.09	<0.09			

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		✔	1	608.3	0.02	0.20		100 µg/L	---
Naphthalene	✔		1	625.1	1.0	<1.0		20 µg/L	---
E. Halogenated SVOCs									
Total PCBs	✔		1	8020A	0.23	<0.23		0.000064 µg/L	---
Pentachlorophenol	✔		1	8270D	0.47	<0.47		1.0 µg/L	---
F. Fuels Parameters									
Total Petroleum Hydrocarbons	✔		1	1664A	1.5	<1.5		5.0 mg/L	---
Ethanol	✔		1	8260C	400	<400		Report mg/L	---
Methyl-tert-Butyl Ether	✔		1	624.1	1.0	<1.0		70 µg/L	
tert-Butyl Alcohol	✔		1	624.1	50	<50		120 µg/L in MA 40 µg/L in NH	---
tert-Amyl Methyl Ether	✔		1	624.1	1.0	<1.0		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	Field	7.6				
Temperature			1	Field	63.4 F				

E. Treatment system information

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

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

2. Provide a written description of all treatment system(s) or processes that will be applied to the effluent prior to discharge.
Groundwater pump to frac tank to bag filters to LGAC vessel to flow totorlizer to discharge.

Identify each major treatment component (check any that apply):
■ Fractionation tanks☐ Equalization tank ☐ Oil/water separator ☐ Mechanical filter ☐ Media filter
☐ Chemical feed tank ☐ Air stripping unit ■ Bag filter ■ Other; if so, specify: LGAC vessel

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: Bag filters 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.	100 gpm
Provide the average effluent flow in gpm.	50 gpm
If Activity Category IV applies, indicate the estimated total volume of water that will be discharged:	NA

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

F. Chemical and additive information

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

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

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

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

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

G. Endangered Species Act eligibility determination

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

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

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

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

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

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

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

H. National Historic Preservation Act eligibility determination

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

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

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

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

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

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

I. Supplemental information

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

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

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

J. Certification requirement

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

BMPP certification statement:	A BMPP meeting the requirements of this general permit will be developed and implemented upon 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: Jason Mammone Digitally signed by Jason Mammone DN: cn=Jason Mammone, o=Town of Dedham, ou=Engineering Department, email=jmammone@dedham-ma.gov, c=US Date: 2020.07.30 09:07:10 -04'00'	Date:
Print Name and Title: Jason Mammone, Engineering Department Director	Matthew DeLuca - Project Manager - RJV Construction Corp

APPENDIX B

LABORATORY ANALYTICAL REPORTS

PHOENIX
Environmental Laboratories, Inc.

Wednesday, June 24, 2020

Attn: Adam Swederskas
GZA GeoEnvironmental Inc
249 Vanderbilt Ave
Norwood, MA 02062

Project ID: **RUSTCRAFT RD**
SDG ID: **GCG16249**
Sample ID#s: CG16249 - CG16250

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.

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

June 24, 2020

SDG I.D.: GCG16249

8260 Analysis:
1,2-Dibromoethane doesn't meet GW-1 criteria, this compound is analyzed by GC/FID 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.
Sample CG16249 was received past hold time for Chromium, Hexavalent (SM3500CRB).

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

June 24, 2020

SDG I.D.: GCG16249

Project ID: RUSTCRAFT RD

Client Id	Lab Id	Matrix
MW-106	CG16249	GROUND WATER
RW-1	CG16250	SURFACE 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

June 24, 2020

FOR: Attn: Adam Swederskas
GZA GeoEnvironmental Inc
249 Vanderbilt Ave
Norwood, MA 02062

Sample Information		Custody Information		Date	Time
Matrix:	GROUND WATER	Collected by:		06/16/20	12:00
Location Code:	GZA-MA	Received by:	B	06/17/20	16:57
Rush Request:	72 Hour	Analyzed by:	see "By" below		
P.O.#:	174659				

Laboratory Data

SDG ID: GCG16249
Phoenix ID: CG16249

Project ID: RUSTCRAFT RD
Client ID: MW-106

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
Silver	< 0.001	0.001	mg/L	1	06/18/20	TH	SW6010D
Arsenic	0.008	0.004	mg/L	1	06/18/20	TH	SW6010D
Barium	0.109	0.002	mg/L	1	06/18/20	TH	SW6010D
Cadmium	< 0.001	0.001	mg/L	1	06/18/20	TH	SW6010D
Chromium	0.004	0.001	mg/L	1	06/18/20	TH	SW6010D
Copper	0.012	0.005	mg/L	1	06/18/20	TH	SW6010D
Iron	16.9	0.010	mg/L	1	06/18/20	TH	SW6010D
Hardness (CaCO3)	133	0.1	mg/L	1	06/19/20		E200.7
Mercury	< 0.0002	0.0002	mg/L	1	06/18/20	RS	SW7470A
Nickel	0.003	0.001	mg/L	1	06/19/20	TH	SW6010D
Lead	0.015	0.002	mg/L	1	06/18/20	TH	SW6010D
Antimony	< 0.005	0.005	mg/L	1	06/18/20	TH	SW6010D
Selenium	< 0.010	0.010	mg/L	1	06/18/20	TH	SW6010D
Trivalent Chromium	0.004	0.001	mg/L	1	06/18/20		Calculation
Zinc	0.027	0.004	mg/L	1	06/18/20	TH	SW6010D
Chloride	536	60.0	mg/L	20	06/19/20	TB	SM4500CLE-11
Chlorine Residual	< 0.02	0.02	mg/L	1	06/17/20 18:43	O	SM4500Cl-G-00
Chromium, Hexavalent	< 0.01	0.01	mg/L	1	06/17/20 18:25	O	SM3500CRB-11
Ammonia as Nitrogen	1.20	0.05	mg/L	1	06/19/20	KDB	E350.1
Phenolics	< 0.015	0.015	mg/L	1	06/22/20	MSF	E420.4
pH	7.85	1.00	pH Units	1	06/18/20 19:54	AP/EG	SM4500-H B-11
Total Cyanide	< 0.010	0.010	mg/L	1	06/23/20	O/GD	SW9010C/SW9012B
O&G, Non-polar Material	< 1.5	1.5	mg/L	1	06/19/20	MSF	E1664A
Total Suspended Solids	100	10	mg/L	2	06/18/20	QH	SM 2540D-11
Mercury Digestion	Completed				06/18/20	VT/VT	SW7470A
PCB Extraction	Completed				06/17/20		SW3510C
Semi-Volatile Extraction	Completed				06/18/20	P/AK	SW3520C
Semi-Volatile Extraction	Completed				06/17/20	P/AK	SW3520C

Ver 1

Project ID: RUSTCRAFT RD
Client ID: MW-106

Phoenix I.D.: CG16249

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	
Total Metals Digestion	Completed				06/17/20	AG	
Polychlorinated Biphenyls							
PCB-1016	ND	0.23	ug/L	1	06/18/20	SC	SW8082A
PCB-1221	ND	0.23	ug/L	1	06/18/20	SC	SW8082A
PCB-1232	ND	0.23	ug/L	1	06/18/20	SC	SW8082A
PCB-1242	ND	0.23	ug/L	1	06/18/20	SC	SW8082A
PCB-1248	ND	0.23	ug/L	1	06/18/20	SC	SW8082A
PCB-1254	ND	0.23	ug/L	1	06/18/20	SC	SW8082A
PCB-1260	ND	0.23	ug/L	1	06/18/20	SC	SW8082A
PCB-1262	ND	0.23	ug/L	1	06/18/20	SC	SW8082A
PCB-1268	ND	0.23	ug/L	1	06/18/20	SC	SW8082A
QA/QC Surrogates							
% DCBP (Surrogate Rec)	50		%	1	06/18/20	SC	30 - 150 %
% DCBP (Surrogate Rec) (Confirmation)	53		%	1	06/18/20	SC	30 - 150 %
% TCMX (Surrogate Rec)	66		%	1	06/18/20	SC	30 - 150 %
% TCMX (Surrogate Rec) (Confirmation)	72		%	1	06/18/20	SC	30 - 150 %
1,2-Dibromoethane (EDB)	ND	0.02	ug/L	1	06/19/20	CG	SW8011
Volatiles							
1,1,1,2-Tetrachloroethane	ND	1.0	ug/L	1	06/19/20	MH	SW8260C
1,1,1-Trichloroethane	ND	1.0	ug/L	1	06/19/20	MH	SW8260C
1,1,2,2-Tetrachloroethane	ND	0.50	ug/L	1	06/19/20	MH	SW8260C
1,1,2-Trichloroethane	ND	1.0	ug/L	1	06/19/20	MH	SW8260C
1,1-Dichloroethane	ND	1.0	ug/L	1	06/19/20	MH	SW8260C
1,1-Dichloroethene	ND	1.0	ug/L	1	06/19/20	MH	SW8260C
1,1-Dichloropropene	ND	1.0	ug/L	1	06/19/20	MH	SW8260C
1,2,3-Trichlorobenzene	ND	1.0	ug/L	1	06/19/20	MH	SW8260C
1,2,3-Trichloropropane	ND	1.0	ug/L	1	06/19/20	MH	SW8260C
1,2,4-Trichlorobenzene	ND	1.0	ug/L	1	06/19/20	MH	SW8260C
1,2,4-Trimethylbenzene	ND	1.0	ug/L	1	06/19/20	MH	SW8260C
1,2-Dibromo-3-chloropropane	ND	1.0	ug/L	1	06/19/20	MH	SW8260C
1,2-Dibromoethane	ND	1.0	ug/L	1	06/19/20	MH	SW8260C
1,2-Dichlorobenzene	ND	1.0	ug/L	1	06/19/20	MH	SW8260C
1,2-Dichloroethane	ND	0.60	ug/L	1	06/19/20	MH	SW8260C
1,2-Dichloropropane	ND	1.0	ug/L	1	06/19/20	MH	SW8260C
1,3,5-Trimethylbenzene	ND	1.0	ug/L	1	06/19/20	MH	SW8260C
1,3-Dichlorobenzene	ND	1.0	ug/L	1	06/19/20	MH	SW8260C
1,3-Dichloropropane	ND	1.0	ug/L	1	06/19/20	MH	SW8260C
1,4-Dichlorobenzene	ND	1.0	ug/L	1	06/19/20	MH	SW8260C
2,2-Dichloropropane	ND	1.0	ug/L	1	06/19/20	MH	SW8260C
2-Chlorotoluene	ND	1.0	ug/L	1	06/19/20	MH	SW8260C
2-Hexanone	ND	5.0	ug/L	1	06/19/20	MH	SW8260C
2-Isopropyltoluene	ND	1.0	ug/L	1	06/19/20	MH	SW8260C
4-Chlorotoluene	ND	1.0	ug/L	1	06/19/20	MH	SW8260C
4-Methyl-2-pentanone	ND	5.0	ug/L	1	06/19/20	MH	SW8260C
Acetone	ND	25	ug/L	1	06/19/20	MH	SW8260C
Acrylonitrile	ND	1.0	ug/L	1	06/19/20	MH	SW8260C
Benzene	ND	0.70	ug/L	1	06/19/20	MH	SW8260C

Project ID: RUSTCRAFT RD
Client ID: MW-106

Phoenix I.D.: CG16249

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	
Bromobenzene	ND	1.0	ug/L	1	06/19/20	MH	SW8260C
Bromochloromethane	ND	1.0	ug/L	1	06/19/20	MH	SW8260C
Bromodichloromethane	ND	0.50	ug/L	1	06/19/20	MH	SW8260C
Bromoform	ND	1.0	ug/L	1	06/19/20	MH	SW8260C
Bromomethane	ND	1.0	ug/L	1	06/19/20	MH	SW8260C
Carbon Disulfide	ND	5.0	ug/L	1	06/19/20	MH	SW8260C
Carbon tetrachloride	ND	1.0	ug/L	1	06/19/20	MH	SW8260C
Chlorobenzene	ND	1.0	ug/L	1	06/19/20	MH	SW8260C
Chloroethane	ND	1.0	ug/L	1	06/19/20	MH	SW8260C
Chloroform	ND	1.0	ug/L	1	06/19/20	MH	SW8260C
Chloromethane	ND	1.0	ug/L	1	06/19/20	MH	SW8260C
cis-1,2-Dichloroethene	ND	1.0	ug/L	1	06/19/20	MH	SW8260C
cis-1,3-Dichloropropene	ND	0.40	ug/L	1	06/19/20	MH	SW8260C
Dibromochloromethane	ND	0.50	ug/L	1	06/19/20	MH	SW8260C
Dibromomethane	ND	1.0	ug/L	1	06/19/20	MH	SW8260C
Dichlorodifluoromethane	ND	1.0	ug/L	1	06/19/20	MH	SW8260C
Ethylbenzene	ND	1.0	ug/L	1	06/19/20	MH	SW8260C
Hexachlorobutadiene	ND	0.40	ug/L	1	06/19/20	MH	SW8260C
Isopropylbenzene	ND	1.0	ug/L	1	06/19/20	MH	SW8260C
m&p-Xylene	ND	1.0	ug/L	1	06/19/20	MH	SW8260C
Methyl ethyl ketone	ND	5.0	ug/L	1	06/19/20	MH	SW8260C
Methyl t-butyl ether (MTBE)	ND	1.0	ug/L	1	06/19/20	MH	SW8260C
Methylene chloride	ND	1.0	ug/L	1	06/19/20	MH	SW8260C
Naphthalene	ND	1.0	ug/L	1	06/19/20	MH	SW8260C
n-Butylbenzene	ND	1.0	ug/L	1	06/19/20	MH	SW8260C
n-Propylbenzene	ND	1.0	ug/L	1	06/19/20	MH	SW8260C
o-Xylene	ND	1.0	ug/L	1	06/19/20	MH	SW8260C
p-Isopropyltoluene	ND	1.0	ug/L	1	06/19/20	MH	SW8260C
sec-Butylbenzene	ND	1.0	ug/L	1	06/19/20	MH	SW8260C
Styrene	ND	1.0	ug/L	1	06/19/20	MH	SW8260C
tert-Butylbenzene	ND	1.0	ug/L	1	06/19/20	MH	SW8260C
Tetrachloroethene	ND	1.0	ug/L	1	06/19/20	MH	SW8260C
Tetrahydrofuran (THF)	ND	2.5	ug/L	1	06/19/20	MH	SW8260C
Toluene	ND	1.0	ug/L	1	06/19/20	MH	SW8260C
Total Xylenes	ND	1.0	ug/L	1	06/19/20	MH	SW8260C
trans-1,2-Dichloroethene	ND	1.0	ug/L	1	06/19/20	MH	SW8260C
trans-1,3-Dichloropropene	ND	0.40	ug/L	1	06/19/20	MH	SW8260C
trans-1,4-dichloro-2-butene	ND	5.0	ug/L	1	06/19/20	MH	SW8260C
Trichloroethene	ND	1.0	ug/L	1	06/19/20	MH	SW8260C
Trichlorofluoromethane	ND	1.0	ug/L	1	06/19/20	MH	SW8260C
Trichlorotrifluoroethane	ND	1.0	ug/L	1	06/19/20	MH	SW8260C
Vinyl chloride	ND	1.0	ug/L	1	06/19/20	MH	SW8260C
QA/QC Surrogates							
% 1,2-dichlorobenzene-d4	99		%	1	06/19/20	MH	70 - 130 %
% Bromofluorobenzene	95		%	1	06/19/20	MH	70 - 130 %
% Dibromofluoromethane	91		%	1	06/19/20	MH	70 - 130 %
% Toluene-d8	100		%	1	06/19/20	MH	70 - 130 %
Ethanol	ND	400	ug/L	1	06/19/20	MH	SW8260C

Project ID: RUSTCRAFT RD
Client ID: MW-106

Phoenix I.D.: CG16249

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	
Tert-amyl-methyl-ether	ND	1.0	ug/L	1	06/19/20	MH	SW8260C
Tert-butyl alcohol	ND	50	ug/L	1	06/19/20	MH	SW8260C

Semivolatiles

1,2,4,5-Tetrachlorobenzene	ND	3.3	ug/L	1	06/22/20	WB	SW8270D
1,2,4-Trichlorobenzene	ND	4.7	ug/L	1	06/22/20	WB	SW8270D
1,2-Dichlorobenzene	ND	2.4	ug/L	1	06/22/20	WB	SW8270D
1,2-Diphenylhydrazine	ND	4.7	ug/L	1	06/22/20	WB	SW8270D
1,3-Dichlorobenzene	ND	2.4	ug/L	1	06/22/20	WB	SW8270D
1,4-Dichlorobenzene	ND	2.4	ug/L	1	06/22/20	WB	SW8270D
2,4,5-Trichlorophenol	ND	0.94	ug/L	1	06/22/20	WB	SW8270D
2,4,6-Trichlorophenol	ND	0.94	ug/L	1	06/22/20	WB	SW8270D
2,4-Dichlorophenol	ND	0.94	ug/L	1	06/22/20	WB	SW8270D
2,4-Dimethylphenol	ND	0.94	ug/L	1	06/22/20	WB	SW8270D
2,4-Dinitrophenol	ND	0.94	ug/L	1	06/22/20	WB	SW8270D
2,4-Dinitrotoluene	ND	4.7	ug/L	1	06/22/20	WB	SW8270D
2,6-Dinitrotoluene	ND	4.7	ug/L	1	06/22/20	WB	SW8270D
2-Chloronaphthalene	ND	4.7	ug/L	1	06/22/20	WB	SW8270D
2-Chlorophenol	ND	0.94	ug/L	1	06/22/20	WB	SW8270D
2-Methylphenol (o-cresol)	ND	0.94	ug/L	1	06/22/20	WB	SW8270D
2-Nitroaniline	ND	4.7	ug/L	1	06/22/20	WB	SW8270D
2-Nitrophenol	ND	0.94	ug/L	1	06/22/20	WB	SW8270D
3&4-Methylphenol (m&p-cresol)	ND	9.4	ug/L	1	06/22/20	WB	SW8270D
3,3'-Dichlorobenzidine	ND	4.7	ug/L	1	06/22/20	WB	SW8270D
3-Nitroaniline	ND	4.7	ug/L	1	06/22/20	WB	SW8270D
4,6-Dinitro-2-methylphenol	ND	0.94	ug/L	1	06/22/20	WB	SW8270D
4-Bromophenyl phenyl ether	ND	4.7	ug/L	1	06/22/20	WB	SW8270D
4-Chloro-3-methylphenol	ND	0.94	ug/L	1	06/22/20	WB	SW8270D
4-Chloroaniline	ND	4.7	ug/L	1	06/22/20	WB	SW8270D
4-Chlorophenyl phenyl ether	ND	0.94	ug/L	1	06/22/20	WB	SW8270D
4-Nitroaniline	ND	4.7	ug/L	1	06/22/20	WB	SW8270D
4-Nitrophenol	ND	0.94	ug/L	1	06/22/20	WB	SW8270D
Acetophenone	ND	4.7	ug/L	1	06/22/20	WB	SW8270D
Aniline	ND	4.7	ug/L	1	06/22/20	WB	SW8270D
Benzidine	ND	4.7	ug/L	1	06/22/20	WB	SW8270D
Benzoic acid	ND	47	ug/L	1	06/22/20	WB	SW8270D
Benzyl butyl phthalate	ND	4.7	ug/L	1	06/22/20	WB	SW8270D
Bis(2-chloroethoxy)methane	ND	4.7	ug/L	1	06/22/20	WB	SW8270D
Bis(2-chloroethyl)ether	ND	0.94	ug/L	1	06/22/20	WB	SW8270D
Bis(2-chloroisopropyl)ether	ND	4.7	ug/L	1	06/22/20	WB	SW8270D
Bis(2-ethylhexyl)phthalate	ND	0.94	ug/L	1	06/22/20	WB	SW8270D
Carbazole	ND	4.7	ug/L	1	06/22/20	WB	SW8270D
Dibenzofuran	ND	4.7	ug/L	1	06/22/20	WB	SW8270D
Diethyl phthalate	ND	4.7	ug/L	1	06/22/20	WB	SW8270D
Dimethylphthalate	ND	4.7	ug/L	1	06/22/20	WB	SW8270D
Di-n-butylphthalate	ND	4.7	ug/L	1	06/22/20	WB	SW8270D
Di-n-octylphthalate	ND	4.7	ug/L	1	06/22/20	WB	SW8270D
Hexachloroethane	ND	0.94	ug/L	1	06/22/20	WB	SW8270D
Isophorone	ND	4.7	ug/L	1	06/22/20	WB	SW8270D
N-Nitrosodi-n-propylamine	ND	4.7	ug/L	1	06/22/20	WB	SW8270D

Project ID: RUSTCRAFT RD
Client ID: MW-106

Phoenix I.D.: CG16249

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	
N-Nitrosodiphenylamine	ND	4.7	ug/L	1	06/22/20	WB	SW8270D
Pentachloronitrobenzene	ND	2.4	ug/L	1	06/22/20	WB	SW8270D
Phenol	ND	0.94	ug/L	1	06/22/20	WB	SW8270D
QA/QC Surrogates							
% 2,4,6-Tribromophenol	81		%	1	06/22/20	WB	15 - 110 %
% 2-Fluorobiphenyl	72		%	1	06/22/20	WB	30 - 130 %
% 2-Fluorophenol	51		%	1	06/22/20	WB	15 - 110 %
% Nitrobenzene-d5	67		%	1	06/22/20	WB	30 - 130 %
% Phenol-d5	51		%	1	06/22/20	WB	15 - 110 %
% Terphenyl-d14	68		%	1	06/22/20	WB	30 - 130 %
Semivolatiles (SIM)							
2-Methylnaphthalene	ND	0.47	ug/L	1	06/22/20	WB	SW8270D (SIM)
Acenaphthene	ND	0.47	ug/L	1	06/22/20	WB	SW8270D (SIM)
Acenaphthylene	ND	0.09	ug/L	1	06/22/20	WB	SW8270D (SIM)
Anthracene	ND	0.09	ug/L	1	06/22/20	WB	SW8270D (SIM)
Benz(a)anthracene	ND	0.09	ug/L	1	06/22/20	WB	SW8270D (SIM)
Benzo(a)pyrene	ND	0.19	ug/L	1	06/22/20	WB	SW8270D (SIM)
Benzo(b)fluoranthene	ND	0.09	ug/L	1	06/22/20	WB	SW8270D (SIM)
Benzo(ghi)perylene	0.08	0.02	ug/L	1	06/22/20	WB	SW8270D (SIM)
Benzo(k)fluoranthene	ND	0.09	ug/L	1	06/22/20	WB	SW8270D (SIM)
Chrysene	0.08	0.05	ug/L	1	06/22/20	WB	SW8270D (SIM)
Dibenz(a,h)anthracene	ND	0.02	ug/L	1	06/22/20	WB	SW8270D (SIM)
Fluoranthene	ND	0.47	ug/L	1	06/22/20	WB	SW8270D (SIM)
Fluorene	ND	0.09	ug/L	1	06/22/20	WB	SW8270D (SIM)
Hexachlorobenzene	ND	0.47	ug/L	1	06/22/20	WB	SW8270D (SIM)
Hexachlorobutadiene	ND	0.47	ug/L	1	06/22/20	WB	SW8270D (SIM)
Hexachlorocyclopentadiene	ND	0.47	ug/L	1	06/22/20	WB	SW8270D (SIM)
Indeno(1,2,3-cd)pyrene	ND	0.09	ug/L	1	06/22/20	WB	SW8270D (SIM)
Naphthalene	ND	0.47	ug/L	1	06/22/20	WB	SW8270D (SIM)
Nitrobenzene	ND	0.47	ug/L	1	06/22/20	WB	SW8270D (SIM)
N-Nitrosodimethylamine	ND	0.47	ug/L	1	06/22/20	WB	SW8270D (SIM)
Pentachlorophenol	ND	0.47	ug/L	1	06/22/20	WB	SW8270D (SIM)
Phenanthrene	ND	0.47	ug/L	1	06/22/20	WB	SW8270D (SIM)
Pyrene	0.12	0.07	ug/L	1	06/22/20	WB	SW8270D (SIM)
Pyridine	ND	0.47	ug/L	1	06/22/20	WB	SW8270D (SIM)
QA/QC Surrogates							
% 2,4,6-Tribromophenol	75		%	1	06/22/20	WB	15 - 110 %
% 2-Fluorobiphenyl	58		%	1	06/22/20	WB	40 - 140 %
% 2-Fluorophenol	54		%	1	06/22/20	WB	15 - 110 %
% Nitrobenzene-d5	77		%	1	06/22/20	WB	40 - 140 %
% Phenol-d5	57		%	1	06/22/20	WB	15 - 110 %
% Terphenyl-d14	69		%	1	06/22/20	WB	40 - 140 %
1,4-dioxane							
1,4-dioxane	ND	0.20	ug/l	1	06/19/20	AW	SW8270DSIM
QA/QC Surrogates							
% 1,4-dioxane-d8	87		%	1	06/19/20	AW	40 - 140 %
Extraction for 1,4-Dioxane	Completed				06/18/20	S/S	

Project ID: RUSTCRAFT RD
Client ID: MW-106

Phoenix I.D.: CG16249

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By

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:

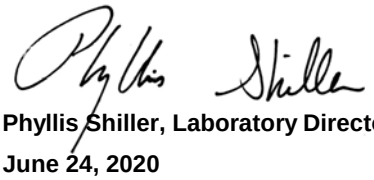
The regulatory hold time for Chlorine is immediately. This Chlorine was performed in the laboratory and may be considered outside of hold-time.

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

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 pH is immediately. This pH was performed in the laboratory and may be considered outside of hold-time.

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

June 24, 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

June 24, 2020

FOR: Attn: Adam Swederskas
GZA GeoEnvironmental Inc
249 Vanderbilt Ave
Norwood, MA 02062

Sample Information		Custody Information		Date	Time
Matrix:	SURFACE WATER	Collected by:		06/16/20	9:45
Location Code:	GZA-MA	Received by:	B	06/17/20	16:57
Rush Request:	72 Hour	Analyzed by:	see "By" below		
P.O.#:	174659				

Laboratory Data

SDG ID: GCG16249
Phoenix ID: CG16250

Project ID: RUSTCRAFT RD
Client ID: RW-1

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
Silver	< 0.001	0.001	mg/L	1	06/18/20	TH	SW6010D
Arsenic	< 0.004	0.004	mg/L	1	06/18/20	TH	SW6010D
Cadmium	< 0.001	0.001	mg/L	1	06/18/20	TH	SW6010D
Chromium	< 0.001	0.001	mg/L	1	06/18/20	TH	SW6010D
Copper	0.005	0.005	mg/L	1	06/18/20	TH	SW6010D
Iron	0.452	0.010	mg/L	1	06/18/20	TH	E200.7
Hardness (CaCO3)	80.4	0.1	mg/L	1	06/19/20		E200.7
Mercury	< 0.0002	0.0002	mg/L	1	06/18/20	RS	SW7470A
Nickel	0.001	0.001	mg/L	1	06/19/20	TH	SW6010D
Lead	< 0.002	0.002	mg/L	1	06/18/20	TH	SW6010D
Antimony	< 0.005	0.005	mg/L	1	06/18/20	TH	SW6010D
Selenium	< 0.010	0.010	mg/L	1	06/18/20	TH	SW6010D
Zinc	0.012	0.004	mg/L	1	06/18/20	TH	SW6010D
Ammonia as Nitrogen	< 0.05	0.05	mg/L	1	06/19/20	KDB	E350.1
Mercury Digestion	Completed				06/18/20	VT/VT	SW7470A
Total Metals Digestion	Completed				06/17/20	AG	

Project ID: RUSTCRAFT RD
Client ID: RW-1

Phoenix I.D.: CG16250

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By

RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level

Comments:

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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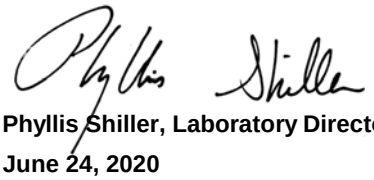

Phyllis Shiller, Laboratory Director
June 24, 2020
Reviewed and Released by: Rashmi Makol, Project Manager

Environmental Laboratories, Inc.
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Tel. (860) 645-1102 Fax (860) 645-0823

QA/QC Report

June 24, 2020

QA/QC Data

SDG I.D.: GCG16249

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 534066 (mg/L), QC Sample No: CG15592 (CG16249, CG16250)													
Mercury - Water	BRL	0.0002	<0.0002	<0.0002	NC	100			104			75 - 125	30
Comment:													
Additional Mercury criteria: LCS acceptance range for waters is 80-120% and for soils is 75-125%													
QA/QC Batch 533991 (mg/L), QC Sample No: CG15898 (CG16249, CG16250)													
ICP Metals - Aqueous													
Antimony	BRL	0.005	<0.005	<0.005	NC	101	100	1.0	100			80 - 120	20
Arsenic	BRL	0.004	<0.004	<0.004	NC	96.3	95.7	0.6	96.3			80 - 120	20
Barium	BRL	0.002	0.079	0.078	1.30	101	101	0.0	100			80 - 120	20
Cadmium	BRL	0.001	<0.001	<0.001	NC	98.3	98.0	0.3	94.8			80 - 120	20
Chromium	BRL	0.001	<0.001	<0.001	NC	100	99.1	0.9	100			80 - 120	20
Copper	BRL	0.005	<0.005	<0.005	NC	100	101	1.0	101			80 - 120	20
Iron	BRL	0.010	3.33	3.35	0.60	99.5	99.5	0.0	103			80 - 120	20
Lead	BRL	0.002	<0.002	<0.002	NC	96.0	95.4	0.6	95.1			80 - 120	20
Nickel	BRL	0.001	<0.001	<0.001	NC	99.5	99.6	0.1	97.2			80 - 120	20
Selenium	BRL	0.010	<0.010	<0.010	NC	94.1	93.4	0.7	92.4			80 - 120	20
Silver	BRL	0.001	<0.001	<0.001	NC	99.6	99.0	0.6	99.7			80 - 120	20
Zinc	BRL	0.004	<0.004	<0.004	NC	98.3	98.3	0.0	97.1			80 - 120	20
Comment:													
Additional: LCS acceptance range is 80-120% MS acceptance range 75-125%.													

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QA/QC Report

June 24, 2020

QA/QC Data

SDG I.D.: GCG16249

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 534557 (mg/L), QC Sample No: CG16095 (CG16249)													
Total Cyanide	BRL	0.010	0.029	0.030	NC	101			104			90 - 110	30
Comment:													
Additional soil criteria LCS acceptance range is 80-120% MS acceptance range 75-125%.													
QA/QC Batch 534048 (mg/L), QC Sample No: CG14566 (CG16249)													
O&G, Non-polar Material	BRL	1.4	<1.4	<1.4	NC	92.0			89.0			85 - 115	20
Comment:													
Additional: LCS acceptance range is 85-115% MS acceptance range 75-125%.													
QA/QC Batch 534045 (mg/L), QC Sample No: CG14566 (CG16249)													
Oil and Grease by EPA 1664A	BRL	1.4	<1.4	<1.4	NC	96.0			91.0			85 - 115	20
Comment:													
Additional: MS acceptance range 75-125%.													
QA/QC Batch 534055 (mg/L), QC Sample No: CG16100 (CG16249)													
Total Suspended Solids	BRL	2.5	19	18	NC	99.0						85 - 115	
QA/QC Batch 534254 (pH), QC Sample No: CG16342 (CG16249)													
pH			7.74	7.90	2.00	98.8						85 - 115	20
Comment:													
Additional: LCS acceptance range is 85-115% MS acceptance range 75-125%.													
QA/QC Batch 534002 (mg/L), QC Sample No: CG15845 (CG16249)													
Chromium, Hexavalent	BRL	0.01	<0.01	<0.01	NC	103			113			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 534360 (mg/L), QC Sample No: CG15506 (CG16249)													
Chloride	BRL	3.0	18.0	18.6	3.30	98.6			103			90 - 110	20
QA/QC Batch 534065 (mg/L), QC Sample No: CG14231 (CG16249, CG16250)													
Ammonia as Nitrogen	BRL	0.05	<0.10	<0.10	NC	92.7			106			90 - 110	20
QA/QC Batch 534247 (mg/L), QC Sample No: CG16069 (CG16249)													
Phenolics	BRL	0.015	<0.015	<0.015	NC	100			103			90 - 110	20
QA/QC Batch 534003 (mg/L), QC Sample No: CG15528 (CG16249)													
Chlorine Residual	BRL	0.02	<0.02	<0.02	NC	87.1							

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QA/QC Report

June 24, 2020

QA/QC Data

SDG I.D.: GCG16249

Parameter	Blank	Blk RL	LCS %	LCSD %	LCS RPD	MS %	MSD %	MS RPD	% Rec Limits	% RPD Limits
QA/QC Batch 534058 (ug/L), QC Sample No: CG15904 (CG16249)										
EDB and DBCP Analysis - Ground Water										
1,2-Dibromoethane (EDB)	ND	0.01	94	95	1.1	93	94	1.1	70 - 130	25
QA/QC Batch 534432 (ug/L), QC Sample No: CG17807 (CG16249)										
EDB and DBCP Analysis - Ground Water										
1,2-Dibromoethane (EDB)	ND	0.01	101	103	2.0	98	96	2.1	70 - 130	25
QA/QC Batch 533978 (ug/L), QC Sample No: CG13924 (CG16249)										
Polychlorinated Biphenyls - Ground Water										
PCB-1016	ND	0.050	96	99	3.1				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	107	114	6.3				40 - 140	20
PCB-1262	ND	0.050							40 - 140	20
PCB-1268	ND	0.050							40 - 140	20
% DCBP (Surrogate Rec)	74	%	96	97	1.0				30 - 150	20
% DCBP (Surrogate Rec) (Confirm	63	%	83	82	1.2				30 - 150	20
% TCMX (Surrogate Rec)	65	%	103	104	1.0				30 - 150	20
% TCMX (Surrogate Rec) (Confirm	59	%	95	95	0.0				30 - 150	20
Comment:										
A LCS and LCS Duplicate were performed instead of a matrix spike and matrix spike duplicate.										
QA/QC Batch 534161 (ug/L), QC Sample No: CG16166 (CG16249)										
Semivolatiles - Ground Water										
1,2,4,5-Tetrachlorobenzene	ND	3.5	74	68	8.5				40 - 140	20
1,2,4-Trichlorobenzene	ND	3.5	76	74	2.7				40 - 140	20
1,2-Dichlorobenzene	ND	1.0	66	69	4.4				40 - 140	20
1,2-Diphenylhydrazine	ND	1.6	82	72	13.0				40 - 140	20
1,3-Dichlorobenzene	ND	1.0	66	69	4.4				40 - 140	20
1,4-Dichlorobenzene	ND	1.0	65	68	4.5				40 - 140	20
2,4,5-Trichlorophenol	ND	1.0	95	85	11.1				30 - 130	20
2,4,6-Trichlorophenol	ND	1.0	92	84	9.1				30 - 130	20
2,4-Dichlorophenol	ND	1.0	82	78	5.0				30 - 130	20
2,4-Dimethylphenol	ND	1.0	84	77	8.7				30 - 130	20
2,4-Dinitrophenol	ND	1.0	101	94	7.2				30 - 130	20
2,4-Dinitrotoluene	ND	3.5	97	85	13.2				40 - 140	20
2,6-Dinitrotoluene	ND	3.5	91	82	10.4				40 - 140	20
2-Chloronaphthalene	ND	3.5	82	75	8.9				40 - 140	20
2-Chlorophenol	ND	1.0	69	71	2.9				30 - 130	20
2-Methylphenol (o-cresol)	ND	1.0	71	73	2.8				30 - 130	20

QA/QC Data

SDG I.D.: GCG16249

Parameter	Blank	Blk RL	LCS %	LCSD %	LCS RPD	MS %	MSD %	MS RPD	% Rec Limits	% RPD Limits	
2-Nitroaniline	ND	3.5	127	104	19.9				40 - 140	20	
2-Nitrophenol	ND	1.0	76	75	1.3				30 - 130	20	
3&4-Methylphenol (m&p-cresol)	ND	1.0	78	75	3.9				30 - 130	20	
3,3'-Dichlorobenzidine	ND	5.0	79	55	35.8				40 - 140	20	r
3-Nitroaniline	ND	5.0	112	73	42.2				40 - 140	20	r
4,6-Dinitro-2-methylphenol	ND	1.0	102	94	8.2				30 - 130	20	
4-Bromophenyl phenyl ether	ND	3.5	86	71	19.1				40 - 140	20	
4-Chloro-3-methylphenol	ND	1.0	88	81	8.3				30 - 130	20	
4-Chloroaniline	ND	3.5	88	19	129.0				40 - 140	20	l,r
4-Chlorophenyl phenyl ether	ND	1.0	84	71	16.8				40 - 140	20	
4-Nitroaniline	ND	5.0	93	82	12.6				40 - 140	20	
4-Nitrophenol	ND	1.0	93	72	25.5				30 - 130	20	r
Acetophenone	ND	3.5	71	69	2.9				40 - 140	20	
Aniline	ND	3.5	72	47	42.0				40 - 140	20	r
Benzidine	ND	4.5	94	<10	NC				40 - 140	20	l
Benzoic acid	ND	10	81	71	13.2				30 - 130	20	
Benzyl butyl phthalate	ND	1.5	93	63	38.5				40 - 140	20	r
Bis(2-chloroethoxy)methane	ND	3.5	80	74	7.8				40 - 140	20	
Bis(2-chloroethyl)ether	ND	1.0	65	65	0.0				40 - 140	20	
Bis(2-chloroisopropyl)ether	ND	1.0	59	58	1.7				40 - 140	20	
Bis(2-ethylhexyl)phthalate	ND	1.5	94	33	96.1				40 - 140	20	l,r
Carbazole	ND	5.0	91	80	12.9				40 - 140	20	
Dibenzofuran	ND	3.5	84	75	11.3				40 - 140	20	
Diethyl phthalate	ND	1.5	90	77	15.6				40 - 140	20	
Dimethylphthalate	ND	1.5	88	78	12.0				40 - 140	20	
Di-n-butylphthalate	ND	1.5	89	68	26.8				40 - 140	20	r
Di-n-octylphthalate	ND	1.5	100	33	100.8				40 - 140	20	l,r
Hexachloroethane	ND	3.5	67	68	1.5				40 - 140	20	
Isophorone	ND	3.5	76	68	11.1				40 - 140	20	
N-Nitrosodi-n-propylamine	ND	3.5	73	70	4.2				40 - 140	20	
N-Nitrosodiphenylamine	ND	3.5	91	78	15.4				40 - 140	20	
Pentachloronitrobenzene	ND	5.0	86	59	37.2				40 - 140	20	r
Phenol	ND	1.0	66	57	14.6				30 - 130	20	
% 2,4,6-Tribromophenol	74	%	87	77	12.2				15 - 110	20	
% 2-Fluorobiphenyl	72	%	73	66	10.1				30 - 130	20	
% 2-Fluorophenol	63	%	57	59	3.4				15 - 110	20	
% Nitrobenzene-d5	70	%	64	65	1.6				30 - 130	20	
% Phenol-d5	67	%	59	55	7.0				15 - 110	20	
% Terphenyl-d14	82	%	84	30	94.7				30 - 130	20	r

Comment:

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

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 534156 (ug/l), QC Sample No: CG16572 (CG16249)

1,4dioxane - Ground Water

1,4-dioxane	ND	0.20	91	73	22.0	NC	NC	NC	40 - 140	30	
% 1,4-dioxane-d8	68	%	78	68	13.7	74	78	5.3	40 - 140	30	

QA/QC Batch 534007 (ug/L), QC Sample No: CG15375 (CG16249)

Semivolatiles by SIM, PAH - Ground Water

2-Methylnaphthalene	ND	0.50	48	55	13.6				40 - 140	20	
Acenaphthene	ND	0.50	65	68	4.5				40 - 140	20	

Parameter	Blank	Blk RL	LCS %	LCSD %	LCS RPD	MS %	MSD %	MS RPD	% Rec Limits	% RPD Limits	
Acenaphthylene	ND	0.10	67	70	4.4				40 - 140	20	
Anthracene	ND	0.10	71	75	5.5				40 - 140	20	
Benz(a)anthracene	ND	0.05	84	82	2.4				40 - 140	20	
Benzo(a)pyrene	ND	0.20	86	81	6.0				40 - 140	20	
Benzo(b)fluoranthene	ND	0.07	95	87	8.8				40 - 140	20	
Benzo(ghi)perylene	ND	0.02	64	64	0.0				40 - 140	20	
Benzo(k)fluoranthene	ND	0.10	67	67	0.0				40 - 140	20	
Chrysene	ND	0.05	73	70	4.2				40 - 140	20	
Dibenz(a,h)anthracene	ND	0.02	77	74	4.0				40 - 140	20	
Fluoranthene	ND	0.50	73	76	4.0				40 - 140	20	
Fluorene	ND	0.10	67	68	1.5				40 - 140	20	
Indeno(1,2,3-cd)pyrene	ND	0.10	72	72	0.0				40 - 140	20	
Naphthalene	ND	0.50	46	57	21.4				40 - 140	20	r
Phenanthrene	ND	0.06	76	79	3.9				40 - 140	20	
Pyrene	ND	0.07	75	78	3.9				40 - 140	20	
% 2-Fluorobiphenyl	58	%	50	54	7.7				40 - 140	20	
% Nitrobenzene-d5	59	%	47	61	25.9				40 - 140	20	r
% Terphenyl-d14	77	%	72	74	2.7				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 534161 (ug/L), QC Sample No: CG16166 (CG16249)

Semivolatiles (SIM) - Ground Water

2-Methylnaphthalene	ND	0.50	73	65	11.6				40 - 140	20	
Acenaphthene	ND	0.50	81	70	14.6				40 - 140	20	
Acenaphthylene	ND	0.50	83	72	14.2				40 - 140	20	
Anthracene	ND	0.50	84	70	18.2				40 - 140	20	
Benz(a)anthracene	ND	0.50	146	65	76.8				40 - 140	20	l,r
Benzo(a)pyrene	ND	0.50	96	35	93.1				40 - 140	20	l,r
Benzo(b)fluoranthene	ND	0.50	110	42	89.5				40 - 140	20	r
Benzo(ghi)perylene	ND	0.50	87	31	94.9				40 - 140	20	l,r
Benzo(k)fluoranthene	ND	0.50	75	28	91.3				40 - 140	20	l,r
Chrysene	ND	0.50	121	54	76.6				40 - 140	20	r
Dibenz(a,h)anthracene	ND	0.50	101	33	101.5				40 - 140	20	l,r
Fluoranthene	ND	0.50	89	64	32.7				40 - 140	20	r
Fluorene	ND	0.50	84	72	15.4				40 - 140	20	
Hexachlorobenzene	ND	0.50	75	42	56.4				40 - 140	20	r
Hexachlorobutadiene	ND	0.50	82	70	15.8				40 - 140	20	
Hexachlorocyclopentadiene	ND	0.50	28	30	6.9				40 - 140	20	l
Indeno(1,2,3-cd)pyrene	ND	0.50	99	33	100.0				40 - 140	20	l,r
Naphthalene	ND	0.50	77	70	9.5				40 - 140	20	
Nitrobenzene	ND	0.50	77	78	1.3				40 - 140	20	
N-Nitrosodimethylamine	ND	0.05	61	49	21.8				40 - 140	20	r
Pentachlorophenol	ND	0.50	92	77	17.8				40 - 140	20	
Phenanthrene	ND	0.50	93	77	18.8				40 - 140	20	
Pyrene	ND	0.50	92	66	32.9				40 - 140	20	r
Pyridine	ND	0.50	59	<10	NC				40 - 140	20	l
% 2,4,6-Tribromophenol	73	%	90	77	15.6				15 - 110	20	
% 2-Fluorobiphenyl	59	%	66	58	12.9				40 - 140	20	
% 2-Fluorophenol	62	%	58	60	3.4				15 - 110	20	
% Nitrobenzene-d5	71	%	79	73	7.9				40 - 140	20	
% Phenol-d5	65	%	64	56	13.3				15 - 110	20	

Parameter	Blank	Blk RL		LCS %	LCSD %	LCS RPD	MS %	MSD %	MS RPD	% Rec Limits	% RPD Limits	
% Terphenyl-d14	82	%		91	34	91.2				40 - 140	20	l,r

Comment:

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

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 534487 (ug/L), QC Sample No: CG15615 (CG16249)

Volatiles - Ground Water

1,1,1,2-Tetrachloroethane	ND	1.0		86	85	1.2				70 - 130	30	
1,1,1-Trichloroethane	ND	1.0		85	86	1.2				70 - 130	30	
1,1,2,2-Tetrachloroethane	ND	0.50		88	86	2.3				70 - 130	30	
1,1,2-Trichloroethane	ND	1.0		80	81	1.2				70 - 130	30	
1,1-Dichloroethane	ND	1.0		87	89	2.3				70 - 130	30	
1,1-Dichloroethene	ND	1.0		90	92	2.2				70 - 130	30	
1,1-Dichloropropene	ND	1.0		84	85	1.2				70 - 130	30	
1,2,3-Trichlorobenzene	ND	1.0		84	83	1.2				70 - 130	30	
1,2,3-Trichloropropane	ND	1.0		81	81	0.0				70 - 130	30	
1,2,4-Trichlorobenzene	ND	1.0		84	81	3.6				70 - 130	30	
1,2,4-Trimethylbenzene	ND	1.0		87	87	0.0				70 - 130	30	
1,2-Dibromo-3-chloropropane	ND	1.0		94	94	0.0				70 - 130	30	
1,2-Dibromoethane	ND	1.0		84	84	0.0				70 - 130	30	
1,2-Dichlorobenzene	ND	1.0		83	83	0.0				70 - 130	30	
1,2-Dichloroethane	ND	1.0		85	83	2.4				70 - 130	30	
1,2-Dichloropropane	ND	1.0		88	88	0.0				70 - 130	30	
1,3,5-Trimethylbenzene	ND	1.0		88	88	0.0				70 - 130	30	
1,3-Dichlorobenzene	ND	1.0		83	83	0.0				70 - 130	30	
1,3-Dichloropropane	ND	1.0		82	83	1.2				70 - 130	30	
1,4-Dichlorobenzene	ND	1.0		82	82	0.0				70 - 130	30	
2,2-Dichloropropane	ND	1.0		85	86	1.2				70 - 130	30	
2-Chlorotoluene	ND	1.0		84	85	1.2				70 - 130	30	
2-Hexanone	ND	5.0		91	90	1.1				40 - 160	30	
2-Isopropyltoluene	ND	1.0		101	102	1.0				70 - 130	30	
4-Chlorotoluene	ND	1.0		82	83	1.2				70 - 130	30	
4-Methyl-2-pentanone	ND	5.0		97	93	4.2				40 - 160	30	
Acetone	ND	5.0		102	86	17.0				40 - 160	30	
Acrylonitrile	ND	5.0		107	106	0.9				70 - 130	30	
Benzene	ND	0.70		88	90	2.2				70 - 130	30	
Bromobenzene	ND	1.0		84	84	0.0				70 - 130	30	
Bromochloromethane	ND	1.0		83	84	1.2				70 - 130	30	
Bromodichloromethane	ND	0.50		93	91	2.2				70 - 130	30	
Bromoform	ND	1.0		108	107	0.9				70 - 130	30	
Bromomethane	ND	1.0		107	109	1.9				40 - 160	30	
Carbon Disulfide	ND	1.0		122	124	1.6				70 - 130	30	
Carbon tetrachloride	ND	1.0		87	89	2.3				70 - 130	30	
Chlorobenzene	ND	1.0		84	84	0.0				70 - 130	30	
Chloroethane	ND	1.0		111	112	0.9				70 - 130	30	
Chloroform	ND	1.0		82	84	2.4				70 - 130	30	
Chloromethane	ND	1.0		94	95	1.1				40 - 160	30	
cis-1,2-Dichloroethene	ND	1.0		84	86	2.4				70 - 130	30	
cis-1,3-Dichloropropene	ND	0.40		100	103	3.0				70 - 130	30	
Dibromochloromethane	ND	0.50		98	99	1.0				70 - 130	30	
Dibromomethane	ND	1.0		83	81	2.4				70 - 130	30	
Dichlorodifluoromethane	ND	1.0		112	112	0.0				40 - 160	30	

QA/QC Data

SDG I.D.: GCG16249

Parameter	Blank	Blk RL	LCS %	LCSD %	LCS RPD	MS %	MSD %	MS RPD	% Rec Limits	% RPD Limits	
Ethylbenzene	ND	1.0	88	90	2.2				70 - 130	30	
Hexachlorobutadiene	ND	0.40	92	89	3.3				70 - 130	30	
Isopropylbenzene	ND	1.0	86	87	1.2				70 - 130	30	
m&p-Xylene	ND	1.0	85	86	1.2				70 - 130	30	
Methyl ethyl ketone	ND	5.0	104	109	4.7				40 - 160	30	
Methyl t-butyl ether (MTBE)	ND	1.0	97	98	1.0				70 - 130	30	
Methylene chloride	ND	1.0	87	89	2.3				70 - 130	30	
Naphthalene	ND	1.0	87	84	3.5				70 - 130	30	
n-Butylbenzene	ND	1.0	91	92	1.1				70 - 130	30	
n-Propylbenzene	ND	1.0	88	89	1.1				70 - 130	30	
o-Xylene	ND	1.0	86	88	2.3				70 - 130	30	
p-Isopropyltoluene	ND	1.0	91	92	1.1				70 - 130	30	
sec-Butylbenzene	ND	1.0	96	95	1.0				70 - 130	30	
Styrene	ND	1.0	87	88	1.1				70 - 130	30	
tert-Butylbenzene	ND	1.0	88	90	2.2				70 - 130	30	
Tetrachloroethene	ND	1.0	80	81	1.2				70 - 130	30	
Tetrahydrofuran (THF)	ND	2.5	89	91	2.2				70 - 130	30	
Toluene	ND	1.0	86	87	1.2				70 - 130	30	
trans-1,2-Dichloroethene	ND	1.0	90	90	0.0				70 - 130	30	
trans-1,3-Dichloropropene	ND	0.40	83	83	0.0				70 - 130	30	
trans-1,4-dichloro-2-butene	ND	5.0	116	114	1.7				70 - 130	30	
Trichloroethene	ND	1.0	81	83	2.4				70 - 130	30	
Trichlorofluoromethane	ND	1.0	103	103	0.0				70 - 130	30	
Trichlorotrifluoroethane	ND	1.0	92	92	0.0				70 - 130	30	
Vinyl chloride	ND	1.0	108	109	0.9				70 - 130	30	
% 1,2-dichlorobenzene-d4	97	%	101	100	1.0				70 - 130	30	
% Bromofluorobenzene	96	%	103	103	0.0				70 - 130	30	
% Dibromofluoromethane	98	%	94	94	0.0				70 - 130	30	
% Toluene-d8	95	%	101	101	0.0				70 - 130	30	

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 534484 (ug/L), QC Sample No: CG16249 (CG16249)

Oxygenates - Ground Water

Ethanol	ND	200	130	125	3.9	147	125	16.2	70 - 130	30	m
tert-amyl methyl ether	ND	10	105	104	1.0	99	110	10.5	70 - 130	30	
tert-butyl alcohol	ND	25	99	105	5.9	106	101	4.8	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
June 24, 2020

Wednesday, June 24, 2020

Criteria: MA: S1

State: MA

Sample Criteria Exceedances Report

GCG16249 - GZA-MA

SampNo	Acode	Phoenix Analyte	Criteria	Result	RL	Criteria	RL Criteria	Analysis Units

*** No Data to Display ***

Phoenix Laboratories does not assume responsibility for the data contained in this exceedance report. It is provided as an additional tool to identify requested criteria exceedences. All efforts are made to ensure the accuracy of the data (obtained from appropriate agencies). A lack of exceedence information does not necessarily suggest conformance to the criteria. It is ultimately the site professional's responsibility to determine appropriate compliance.

MassDEP Analytical Protocol Certification Form

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

Project Location: RUSTCRAFT RD **RTN:**

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

CG16249, CG16250

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 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, June 24, 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

June 24, 2020

SDG I.D.: GCG16249

SDG Comments

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

504.1

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

Instrument:

CHEM35 06/19/20-1 Chelsey Guerette, Chemist 06/19/20

CG16249 (1X)

The initial calibration (CHEM35/504tcp_0616): 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 534058 (CG15904)

CG16249

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.

Batch 534432 (CG17807)

CG16249

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.

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 06/23/20-1 Dustin Harrison, Greg Danielewski, Chemist 06/23/20

CG16249

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.

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MCP Certification Report

June 24, 2020

SDG I.D.: GCG16249

Cyanide Narration

QC (Batch Specific):

Batch 534557 (CG16095)

CG16249

All LCS recoveries were within 90 - 110 with the following exceptions: None.
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 06/17/20-1 Dustin Harrison, Chemist 06/17/20

CG16249

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 534002 (CG15845)

CG16249

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 06/18/20 07:25 Rick Schweitzer, Chemist 06/18/20

CG16249, CG16250

The method preparation blank, ICB, and CCBs contain all of the acids and reagents as the samples.
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 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.

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Certification Report

June 24, 2020

SDG I.D.: GCG16249

Mercury Narration

QC (Batch Specific):

Batch 534066 (CG15592)

CG16249, CG16250

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 06/18/20 08:51 Tina Hall, Chemist 06/18/20

CG16249, CG16250

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 533991 (CG15898)

CG16249, CG16250

All LCS recoveries were within 80 - 120 with the following exceptions: None.
All LCSD recoveries were within 80 - 120 with the following exceptions: None.
All LCS/LCSD RPDs were less than 20% with the following exceptions: None.
Additional: LCS acceptance range is 80-120% MS acceptance range 75-125%.

LACHAT

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

Instrument:

LACHAT 06/19/20-1 Thomas Budz, Chemist 06/19/20

CG16249

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 534360 (CG15506)

CG16249

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MCP Certification Report

June 24, 2020

SDG I.D.: GCG16249

LACHAT

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 06/19/20-1 Kandi Della Bella, Chemist 06/19/20

CG16249 , CG16250

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 534065 (CG14231)

CG16249, CG16250

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-ECD8 06/18/20-1 Saadia Chudary, Chemist 06/18/20

CG16249 (1X)

The initial calibration (PC601AI) RSD for the compound list was less than 20% except for the following compounds: None.
The initial calibration (PC601BI) 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 533978 (CG13924)

CG16249

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.
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

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SDG I.D.: GCG16249

PCB Narration

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 06/22/20-1

CG16249

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 534247 (CG16069)

CG16249

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 534161 (Samples: CG16249): -----

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. (4-Chloroaniline, Benzidine, Bis(2-ethylhexyl)phthalate, Di-n-octylphthalate)

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. (3,3''-Dichlorobenzidine, 3-Nitroaniline, 4-Chloroaniline, 4-Nitrophenol, Aniline, Benzyl butyl phthalate, Bis(2-ethylhexyl)phthalate, Di-n-butylphthalate, Di-n-octylphthalate, Pentachloronitrobenzene)

The LCS/LCSD RPD exceeds the method criteria for one or more surrogates, therefore there may be variability in the reported result. (% Terphenyl-d14)

Instrument:

CHEM07 06/22/20-1 Wes Bryon, Chemist 06/22/20

CG16249 (1X)

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 (CHEM07/7_SPLIT_0612):
100% of target compounds met criteria.

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SVOA Narration

The following compounds had %RSDs >20%: None.
The following compounds did not meet recommended response factors: 2-Nitrophenol 0.067 (0.1)
The following compounds did not meet a minimum response factors: None.

Continuing Calibration Verification (CHEM07/0622_03-7_SPLIT_0612) (MCP Compliance):
Internal standard areas were within 50 to 200% of the initial calibration with the following exceptions: None.
99% 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: 2-Nitrophenol 0.066 (0.1)
The following compounds did not meet minimum response factors: None.

QC (Batch Specific):

Batch 534161 (CG16166)

CG16249

All LCS recoveries were within 40 - 140 with the following exceptions: None.
All LCSD recoveries were within 40 - 140 with the following exceptions: 4-Chloroaniline(19%), Benzidine(<10%), Bis(2-ethylhexyl)phthalate(33%), Di-n-octylphthalate(33%)
All LCS/LCSD RPDs were less than 20% with the following exceptions: % Terphenyl-d14(94.7%), 3,3'-Dichlorobenzidine(35.8%), 3-Nitroaniline(42.2%), 4-Chloroaniline(129.0%), 4-Nitrophenol(25.5%), Aniline(42.0%), Benzyl butyl phthalate(38.5%), Bis(2-ethylhexyl)phthalate(96.1%), Di-n-butylphthalate(26.8%), Di-n-octylphthalate(100.8%), Pentachloronitrobenzene(37.2%)
A LCS and LCS Duplicate were performed instead of a matrix spike and matrix spike duplicate.
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 06/19/20-1 Adam Werner, Chemist 06/19/20

CG16249 (1X)

Initial Calibration Evaluation (CHEM22/DIOX_0303):
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 (CHEM22/0619_04-DIOX_0303) (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.

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SVOA-Dioxane

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

QC (Batch Specific):

Batch 534156 (CG16572)

CG16249

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 30% 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

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SDG I.D.: GCG16249

SVOASIM Narration

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

QC Batch 534007 (Samples: CG16249): -----

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. (Naphthalene)

The LCS/LCSD RPD exceeds the method criteria for one or more surrogates, therefore there may be variability in the reported result. (% Nitrobenzene-d5)

QC Batch 534161 (Samples: CG16249): -----

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. (% Terphenyl-d14)

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. (Benz(a)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. (Benzo(a)pyrene, Benzo(ghi)perylene, Benzo(k)fluoranthene, Dibenz(a,h)anthracene, Indeno(1,2,3-cd)pyrene, 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. (Benz(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Dibenz(a,h)anthracene, Fluoranthene, Hexachlorobenzene, Indeno(1,2,3-cd)pyrene, N-Nitrosodimethylamine)

The LCS/LCSD RPD exceeds the method criteria for one or more analytes, therefore there may be variability in the reported result. (Benzo(ghi)perylene, Chrysene, Pyrene)

The LCS/LCSD RPD exceeds the method criteria for one or more surrogates, therefore there may be variability in the reported result. (% Terphenyl-d14)

Instrument:

CHEM27 06/21/20-1 Matt Richard, Chemist 06/21/20

CG16249 (1X)

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

Initial Calibration Evaluation (CHEM27/27_SIM18_0604):
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 (CHEM27/0621_03-27_SIM18_0604) (MCP Compliance):
Internal standard areas were within 50 to 200% of the initial calibration with the following exceptions: None.

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June 24, 2020

SDG I.D.: GCG16249

SVOASIM Narration

94% 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 534007 (CG15375)

CG16249

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: % Nitrobenzene-d5(25.9%), Naphthalene(21.4%)
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%)

Batch 534161 (CG16166)

CG16249

All LCS recoveries were within 40 - 140 with the following exceptions: Benz(a)anthracene(146%), Hexachlorocyclopentadiene(28%)
All LCSD recoveries were within 40 - 140 with the following exceptions: % Terphenyl-d14(34%), Benzo(a)pyrene(35%), Benzo(ghi)perylene(31%), Benzo(k)fluoranthene(28%), Dibenz(a,h)anthracene(33%), Hexachlorocyclopentadiene(30%), Indeno(1,2,3-cd)pyrene(33%), Pyridine(<10%)
All LCS/LCSD RPDs were less than 20% with the following exceptions: % Terphenyl-d14(91.2%), Benz(a)anthracene(76.8%), Benzo(a)pyrene(93.1%), Benzo(b)fluoranthene(89.5%), Benzo(ghi)perylene(94.9%), Benzo(k)fluoranthene(91.3%), Chrysene(76.6%), Dibenz(a,h)anthracene(101.5%), Fluoranthene(32.7%), Hexachlorobenzene(56.4%), Indeno(1,2,3-cd)pyrene(100.0%), N-Nitrosodimethylamine(21.8%), Pyrene(32.9%)
A LCS and LCS Duplicate were performed instead of a matrix spike and matrix spike duplicate.
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? Yes.

Instrument:

CHEM17 06/19/20-1 Michael Hahn, Chemist 06/19/20

CG16249 (1X)

Chem 17 is a 25ml purge instrument. The laboratory minimum response factor is set at 0.01 instead of 0.05 for the 25ml purge instruments.
EPA method 8260D Table 4 supports this approach.

Initial Calibration Evaluation (CHEM17/VT-061820):
94% of target compounds met criteria.
The following compounds had %RSDs >20%: 1,2-Dibromo-3-chloropropane 33% (20%), Acetone 32% (20%), Bromoform 27%

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VOA Narration

(20%), Tetrahydrofuran (THF) 27% (20%), trans-1,4-dichloro-2-butene 23% (20%)
The following compounds did not meet Table 4 recommended minimum response factors: 1,2-Dibromo-3-chloropropane 0.030 (0.05), 2-Hexanone 0.055 (0.1), 4-Methyl-2-pentanone 0.059 (0.1), Acetone 0.030 (0.1), Acrylonitrile 0.033 (0.05), Bromoform 0.062 (0.1), Methyl ethyl ketone 0.035 (0.1), Tetrachloroethene 0.188 (0.2), Tetrahydrofuran (THF) 0.025 (0.05), trans-1,4-dichloro-2-butene 0.046 (0.05)
The following compounds did not meet the minimum response factor of 0.05: 1,2-Dibromo-3-chloropropane 0.030 (0.05), Acetone 0.030 (0.05), Acrylonitrile 0.033 (0.05), Methyl ethyl ketone 0.035 (0.05), Tetrahydrofuran (THF) 0.025 (0.05), trans-1,4-dichloro-2-butene 0.046 (0.05)

Continuing Calibration Verification (CHEM17/0619_02-VT-061820) (MCP Compliance):
Internal standard areas were within 50 to 200% of the initial calibration with the following exceptions: None.
99% 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 Table 4 recommended minimum response factors: 1,1,2,2-Tetrachloroethane 0.281 (0.3), 1,2-Dibromo-3-chloropropane 0.030 (0.05), 2-Hexanone 0.049 (0.1), 4-Methyl-2-pentanone 0.057 (0.1), Acetone 0.024 (0.1), Acrylonitrile 0.035 (0.05), Bromoform 0.079 (0.1), Methyl ethyl ketone 0.033 (0.1), Tetrachloroethene 0.175 (0.2), Tetrahydrofuran (THF) 0.021 (0.05), trans-1,4-dichloro-2-butene 0.045 (0.05)
The following compounds did not meet the minimum MCP response factor of 0.05: 1,2-Dibromo-3-chloropropane 0.030 (0.05), 2-Hexanone 0.055 (0.05), Acetone 0.030 (0.05), Acrylonitrile 0.033 (0.05), Methyl ethyl ketone 0.035 (0.05), Tetrahydrofuran (THF) 0.025 (0.05), trans-1,4-dichloro-2-butene 0.046 (0.05)

QC (Batch Specific):

Batch 534487 (CG15615) CHEM17 6/19/2020-1

CG16249(1X)

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.
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 06/19/20-1 Michael Hahn, Chemist 06/19/20

CG16249 (1X)

Initial Calibration Evaluation (CHEM17/OXY061820):
90% of target compounds met criteria.
The following compounds had %RSDs >20%: Ethanol 30% (20%)
The following compounds did not meet recommended response factors: None.
The following compounds did not meet a minimum response factors: None.

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MCP Certification Report

June 24, 2020

SDG I.D.: GCG16249

VOA-OXY Narration

Continuing Calibration Verification (CHEM17/0619_02-OXY061820) (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 534484 (CG16249) CHEM17 6/19/2020-1

CG16249(1X)

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.
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 2.0 °C Pg 1 of 4

PHOENIX
Environmental Laboratories, Inc.

CHAIN OF CUSTODY RECORD

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Client Services (860) 645-8726

Data Delivery/Contact Options:
☐ Fax:
☐ Phone:
☐ Email: Adam.Swedersas@GZA.com

Customer: GZA GeoEnvironmental
Address: 249 Vanderbilt Ave
Norwood, MA 02062

Project: Rustcraft Rd 174659
Report to: Adam Swedersas | Ali Chadwick
Invoice to:
QUOTE #
Project P.O:

This section MUST be completed with Bottle Quantities.

Sampler's Signature: [signature] Date: 6/16

Client Sample - Information - Identification

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

PHOENIX USE ONLY SAMPLE #	Customer Sample Identification	Sample Matrix	Date Sampled	Time Sampled	Metals (Hardness, Tri Cr)	EPH	VPH	PCB	Cyanide	Oil & Grease	EDB	TSS, TCL Cld, Tri Cr Hexa	VOCs	Ammonia	Phenol	GL Amber 8 oz. wide	Soil VOA Vials [ ] methanol [ ] TSP	GL Soil container ( ) oz	GL Soil container ( ) oz	40 ml VOA Vial #1 As is #3 HCl	GL Amber 1000ml #2 As is #1 H2SO4	PL As is [ ] 250ml [ ] 500ml [ ] 1000ml	PL H2SO4 #1 250ml [ ] 500ml	PL HNO3 250ml	PL NaOH 250ml	Bacteria Bottle w/thio	Bacteria Bottle as is
16249	MW-106	GW	6/16/20	12:00	X	X	X	X	X	X	X	X	X	X		1	2			4/3	3/1	1	1	1	1		
16250	RW-1	SW	6/16/20	9:45	X								X										1	1			

Relinquished by:	Accepted by:	Date:	Time:
[signature]	[signature]	6/17/20	12:05
	[signature]	6/17/20	16:57

Comments, Special Requirements or Regulations:
Metals: Antimony, Arsenic, Cadmium, Cr +/V, Copper, Lead, Mercury, Nickel, Selenium, Silver, Zinc, Iron

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: _____

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

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

GCG 16249

MAG910000
NHG910000

4. Influent and Effluent Characteristics

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

GCG 16249

MAG910000
NHG910000

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

GCG 16249

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								100 µg/L	---
Naphthalene								20 µg/L	---
E. Halogenated SVOCs									
Total PCBs								0.000064 µg/L	---
Pentachlorophenol								1.0 µg/L	---
F. Fuels Parameters									
Total Petroleum Hydrocarbons								5.0 mg/L	---
Ethanol								Report mg/L	---
Methyl-tert-Butyl Ether								70 µg/L	
tert-Butyl Alcohol								120 µg/L in MA 40 µg/L in NH	---
tert-Amyl Methyl Ether								90 µg/L in MA 140 µg/L in NH	---
Other (i.e., pH, temperature, hardness, salinity, LC_{50}, additional pollutants present); if so, specify:									

Makrina Nolan

From: Makrina Nolan
Sent: Thursday, June 18, 2020 2:53 PM
To: aswederskas@gza.com
Subject: Rustcraft Rd
Attachments: GCG16249-ChainofCustody-1.pdf

Good afternoon,

We received your samples yesterday, with regards to the attached chain. Unfortunately, sample "MW-106" was received past hold for HexChrome. This sample will be analyzed for HexChrome and reported to you past hold with a comment on the report to reflect this.

Please let me know if you have any questions.

Thank you,

Makrina Nolan
Client Services –Project Manager
Drinking Water Specialist
Phoenix Environmental Labs
587 Middle Turnpike East
Manchester, CT
Direct Line: 860-645-3219
Website: www.phoenixlabs.com

APPENDIX C

CALCULATION SHEETS FOR EFFLUENT LIMITATIONS

Enter number values in green boxes below

Enter values in the units specified

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

Enter a dilution factor, if other than zero

0

Enter values in the units specified

133	C_d = Enter influent hardness in **mg/L** $CaCO_3$
80.4	C_s = Enter receiving water hardness in **mg/L** $CaCO_3$

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

7.4	pH in **Standard Units**
17.4	Temperature in **°C**
0	Ammonia in **mg/L**
80.4	Hardness in **mg/L** $CaCO_3$
0	Salinity in **ppt**
0	Antimony in **µg/L**
0	Arsenic in **µg/L**
0	Cadmium in **µg/L**
0	Chromium III in **µg/L**
0	Chromium VI in **µg/L**
5	Copper in **µg/L**
452	Iron in **µg/L**
0	Lead in **µg/L**
0	Mercury in **µg/L**
1	Nickel in **µg/L**
0	Selenium in **µg/L**
0	Silver in **µg/L**
12	Zinc in **µg/L**

Enter **influent** concentrations in the units specified

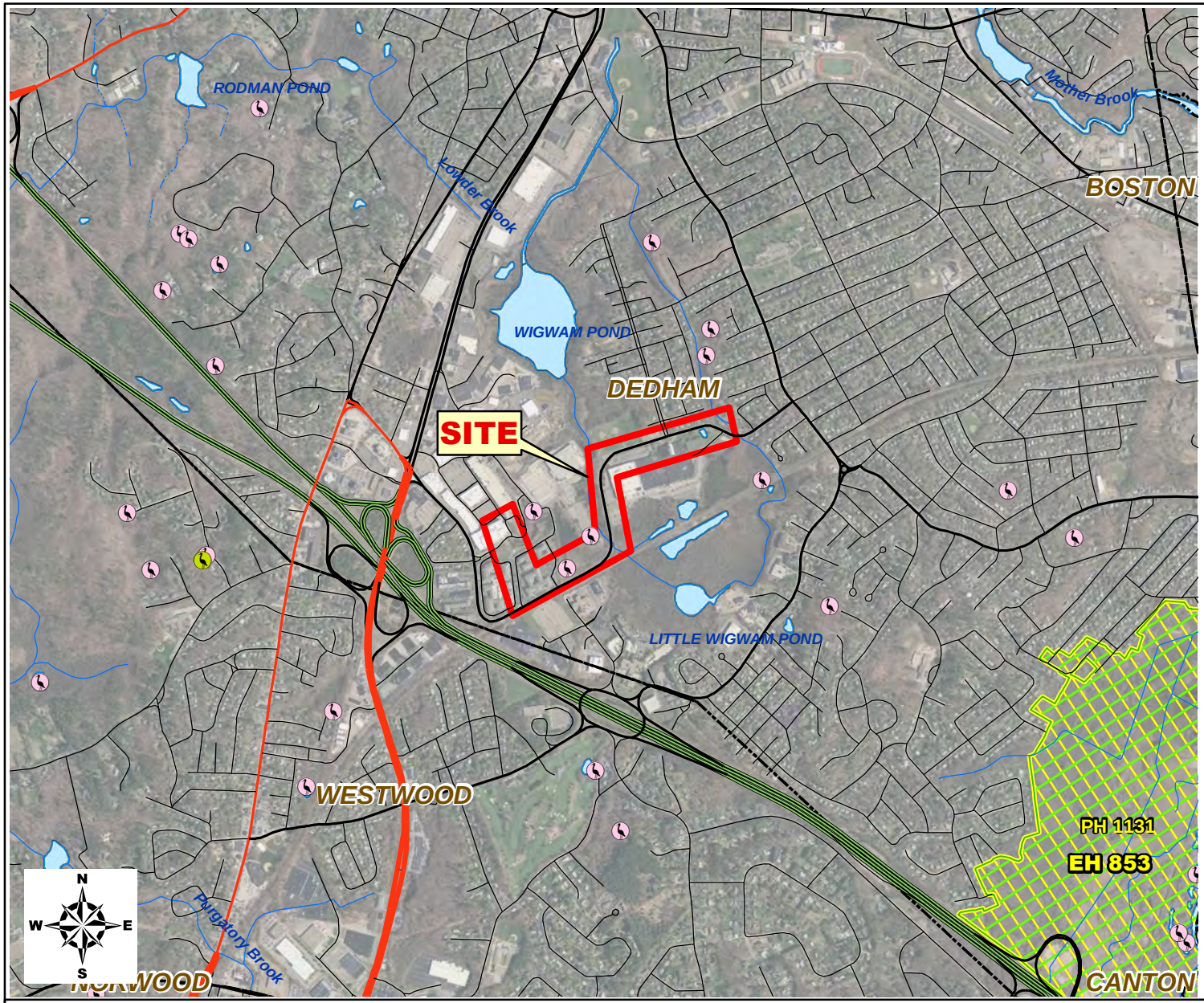
↓	
0	TRC in **µg/L**
1.2	Ammonia in **mg/L**
0	Antimony in **µg/L**
8	Arsenic in **µg/L**
0	Cadmium in **µg/L**
4	Chromium III in **µg/L**
0	Chromium VI in **µg/L**
12	Copper in **µg/L**
16900	Iron in **µg/L**
15	Lead in **µg/L**
0	Mercury in **µg/L**
3	Nickel in **µg/L**
0	Selenium in **µg/L**
0	Silver in **µg/L**
27	Zinc in **µg/L**
0	Cyanide in **µg/L**
0	Phenol in **µg/L**
0	Carbon Tetrachloride in **µg/L**
0	Tetrachloroethylene in **µg/L**
0	Total Phthalates in **µg/L**
0	Diethylhexylphthalate in **µg/L**
0	Benzo(a)anthracene in **µg/L**
0	Benzo(a)pyrene in **µg/L**
0	Benzo(b)fluoranthene in **µg/L**
0	Benzo(k)fluoranthene in **µg/L**
0.08	Chrysene in **µg/L**
0	Dibenzo(a,h)anthracene in **µg/L**
0	Indeno(1,2,3-cd)pyrene in **µg/L**
0	Methyl-tert butyl ether in **µg/L**

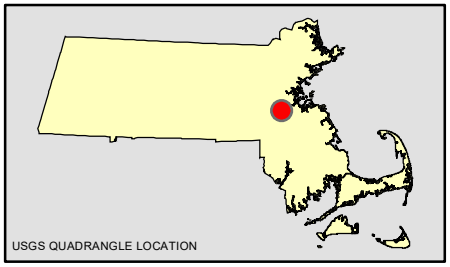
Dilution Factor	1.0			
	TBEL applies if bolded		WQBEL applies if bolded	
A. Inorganics				
Ammonia	**Report**	mg/L	---	
Chloride	**Report**	µg/L	---	
Total Residual Chlorine	0.2	mg/L	**11**	µg/L
Total Suspended Solids	**30**	mg/L	---	
Antimony	**206**	µg/L	640	µg/L
Arsenic	**104**	µg/L	10	µg/L
Cadmium	**10.2**	µg/L	0.3343	µg/L
Chromium III	**323**	µg/L	108.9	µg/L
Chromium VI	**323**	µg/L	11.4	µg/L
Copper	242	µg/L	**11.9**	µg/L
Iron	5000	µg/L	**1000**	µg/L
Lead	160	µg/L	**4.57**	µg/L
Mercury	**0.739**	µg/L	0.91	µg/L
Nickel	**1450**	µg/L	66.4	µg/L
Selenium	**235.8**	µg/L	5.0	µg/L
Silver	**35.1**	µg/L	6.2	µg/L
Zinc	**420**	µg/L	152.6	µg/L
Cyanide	**178**	mg/L	5.2	µg/L
B. Non-Halogenated VOCs				
Total BTEX	**100**	µg/L	---	
Benzene	**5.0**	µg/L	---	
1,4 Dioxane	**200**	µg/L	---	
Acetone	**7970**	µg/L	---	
Phenol	**1,080**	µg/L	300	µg/L
C. Halogenated VOCs				
Carbon Tetrachloride	**4.4**	µg/L	1.6	µg/L
1,2 Dichlorobenzene	**600**	µg/L	---	
1,3 Dichlorobenzene	**320**	µg/L	---	
1,4 Dichlorobenzene	**5.0**	µg/L	---	
Total dichlorobenzene	**---**	µg/L	---	
1,1 Dichloroethane	**70**	µg/L	---	
1,2 Dichloroethane	**5.0**	µg/L	---	
1,1 Dichloroethylene	**3.2**	µg/L	---	
Ethylene Dibromide	**0.05**	µg/L	---	
Methylene Chloride	**4.6**	µg/L	---	
1,1,1 Trichloroethane	**200**	µg/L	---	
1,1,2 Trichloroethane	**5.0**	µg/L	---	
Trichloroethylene	**5.0**	µg/L	---	
Tetrachloroethylene	**5.0**	µg/L	3.3	µg/L
cis-1,2 Dichloroethylene	**70**	µg/L	---	

Vinyl Chloride	**2.0**	µg/L	---	
D. Non-Halogenated SVOCs				
Total Phthalates	190	µg/L	---	µg/L
Diethylhexyl phthalate	**101**	µg/L	2.2	µg/L
Total Group I Polycyclic Aromatic Hydrocarbons	**1.0**	µg/L	---	
Benzo(a)anthracene	**1.0**	µg/L	0.0038	µg/L
Benzo(a)pyrene	**1.0**	µg/L	0.0038	µg/L
Benzo(b)fluoranthene	**1.0**	µg/L	0.0038	µg/L
Benzo(k)fluoranthene	**1.0**	µg/L	0.0038	µg/L
Chrysene	1.0	µg/L	**0.0038**	µg/L
Dibenzo(a,h)anthracene	**1.0**	µg/L	0.0038	µg/L
Indeno(1,2,3-cd)pyrene	**1.0**	µg/L	0.0038	µg/L
Total Group II Polycyclic Aromatic Hydrocarbons	**100**	µg/L	---	
Naphthalene	**20**	µg/L	---	
E. Halogenated SVOCs				
Total Polychlorinated Biphenyls	**0.000064**	µg/L	---	
Pentachlorophenol	**1.0**	µg/L	---	
F. Fuels Parameters				
Total Petroleum Hydrocarbons	**5.0**	mg/L	---	
Ethanol	**Report**	mg/L	---	
Methyl-tert-Butyl Ether	**70**	µg/L	20	µg/L
tert-Butyl Alcohol	**120**	µg/L	---	
tert-Amyl Methyl Ether	**90**	µg/L	---	

APPENDIX D

ACEC AND FEDERALLY LISTED ENDANGERED AND THREATENED SPECIES IN MASSACHUSETTS EVALUATION





LEGEND

- NHESP Estimated Habitats of Rare Wildlife: Use with MA Wetlands Protection Act (310 CMR 10.14)
- NHESP Priority Habitats of State-Listed Rare Species: Use with MA Wetlands Protection Act (310 CMR 10.14)
- NHESP Vernal Pools: Certified, Potential

Hydrography

- Lake, Pond, Wide River, Impoundment
- Reservoir (with PWSID)
- Tidal Flats, Shoals

Rivers and Streams

- Stream
- Intermittent Stream
- Shoreline

MassDOT (formerly MHD-OTP) Roads

- Limited Access Highway
- Multi-Lane Highway, Unlimited Access
- Other Numbered Highway
- Major Road - Connector
- Minor Street or Road

SOURCE:

Priority and Estimated Habitats have been delineated by the Natural Heritage and Endangered Species Program of the Division of Fisheries and Wildlife. These layers are used for screening Projects and Activities that may impact state-listed rare species and their habitats. Priority and Estimated Habitat maps have been delineated based on the Best Scientific Evidence Available and according to the regulations of the Massachusetts Endangered Species Act (321 CMR 10.12) using documented records of rare species and various spatial layers.

The NHESP data was supplied by MassGIS in September 2017, December 2018 and May 2020, the MassDOT Roads data was supplied by MassGIS in September 2019 and the Hydrography & Rivers and Streams data was supplied by MassGIS in December 2019.

The Color Ortho Imagery was acquired for the U. S. Geological Survey in Spring 2013 & 2014 by Fugro Earthdata, Inc. Ground control points were collected by TerraSurv, Inc. The Web Map Service was distributed by MassGIS on April 20, 2017.

0 1,000 2,000 4,000

SCALE IN FEET

PRIORITY HABITAT AND ESTIMATED HABITAT
NATURAL HERITAGE & ENDANGERED SPECIES PROGRAM

RUSTCRAFT ROAD SEWER IMPROVEMENTS, CONTRACT 20-1
DEDHAM, MASSACHUSETTS

GZA GeoEnvironmental, Inc.
Engineers and Scientists
www.gza.com

JOB NO. 02.0174659.00

PROJ. MGR.: ACS
DESIGNED BY.: JJS
REVIEWED BY.: BWR
OPERATOR.: EMD
DATE: 05-11-2020

FIGURE NO. **2**

United States Department of the Interior

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

In Reply Refer To: July 09, 2020
Consultation Code: 05E1NE00-2020-SLI-3220
Event Code: 05E1NE00-2020-E-09805
Project Name: Rustcraft Road Sewer 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-3220

Event Code: 05E1NE00-2020-E-09805

Project Name: Rustcraft Road Sewer Improvements

Project Type: LAND - RESTORATION / ENHANCEMENT

Project Description: Sewer Improvements

Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/place/42.229256156190466N71.17198437494082W

Counties: Norfolk, 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.

Mammals

NAME	STATUS
Northern Long-eared Bat *Myotis septentrionalis* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9045	Threatened

Critical habitats

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

ATTACHMENT 6

Evaluation of Long-Eared Bat Habitat

Rustcraft Road

Dedham, Massachusetts

The northern long-eared bat (*Myotis septentrionalis*) has a federal status of Threatened and a state status of Endangered within Massachusetts.

The northern long-eared bat is a migratory species which utilizes a variety of habitats during the year depending on the season. Between early November and April, this species hibernates in crevices in portions of caves and abandoned mine shafts which have high humidity, constant temperatures, and little air flow. Individuals tend to return to the same hibernaculum from year to year although they are also known to sometimes use other hibernacula. Hibernacula are generally located within approximately 35 miles of summer foraging habitat. Between April and October, northern long-eared bats roost and forage in forested areas. Preferred roost sites include clusters of large, live or dead, hardwood trees with cavities or peeling bark. Preferred foraging sites include wooded areas around vernal pools or small ponds or along streams. Thus, transitional zones between forested uplands and wetlands represent prime summer roosting and foraging habitat.

The parcel along Rustcraft Road in Dedham Massachusetts is located within a busy and densely developed area. There are active town streets along the boundaries of the Site associated with both the Legacy Place shopping complex and an MBTA facility. The project will occur within the boundaries of the street for the improvement of the existing sewer network. The developed areas and the regular disturbances from noise from traffic along town streets make this area a poor habitat for northern long-eared bats. It is unlikely that this species utilizes this area.

APPENDIX E

MACRIS SEARCH RESULTS

Massachusetts Cultural Resource Information System

MACRIS

MACRIS Search Results

Search Criteria: Town(s): Dedham; Street Name: Rustcraft; Resource Type(s): Building, Burial Ground, Structure;

Inv. No.	Property Name	Street	Town	Year