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www.gza.com

February 18, 2022
File No. 18.0175203.00

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)
13 Corwin Street
Peabody, Massachusetts

Dear Ms. Little:

GZA GeoEnvironmental, Inc. (GZA), on behalf CV 13 Corwin, LLC., is submitting the attached Notice of Intent (NOI; Appendix A) for a Remediation General Permit (RGP) for 13 Corwin Street (the Site) in Peabody Massachusetts. The NOI and RGP are required for dewatering activities because the project site is a Massachusetts Contingency Plan (MCP; 310 CMR 40.0000) disposal site with documented impacts to groundwater.

BACKGROUND

The 6.5-acre Site is located at 13 Corwin Street in a commercial (office and warehouse), retail, and residential area of Peabody, Massachusetts. The Site includes ten 1-2 story, masonry, brick-faced and/or corrugated metal buildings. The buildings are surrounded by paved parking and access areas and/or landscaped areas. CV 13 Corwin, LLC. intends to demolish the existing buildings and construct an approximately 60,000-square-foot cross-dock warehouse building. The proposed development includes the construction of the warehouse building, associated parking areas, access drives, and limited sidewalks/landscaping.

The Site is listed five times as a MassDEP disposal site under Release Tracking Numbers (RTNs) 3-19465, 3-20214, 3-23352, 3-25318, and 3-0413. Four of the disposal sites each have achieved regulatory closure through the submittal of a Class A-1 Response Action Outcome (RAO) under the MCP.

The fifth disposal site (RTN 3-0413) has reached regulatory closure under the MCP through the submittal of a Class-A-3 RAO with the implementation of an Activity and Use Limitation (AUL). Soil and groundwater have been impacted by inorganics, volatile organic compounds (VOCs), and semi-volatile organic compounds (SVOCs).

NOTICE OF INTENT

GZA is submitting this NOI to request authorization for the discharge of treated groundwater from the Site to the existing on-site stormwater drainage system. The treated groundwater will be discharged to a storm drain located on the property which discharges to Goldthwait Brook (MA93-05).

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 and a dilution factor are included as Appendix C;
- A review of Areas of Critical Environmental Concern (ACEC) indicate that the proposed discharge does not go to an ACEC. A review of Federally Listed Endangered and Threatened Species in Massachusetts indicates that a Northern Long-eared Bat habitat is located state-wide but is not likely to be present at the Site. A 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);
- A review of the Massachusetts Geographic Information System (MassGIS) MassDEP Priority Resources Map of Peabody 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";
- A review of the electronic Massachusetts Cultural Resource Information System database, made available through the Massachusetts Historical Commission, indicates 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 to such properties associated with this discharge. 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
Project Manager

Randy J. Meuse
Principal

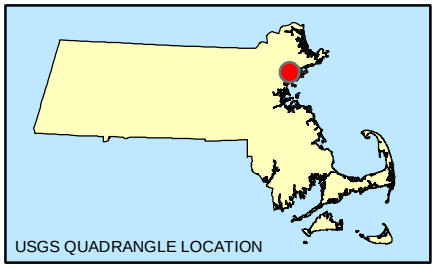
Matthew Steele
Senior Project Manager

David E. Leone, LSP
Consultant/Reviewer

Attachments
Figure 1 - Site Locus Map
Figure 2 – Discharge Outfall Location/Site Plan
Figure 3 – Groundwater Treatment System Process Flow Diagram
Figure 4 – Site Scoring Map Showing 500 Foot & ½ Mile Radii
Figure 5 – NHESP Priority Map
Appendix A - Notice of Intent Form
Appendix B – Influent and Receiving Water Laboratory Analytical Report
Appendix C – Calculation Sheets for Effluent Limitations and Dilution Factor
Appendix D – ACEC and Federally Listed Endangered and Threatened Species in Massachusetts Evaluation
Appendix E – MACRIS Search Results

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.: MLS
DESIGNED BY: WD
REVIEWED BY: DEL
OPERATOR: EMD

DATE: 11-03-2021

SITE LOCUS
SHOWING 500 FOOT & 1/2 MILE OFFSETS

NOTICE OF INTENT REMEDIATION GENERAL PERMIT
13 CORWIN STREET
PEABODY, MASSACHUSETTS

JOB NO. 18.0175203.00

FIGURE NO. 1

FIGURE 2

Site Discharge Location Plan

CB-1

PROPOSED TREATMENT SYSTEM

OUTFALL TO GOLDTHWAIT BROOK

GOLDTHWAIT BROOK

CORWIN STREET

N

W E

S

LEGEND

APPROXIMATE SITE 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 MAY 13, 2021.
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 NOVEMBER 2021.

0 30 60 120

SCALE IN FEET

NOTICE OF INTENT REMEDIATION GENERAL PERMIT
13 CORWIN STREET
PEABODY, MASSACHUSETTS

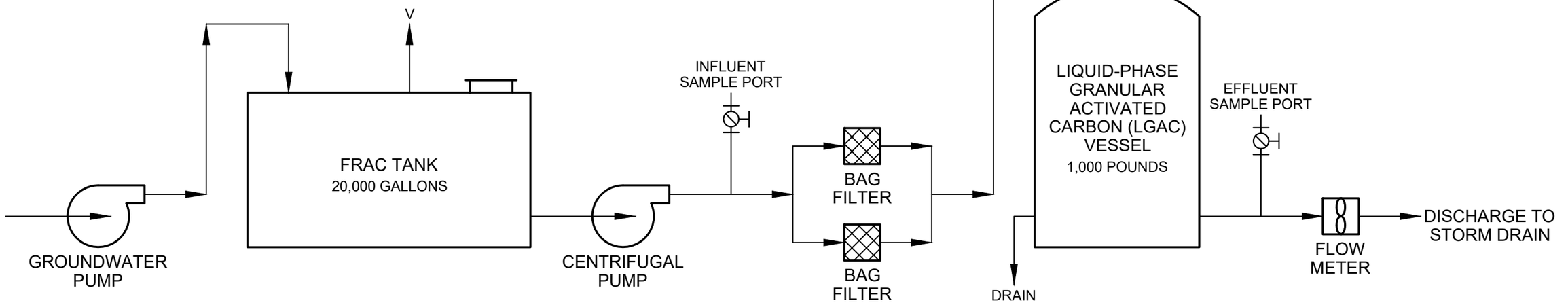
SITE PLAN DISCHARGE LOCATION

PREPARED BY: GZA GeoEnvironmental, Inc. Engineers and Scientists www.gza.com		PREPARED FOR: CARGO VENTURES c/o MP BOSTON	
PROJ MGR: MLS	REVIEWED BY: DEL	CHECKED BY: LF	FIGURE 2
DESIGNED BY: WD	DRAWN BY: EMD	SCALE: 1 " = 60 FEET	
DATE: 11/04/2021	PROJECT NO. 18.0175203.00	REVISION NO.	

FIGURE 3

Groundwater Treatment System

Process Flow Diagram



NOTICE OF INTENT REMEDIATION GENERAL PERMIT
13 CORWIN STREET
PEABODY, MASSACHUSETTS

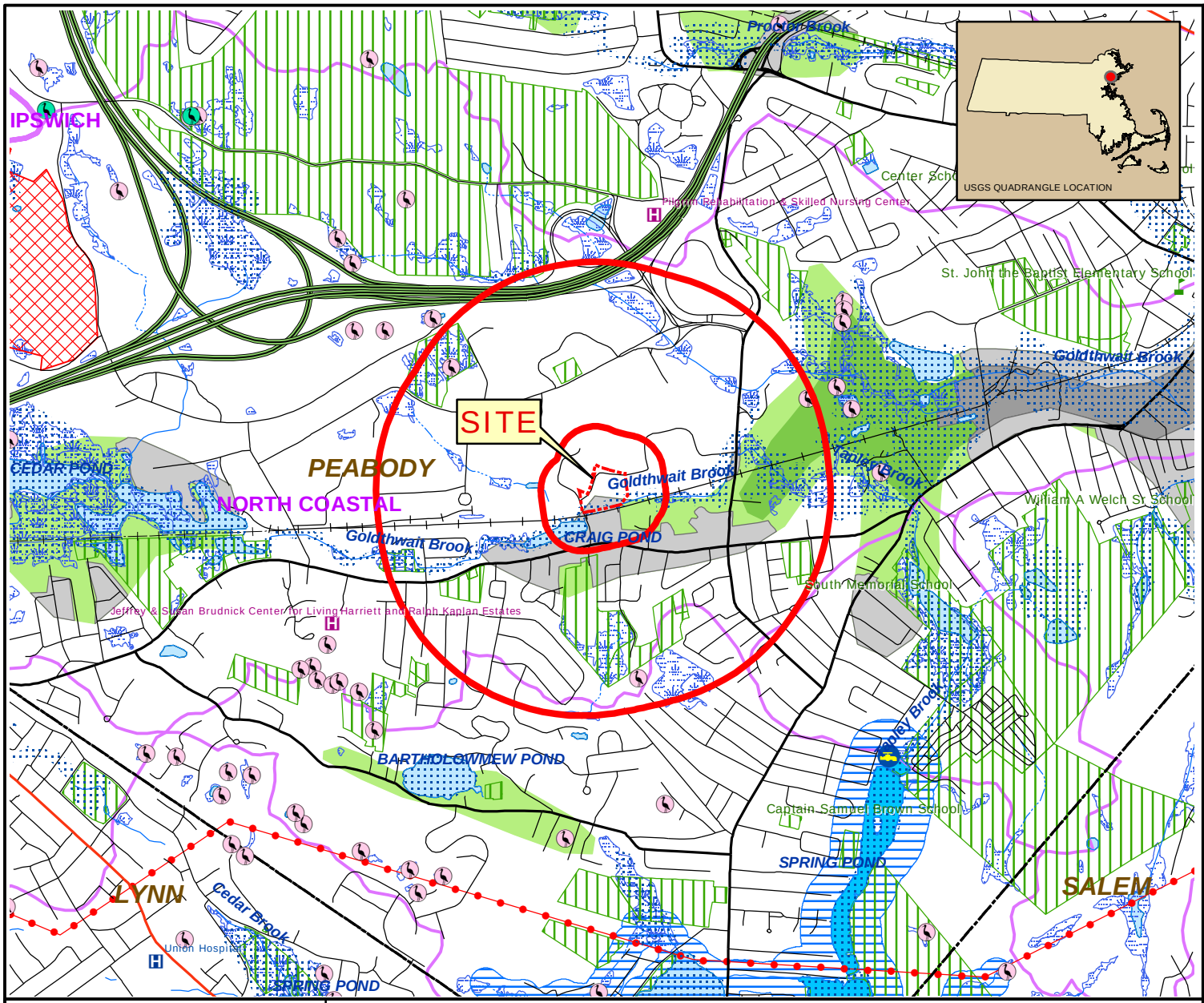
PROCESS FLOW DIAGRAM

PREPARED BY: GZA GeoEnvironmental, Inc. Engineers and Scientists www.gza.com		PREPARED FOR: CARGO VENTURES c/o MP BOSTON	
PROJ MGR: MLS	REVIEWED BY: DEL	CHECKED BY: LF	FIGURE 3
DESIGNED BY: WD	DRAWN BY: EMD	SCALE: N.T.S.	
DATE: 11-03-2021	PROJECT NO. 18.0175203.00	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 (October 2021)

N W E S

0 1,000 2,000

SCALE IN FEET

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

NOTICE OF INTENT REMEDIATION GENERAL PERMIT
13 CORWIN STREET
PEABODY, MASSACHUSETTS

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

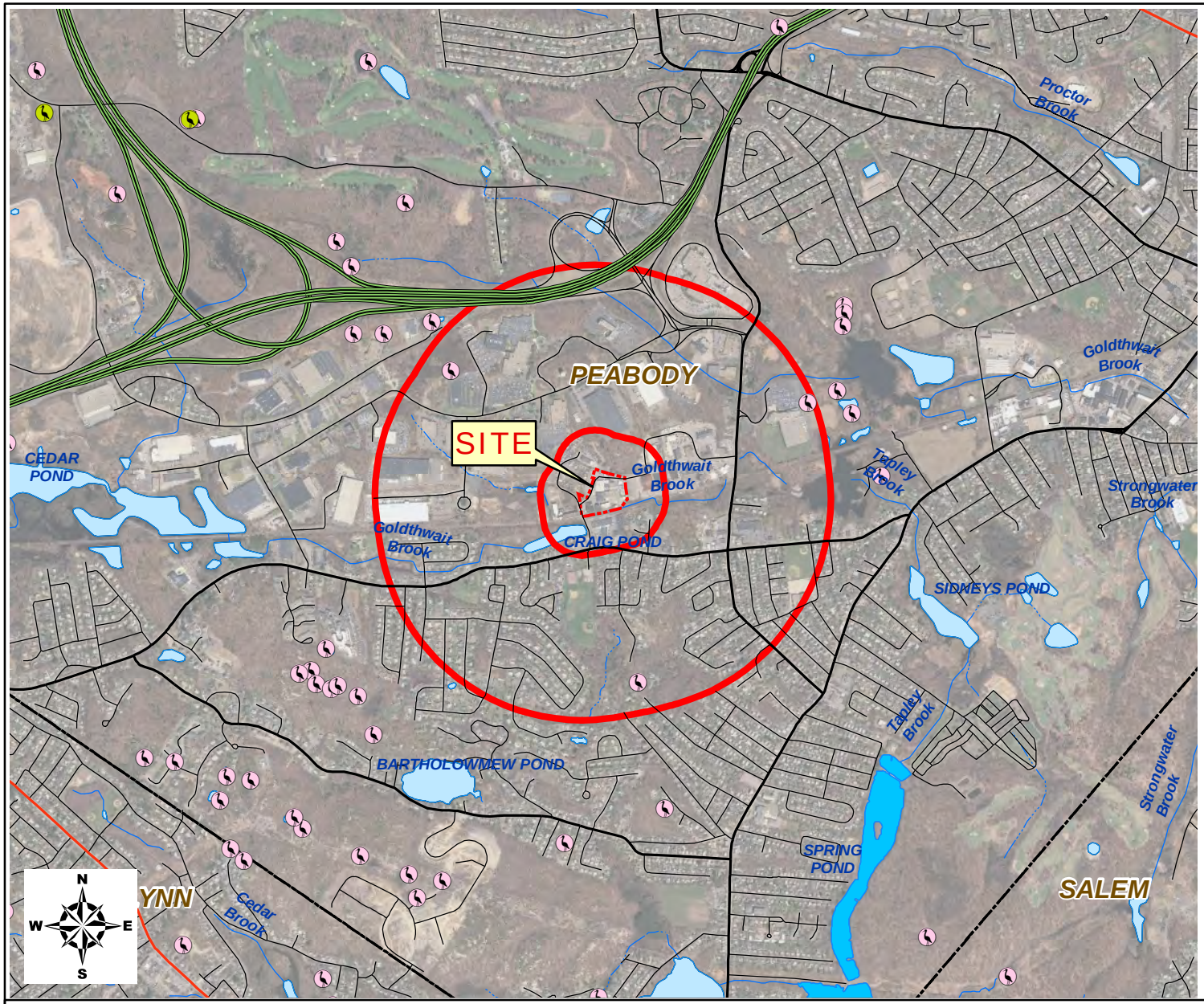
JOB NO. 175203.00

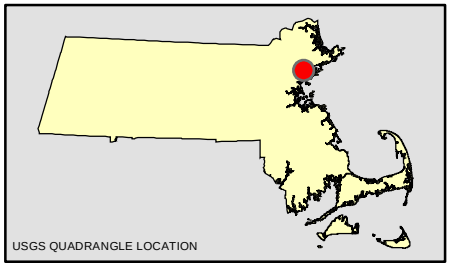
PROJ. MGR.: MLS
DESIGNED BY.: WD
REVIEWED BY.: DEL
OPERATOR.: EMD
DATE: 11-03-2021

FIGURE NO. 4

FIGURE 5

NHESP Priority Map





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 August 2021, the MassDOT Roads data was supplied by MassGIS in October 2020, and the Hydrography & Rivers and Streams data was supplied by MassGIS in October 2020.

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 October 16, 2020.

0 1,000 2,000 4,000

SCALE IN FEET

PRIORITY HABITAT AND ESTIMATED HABITAT
NATURAL HERITAGE & ENDANGERED SPECIES PROGRAM

NOTICE OF INTENT REMEDIATION GENERAL PERMIT
13 CORWIN STREET - PEABODY, MASSACHUSETTS

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

JOB NO. 18.0175203.00

PROJ. MGR.: MLS
DESIGNED BY.: WD
REVIEWED BY.: DEL
OPERATOR.: EMD
DATE: 11-03-2021

FIGURE NO. 2

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:
13 Corwin Street</td><td colspan="3">Site address: 13
Street: Corwin Street</td></tr>
<tr><td>City: Peabody</td><td>State: MA</td><td>Zip: 01960</td></tr>
<tr><td rowspan="4">2. Site owner
CV 13 Corwin, LLC

Owner is (check one): ☐ Federal ☐ State/Tribal ■ Private
☐ Other; if so, specify:</td><td colspan="3">Contact Person: Kevin Donahoe</td></tr>
<tr><td colspan="2">Telephone: 617-451-0300</td><td>Email: kdonahoe@cargoventures.com</td></tr>
<tr><td colspan="3">Mailing address: 33
Street: Arch Street, Suite 2520</td></tr>
<tr><td>City: Boston</td><td>State: MA</td><td>Zip: 02110</td></tr>
<tr><td rowspan="4">3. Site operator, if different than owner
Construction Management and Builders, Inc.</td><td colspan="3">Contact Person: Tom Tassinari</td></tr>
<tr><td colspan="2">Telephone: 781-246-9400</td><td>Email: ttassinari@cmbteam.com</td></tr>
<tr><td colspan="3">Mailing address: 75
Street: Sylvan Street, Building C</td></tr>
<tr><td>City: Danvers</td><td>State: MA</td><td>Zip: 01923</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):
3-19465, 3-20214, 3-23352, 3-25318, 3-0413
☐ 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):
Goldthwait Brook	MA93-05	Class 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. Dissolved Oxygen, Fecal Coliform (TMDL50120), E. Coli (TMDL50120), total phosphorus

4. Indicate the seven day-ten-year low flow (7Q10) of the receiving water determined in accordance with the instructions in Appendix V for sites located in Massachusetts and Appendix VI for sites located in New Hampshire.	0.135 cfs
5. Indicate the requested dilution factor for the calculation of water quality-based effluent limitations (WQBELs) determined in accordance with the instructions in Appendix V for sites in Massachusetts and Appendix VI for sites in New Hampshire.	2.21

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 received on 1/11/2022.

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

C. Source water information:

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

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

2. Source water contaminants: Ammonia, and iron	
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): 1. On-site catch basin 2. 18 inch outfall pipe to Goldthwait Brook	Outfall location(s): (Latitude, Longitude) 42°31'06.21"N 70°57'26.31"W 42°31'04.70"N 70°57'27.33"W
Discharges enter the receiving water(s) via (check any that apply): ☐ Direct discharge to the receiving water ■ Indirect discharge, if so, specify: On-site catch basin to outfall pipe to Goldwait Brook ■ 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): April 2022 through March 2023 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	SM4500	0.075	0.307		Report mg/L	---
Chloride		✔	1	300.0	12500	199000		Report µg/l	---
Total Residual Chlorine	✔		1	SM4500	0.02	<0.02		0.2 mg/L	
Total Suspended Solids	✔		1	2540D	5.0	<5.0		30 mg/L	---
Antimony	✔		1	200.8	4.0	<4.0		206 µg/L	
Arsenic	✔		1	200.8	1.0	<1.0		104 µg/L	
Cadmium	✔		1	200.8	0.2	<0.2		10.2 µg/L	
Chromium III	✔		1	200.8	10.0	<10.0		323 µg/L	
Chromium VI	✔		1	7196A	10.0	<10.0		323 µg/L	
Copper	✔		1	200.8	1.0	<1.0		242 µg/L	
Iron		✔	1	200.7	50.0	57.0		5,000 µg/L	
Lead	✔		1	200.8	1.0	<1.0		160 µg/L	
Mercury	✔		1	245.1	0.2	<0.2		0.739 µg/L	
Nickel	✔		1	200.8	2.0	<2.0		1,450 µg/L	
Selenium	✔		1	200.8	5.0	<5.0		235.8 µg/L	
Silver	✔		1	200.8	0.4	<0.4		35.1 µg/L	
Zinc	✔		1	200.8	10.0	<10.0		420 µg/L	
Cyanide	✔		1	4500CN	0.005	<0.005		178 mg/L	
B. Non-Halogenated VOCs									
Total BTEX	✔		1	624.1	1.0	<1.0		100 µg/L	---
Benzene	✔		1	624.1	1.0	<1.0		5.0 µg/L	---
1,4 Dioxane	✔		1	624.1	5.0	<5.0		200 µg/L	---
Acetone	✔		1	624.1	0.01	<0.01		7.97 mg/L	---
Phenol	✔		1	420.4	30.0	<30.0		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	1.0	<1.0		4.4 µg/L	
1,2 Dichlorobenzene	✔		1	624.1	5.0	<5.0		600 µg/L	---
1,3 Dichlorobenzene	✔		1	624.1	5.0	<5.0		320 µg/L	---
1,4 Dichlorobenzene	✔		1	624.1	5.0	<5.0		5.0 µg/L	---
Total dichlorobenzene	✔		1	624.1	5.0	<5.0		763 µg/L in NH	---
1,1 Dichloroethane	✔		1	624.1	1.5	<1.5		70 µg/L	---
1,2 Dichloroethane	✔		1	624.1	1.5	<1.5		5.0 µg/L	---
1,1 Dichloroethylene	✔		1	624.1	1.0	<1.0		3.2 µg/L	---
Ethylene Dibromide	✔		1	624.1	1.0	<1.0		0.05 µg/L	---
Methylene Chloride	✔		1	624.1	1.0	<1.0		4.6 µg/L	---
1,1,1 Trichloroethane	✔		1	624.1	2.0	<2.0		200 µg/L	---
1,1,2 Trichloroethane	✔		1	624.1	1.5	<1.5		5.0 µg/L	---
Trichloroethylene	✔		1	624.1	1.0	<1.0		5.0 µg/L	---
Tetrachloroethylene	✔		1	624.1	1.0	<1.0		5.0 µg/L	
cis-1,2 Dichloroethylene	✔		1	624.1	1.0	<1.0		70 µg/L	---
Vinyl Chloride	✔		1	624.1	1.0	<1.0		2.0 µg/L	---
D. Non-Halogenated SVOCs									
Total Phthalates	✔		1	625.1	5.0	<5.0		190 µg/L	
Diethylhexyl phthalate	✔		1	625.1	5.0	<5.0		101 µg/L	
Total Group I PAHs	✔		1	625.1	0.1	<0.1		1.0 µg/L	---
Benzo(a)anthracene	✔		1	625.1	0.1	<0.1		As Total PAHs	
Benzo(a)pyrene	✔		1	625.1	0.1	<0.1			
Benzo(b)fluoranthene	✔		1	625.1	0.1	<0.1			
Benzo(k)fluoranthene	✔		1	625.1	0.1	<0.1			
Chrysene	✔		1	625.1	0.1	<0.1			
Dibenzo(a,h)anthracene	✔		1	625.1	0.1	<0.1			
Indeno(1,2,3-cd)pyrene	✔		1	625.1	0.1	<0.1			

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	625.1	0.1	<0.1		100 µg/L	---
Naphthalene	✔		1	625.1	0.1	<0.1		20 µg/L	---
E. Halogenated SVOCs									
Total PCBs	✔		1	608.3	0.25	<0.25		0.000064 µg/L	---
Pentachlorophenol	✔		1	625.1	1.0	<1.0		1.0 µg/L	---
F. Fuels Parameters									
Total Petroleum Hydrocarbons	✔		1	1664B	4.0	<4.0		5.0 mg/L	---
Ethanol	✔		1	1671A	20.0	<20.0		Report mg/L	---
Methyl-tert-Butyl Ether	✔		1	624.1	10.0	<10.0		70 µg/L	
tert-Butyl Alcohol	✔		1	624.1	100.0	<100.0		120 µg/L in MA 40 µg/L in NH	---
tert-Amyl Methyl Ether	✔		1	624.1	20.0	<20.0		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	--	7.34 SU			
Temperature		✔	1	Field	--	48.9 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, through bag filters to LGAC.

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

Indicate if either of the following will occur (check any that apply):
☐ Chlorination ☐ De-chlorination

3. Provide the **design flow capacity** in gallons per minute (gpm) of the most limiting component. Indicate the most limiting component: Bag filters Is use of a flow meter feasible? (check one): ■ Yes ☐ No, if so, provide justification:	60 gpm
Provide the proposed maximum effluent flow in gpm.	50 gpm
Provide the average effluent flow in gpm.	30 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: Kevin Donahoe	Date: 2/15/2022
Print Name and Title: Kevin Donahoe, owner representative	

APPENDIX B – INFLUENT AND RECEIVING WATER LABORATORY ANALYTICAL REPORT

ANALYTICAL REPORT

Lab Number:	L2170386
Client:	GZA GeoEnvironmental, Inc. 249 Vanderbilt Ave Norwood, MA 02062
ATTN:	Bill Davis
Phone:	(781) 278-5769
Project Name:	13 CORWIN STREET
Project Number:	18.0174933.02
Report Date:	01/07/22

Certifications & Approvals: MA (M-MA086), NH NELAP (2064), CT (PH-0574), IL (200077), ME (MA00086), MD (348), NJ (MA935), NY (11148), NC (25700/666), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #P330-17-00196).

Eight Walkup Drive, Westborough, MA 01581-1019
508-898-9220 (Fax) 508-898-9193 800-624-9220 - www.alphalab.com

Project Name: 13 CORWIN STREET
Project Number: 18.0174933.02

Lab Number: L2170386
Report Date: 01/07/22

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2170386-01	GZ-104	WATER	PEABODY, MA	12/21/21 10:00	12/21/21
L2170386-02	SW-1	WATER	PEABODY, MA	12/21/21 11:15	12/21/21

Project Name:	13 CORWIN STREET	**Lab Number:**	L2170386
Project Number:	18.0174933.02	**Report Date:**	01/07/22

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively.

When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances, the specific failure is not narrated but noted in the associated QC Outlier Summary Report, located directly after the Case Narrative. QC information is also incorporated in the Data Usability Assessment table (Format 11) of our Data Merger tool, where it can be reviewed in conjunction with the sample result, associated regulatory criteria and any associated data usability implications.

Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

HOLD POLICY - For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Alpha Project Manager and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Project Management at 800-624-9220 with any questions.

Project Name:	13 CORWIN STREET	**Lab Number:**	L2170386
Project Number:	18.0174933.02	**Report Date:**	01/07/22

Case Narrative (continued)

Report Submission

January 07, 2022: This final report includes the results of all requested analyses.

January 06, 2022: This is a preliminary report.

The analysis of Ethanol was subcontracted. A copy of the laboratory report is included as an addendum.

Please note: This data is only available in PDF format and is not available on Data Merger.

Sample Receipt

L2170386-01 and -02: The collection times were obtained from the container labels.

Volatile Organics by Method 624

The WG1587446-3 LCS recovery, associated with L2170386-01, is above the acceptance criteria for 1,2-dichlorobenzene (140%); however, the associated sample is non-detect to the RL for this target analyte. The results of the original analysis are reported.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature: Caitlin Walukevich

Caitlin Walukevich

Title: Technical Director/Representative

Date: 01/07/22

ORGANICS

VOLATILES

Project Name: 13 CORWIN STREET
Project Number: 18.0174933.02
Lab Number: L2170386
Report Date: 01/07/22

SAMPLE RESULTS

Lab ID: L2170386-01
Client ID: GZ-104
Sample Location: PEABODY, MA

Date Collected: 12/21/21 10:00
Date Received: 12/21/21
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 128,624.1
Analytical Date: 12/23/21 10:03
Analyst: NLK

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	1.0	--	1
1,1-Dichloroethane	ND		ug/l	1.5	--	1
Carbon tetrachloride	ND		ug/l	1.0	--	1
1,1,2-Trichloroethane	ND		ug/l	1.5	--	1
Tetrachloroethene	ND		ug/l	1.0	--	1
1,2-Dichloroethane	ND		ug/l	1.5	--	1
1,1,1-Trichloroethane	ND		ug/l	2.0	--	1
Benzene	ND		ug/l	1.0	--	1
Toluene	ND		ug/l	1.0	--	1
Ethylbenzene	ND		ug/l	1.0	--	1
Vinyl chloride	ND		ug/l	1.0	--	1
1,1-Dichloroethene	ND		ug/l	1.0	--	1
cis-1,2-Dichloroethene	ND		ug/l	1.0	--	1
Trichloroethene	ND		ug/l	1.0	--	1
1,2-Dichlorobenzene	ND		ug/l	5.0	--	1
1,3-Dichlorobenzene	ND		ug/l	5.0	--	1
1,4-Dichlorobenzene	ND		ug/l	5.0	--	1
p/m-Xylene	ND		ug/l	2.0	--	1
o-xylene	ND		ug/l	1.0	--	1
Xylenes, Total	ND		ug/l	1.0	--	1
Acetone	ND		ug/l	10	--	1
Methyl tert butyl ether	ND		ug/l	10	--	1
Tert-Butyl Alcohol	ND		ug/l	100	--	1
Tertiary-Amyl Methyl Ether	ND		ug/l	20	--	1

Project Name: 13 CORWIN STREET
Project Number: 18.0174933.02
Lab Number: L2170386
Report Date: 01/07/22

SAMPLE RESULTS

Lab ID: L2170386-01
Client ID: GZ-104
Sample Location: PEABODY, MA
Date Collected: 12/21/21 10:00
Date Received: 12/21/21
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Pentafluorobenzene	94		60-140
Fluorobenzene	92		60-140
4-Bromofluorobenzene	111		60-140

Project Name: 13 CORWIN STREET
Project Number: 18.0174933.02
Lab Number: L2170386
Report Date: 01/07/22

SAMPLE RESULTS

Lab ID: L2170386-01
Client ID: GZ-104
Sample Location: PEABODY, MA

Date Collected: 12/21/21 10:00
Date Received: 12/21/21
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 128,624.1-SIM
Analytical Date: 12/23/21 10:03
Analyst: NLK

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS-SIM - Westborough Lab						
1,4-Dioxane	ND		ug/l	5.0	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Fluorobenzene	99		60-140
4-Bromofluorobenzene	89		60-140

Project Name: 13 CORWIN STREET
Project Number: 18.0174933.02

Lab Number: L2170386
Report Date: 01/07/22

SAMPLE RESULTS

Lab ID: L2170386-01
Client ID: GZ-104
Sample Location: PEABODY, MA

Date Collected: 12/21/21 10:00
Date Received: 12/21/21
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 14,504.1
Analytical Date: 12/30/21 11:39
Analyst: AMM

Extraction Method: EPA 504.1
Extraction Date: 12/30/21 09:51

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Microextractables by GC - Westborough Lab							
1,2-Dibromoethane	ND		ug/l	0.010	--	1	B

Project Name: 13 CORWIN STREET
Project Number: 18.0174933.02
Lab Number: L2170386
Report Date: 01/07/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 128,624.1
Analytical Date: 12/23/21 05:37
Analyst: NLK

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01 Batch: WG1587446-4					
Methylene chloride	ND		ug/l	1.0	--
1,1-Dichloroethane	ND		ug/l	1.5	--
Carbon tetrachloride	ND		ug/l	1.0	--
1,1,2-Trichloroethane	ND		ug/l	1.5	--
Tetrachloroethene	ND		ug/l	1.0	--
1,2-Dichloroethane	ND		ug/l	1.5	--
1,1,1-Trichloroethane	ND		ug/l	2.0	--
Benzene	ND		ug/l	1.0	--
Toluene	ND		ug/l	1.0	--
Ethylbenzene	ND		ug/l	1.0	--
Vinyl chloride	ND		ug/l	1.0	--
1,1-Dichloroethene	ND		ug/l	1.0	--
cis-1,2-Dichloroethene	ND		ug/l	1.0	--
Trichloroethene	ND		ug/l	1.0	--
1,2-Dichlorobenzene	ND		ug/l	5.0	--
1,3-Dichlorobenzene	ND		ug/l	5.0	--
1,4-Dichlorobenzene	ND		ug/l	5.0	--
p/m-Xylene	ND		ug/l	2.0	--
o-xylene	ND		ug/l	1.0	--
Xylenes, Total	ND		ug/l	1.0	--
Acetone	ND		ug/l	10	--
Methyl tert butyl ether	ND		ug/l	10	--
Tert-Butyl Alcohol	ND		ug/l	100	--
Tertiary-Amyl Methyl Ether	ND		ug/l	20	--

Project Name: 13 CORWIN STREET
Project Number: 18.0174933.02
Lab Number: L2170386
Report Date: 01/07/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 128,624.1
Analytical Date: 12/23/21 05:37
Analyst: NLK

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01 Batch: WG1587446-4					

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Pentafluorobenzene	97		60-140
Fluorobenzene	94		60-140
4-Bromofluorobenzene	110		60-140

Project Name: 13 CORWIN STREET
Project Number: 18.0174933.02
Lab Number: L2170386
Report Date: 01/07/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 128,624.1-SIM
Analytical Date: 12/23/21 05:37
Analyst: NLK

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS-SIM - Westborough Lab for sample(s): 01 Batch: WG1587457-4					
1,4-Dioxane	ND		ug/l	5.0	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Fluorobenzene	99		60-140
4-Bromofluorobenzene	103		60-140

Project Name: 13 CORWIN STREET
Project Number: 18.0174933.02
Lab Number: L2170386
Report Date: 01/07/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 14,504.1
Analytical Date: 12/30/21 10:48
Analyst: AMM

Extraction Method: EPA 504.1
Extraction Date: 12/30/21 09:51

Parameter	Result	Qualifier	Units	RL	MDL	
Microextractables by GC - Westborough Lab for sample(s): 01 Batch: WG1588896-1						
1,2-Dibromoethane	ND		ug/l	0.010	--	B

Lab Control Sample Analysis

Batch Quality Control

Project Name: 13 CORWIN STREET

Project Number: 18.0174933.02

Lab Number: L2170386

Report Date: 01/07/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01 Batch: WG1587446-3								
Methylene chloride	100		-		60-140	-		28
1,1-Dichloroethane	100		-		50-150	-		49
Carbon tetrachloride	80		-		70-130	-		41
1,1,2-Trichloroethane	110		-		70-130	-		45
Tetrachloroethene	105		-		70-130	-		39
1,2-Dichloroethane	105		-		70-130	-		49
1,1,1-Trichloroethane	100		-		70-130	-		36
Benzene	105		-		65-135	-		61
Toluene	110		-		70-130	-		41
Ethylbenzene	135		-		60-140	-		63
Vinyl chloride	95		-		5-195	-		66
1,1-Dichloroethene	105		-		50-150	-		32
cis-1,2-Dichloroethene	100		-		60-140	-		30
Trichloroethene	100		-		65-135	-		48
1,2-Dichlorobenzene	**140**	Q	-		65-135	-		57
1,3-Dichlorobenzene	130		-		70-130	-		43
1,4-Dichlorobenzene	135		-		65-135	-		57
p/m-Xylene	125		-		60-140	-		30
o-xylene	110		-		60-140	-		30
Acetone	90		-		40-160	-		30
Methyl tert butyl ether	90		-		60-140	-		30
Tert-Butyl Alcohol	96		-		60-140	-		30
Tertiary-Amyl Methyl Ether	95		-		60-140	-		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: 13 CORWIN STREET

Project Number: 18.0174933.02

Lab Number: L2170386

Report Date: 01/07/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01 Batch: WG1587446-3								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Pentafluorobenzene	102				60-140
Fluorobenzene	98				60-140
4-Bromofluorobenzene	110				60-140

Lab Control Sample Analysis

Batch Quality Control

Project Name: 13 CORWIN STREET

Project Number: 18.0174933.02

Lab Number: L2170386

Report Date: 01/07/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS-SIM - Westborough Lab Associated sample(s): 01 Batch: WG1587457-3								
1,4-Dioxane	128		-		60-140	-		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Fluorobenzene	104				60-140
4-Bromofluorobenzene	86				60-140

Lab Control Sample Analysis

Batch Quality Control

Project Name: 13 CORWIN STREET

Project Number: 18.0174933.02

Lab Number: L2170386

Report Date: 01/07/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
Microextractables by GC - Westborough Lab	Associated sample(s): 01		Batch: WG1588896-2						
1,2-Dibromoethane	80		-		80-120	-			B

Matrix Spike Analysis

Batch Quality Control

Project Name: 13 CORWIN STREET

Project Number: 18.0174933.02

Lab Number: L2170386

Report Date: 01/07/22

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits	Column
Microextractables by GC - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1588896-3 QC Sample: L2170118-01 Client ID: MS Sample													
1,2-Dibromoethane	ND	0.25	0.206	83		-	-		80-120	-		20	B
1,2-Dibromo-3-chloropropane	ND	0.25	0.270	108		-	-		80-120	-		20	B
1,2,3-Trichloropropane	ND	0.25	0.202	81		-	-		80-120	-		20	B

SEMIVOLATILES

Project Name: 13 CORWIN STREET
Project Number: 18.0174933.02

Lab Number: L2170386
Report Date: 01/07/22

SAMPLE RESULTS

Lab ID: L2170386-01
Client ID: GZ-104
Sample Location: PEABODY, MA

Date Collected: 12/21/21 10:00
Date Received: 12/21/21
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 129,625.1
Analytical Date: 12/28/21 17:20
Analyst: SZ

Extraction Method: EPA 625.1
Extraction Date: 12/26/21 12:06

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Bis(2-ethylhexyl)phthalate	ND		ug/l	2.20	--	1
Butyl benzyl phthalate	ND		ug/l	5.00	--	1
Di-n-butylphthalate	ND		ug/l	5.00	--	1
Di-n-octylphthalate	ND		ug/l	5.00	--	1
Diethyl phthalate	ND		ug/l	5.00	--	1
Dimethyl phthalate	ND		ug/l	5.00	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	69		42-122
2-Fluorobiphenyl	57		46-121
4-Terphenyl-d14	69		47-138

Project Name: 13 CORWIN STREET
Project Number: 18.0174933.02
Lab Number: L2170386
Report Date: 01/07/22

SAMPLE RESULTS

Lab ID: L2170386-01
Client ID: GZ-104
Sample Location: PEABODY, MA

Date Collected: 12/21/21 10:00
Date Received: 12/21/21
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 129,625.1-SIM
Analytical Date: 12/27/21 16:07
Analyst: RP

Extraction Method: EPA 625.1
Extraction Date: 12/26/21 12:05

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Acenaphthene	ND		ug/l	0.100	--	1
Fluoranthene	ND		ug/l	0.100	--	1
Naphthalene	ND		ug/l	0.100	--	1
Benzo(a)anthracene	ND		ug/l	0.100	--	1
Benzo(a)pyrene	ND		ug/l	0.100	--	1
Benzo(b)fluoranthene	ND		ug/l	0.100	--	1
Benzo(k)fluoranthene	ND		ug/l	0.100	--	1
Chrysene	ND		ug/l	0.100	--	1
Acenaphthylene	ND		ug/l	0.100	--	1
Anthracene	ND		ug/l	0.100	--	1
Benzo(ghi)perylene	ND		ug/l	0.100	--	1
Fluorene	ND		ug/l	0.100	--	1
Phenanthrene	ND		ug/l	0.100	--	1
Dibenzo(a,h)anthracene	ND		ug/l	0.100	--	1
Indeno(1,2,3-cd)pyrene	ND		ug/l	0.100	--	1
Pyrene	ND		ug/l	0.100	--	1
Pentachlorophenol	ND		ug/l	1.00	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	53		25-87
Phenol-d6	33		16-65
Nitrobenzene-d5	74		42-122
2-Fluorobiphenyl	71		46-121
2,4,6-Tribromophenol	99		45-128
4-Terphenyl-d14	81		47-138

Project Name: 13 CORWIN STREET
Project Number: 18.0174933.02
Lab Number: L2170386
Report Date: 01/07/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 129,625.1
Analytical Date: 12/28/21 13:27
Analyst: SZ

Extraction Method: EPA 625.1
Extraction Date: 12/26/21 12:06

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 01 Batch: WG1587608-1					
Bis(2-ethylhexyl)phthalate	ND		ug/l	2.20	--
Butyl benzyl phthalate	ND		ug/l	5.00	--
Di-n-butylphthalate	ND		ug/l	5.00	--
Di-n-octylphthalate	ND		ug/l	5.00	--
Diethyl phthalate	ND		ug/l	5.00	--
Dimethyl phthalate	ND		ug/l	5.00	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	62		42-122
2-Fluorobiphenyl	54		46-121
4-Terphenyl-d14	65		47-138

Project Name: 13 CORWIN STREET
Project Number: 18.0174933.02
Lab Number: L2170386
Report Date: 01/07/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 129,625.1-SIM
Analytical Date: 12/27/21 15:50
Analyst: RP

Extraction Method: EPA 625.1
Extraction Date: 12/26/21 12:05

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS-SIM - Westborough Lab for sample(s): 01 Batch: WG1587609-1					
Acenaphthene	ND		ug/l	0.100	--
Fluoranthene	ND		ug/l	0.100	--
Naphthalene	ND		ug/l	0.100	--
Benzo(a)anthracene	ND		ug/l	0.100	--
Benzo(a)pyrene	ND		ug/l	0.100	--
Benzo(b)fluoranthene	ND		ug/l	0.100	--
Benzo(k)fluoranthene	ND		ug/l	0.100	--
Chrysene	ND		ug/l	0.100	--
Acenaphthylene	ND		ug/l	0.100	--
Anthracene	ND		ug/l	0.100	--
Benzo(ghi)perylene	ND		ug/l	0.100	--
Fluorene	ND		ug/l	0.100	--
Phenanthrene	ND		ug/l	0.100	--
Dibenzo(a,h)anthracene	ND		ug/l	0.100	--
Indeno(1,2,3-cd)pyrene	ND		ug/l	0.100	--
Pyrene	ND		ug/l	0.100	--
Pentachlorophenol	ND		ug/l	1.00	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	47		25-87
Phenol-d6	30		16-65
Nitrobenzene-d5	68		42-122
2-Fluorobiphenyl	65		46-121
2,4,6-Tribromophenol	90		45-128
4-Terphenyl-d14	76		47-138

Lab Control Sample Analysis

Batch Quality Control

Project Name: 13 CORWIN STREET

Project Number: 18.0174933.02

Lab Number: L2170386

Report Date: 01/07/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01 Batch: WG1587608-3								
Bis(2-ethylhexyl)phthalate	72		-		29-137	-		82
Butyl benzyl phthalate	76		-		1-140	-		60
Di-n-butylphthalate	74		-		8-120	-		47
Di-n-octylphthalate	71		-		19-132	-		69
Diethyl phthalate	72		-		1-120	-		100
Dimethyl phthalate	71		-		1-120	-		183

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Nitrobenzene-d5	84				42-122
2-Fluorobiphenyl	69				46-121
4-Terphenyl-d14	77				47-138

Lab Control Sample Analysis
Batch Quality Control

Project Name: 13 CORWIN STREET
Project Number: 18.0174933.02

Lab Number: L2170386
Report Date: 01/07/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS-SIM - Westborough Lab Associated sample(s): 01 Batch: WG1587609-2								
Acenaphthene	74		-		60-132	-		30
Fluoranthene	81		-		43-121	-		30
Naphthalene	72		-		36-120	-		30
Benzo(a)anthracene	88		-		42-133	-		30
Benzo(a)pyrene	86		-		32-148	-		30
Benzo(b)fluoranthene	84		-		42-140	-		30
Benzo(k)fluoranthene	87		-		25-146	-		30
Chrysene	72		-		44-140	-		30
Acenaphthylene	79		-		54-126	-		30
Anthracene	76		-		43-120	-		30
Benzo(ghi)perylene	84		-		1-195	-		30
Fluorene	78		-		70-120	-		30
Phenanthrene	72		-		65-120	-		30
Dibenzo(a,h)anthracene	94		-		1-200	-		30
Indeno(1,2,3-cd)pyrene	89		-		1-151	-		30
Pyrene	81		-		70-120	-		30
Pentachlorophenol	67		-		38-152	-		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: 13 CORWIN STREET

Project Number: 18.0174933.02

Lab Number: L2170386

Report Date: 01/07/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS-SIM - Westborough Lab Associated sample(s): 01 Batch: WG1587609-2								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2-Fluorophenol	54				25-87
Phenol-d6	35				16-65
Nitrobenzene-d5	75				42-122
2-Fluorobiphenyl	72				46-121
2,4,6-Tribromophenol	99				45-128
4-Terphenyl-d14	78				47-138

PCBS

Project Name: 13 CORWIN STREET
Project Number: 18.0174933.02
Lab Number: L2170386
Report Date: 01/07/22

SAMPLE RESULTS

Lab ID: L2170386-01
Client ID: GZ-104
Sample Location: PEABODY, MA

Date Collected: 12/21/21 10:00
Date Received: 12/21/21
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 127,608.3
Analytical Date: 01/02/22 14:56
Analyst: CW

Extraction Method: EPA 608.3
Extraction Date: 12/31/21 01:04
Cleanup Method: EPA 3665A
Cleanup Date: 12/31/21
Cleanup Method: EPA 3660B
Cleanup Date: 12/31/21

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Polychlorinated Biphenyls by GC - Westborough Lab							
Aroclor 1016	ND		ug/l	0.250	--	1	A
Aroclor 1221	ND		ug/l	0.250	--	1	A
Aroclor 1232	ND		ug/l	0.250	--	1	A
Aroclor 1242	ND		ug/l	0.250	--	1	A
Aroclor 1248	ND		ug/l	0.250	--	1	A
Aroclor 1254	ND		ug/l	0.250	--	1	A
Aroclor 1260	ND		ug/l	0.200	--	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	70		37-123	B
Decachlorobiphenyl	76		38-114	B
2,4,5,6-Tetrachloro-m-xylene	69		37-123	A
Decachlorobiphenyl	78		38-114	A

Project Name: 13 CORWIN STREET
Project Number: 18.0174933.02
Lab Number: L2170386
Report Date: 01/07/22

Method Blank Analysis
Batch Quality Control

Analytical Method: 127,608.3
Analytical Date: 01/02/22 13:42
Analyst: CW

Extraction Method: EPA 608.3
Extraction Date: 12/30/21 10:02
Cleanup Method: EPA 3665A
Cleanup Date: 12/30/21
Cleanup Method: EPA 3660B
Cleanup Date: 12/30/21

Parameter	Result	Qualifier	Units	RL	MDL	Column
Polychlorinated Biphenyls by GC - Westborough Lab for sample(s): 01 Batch: WG1589140-1						
Aroclor 1016	ND		ug/l	0.250	--	A
Aroclor 1221	ND		ug/l	0.250	--	A
Aroclor 1232	ND		ug/l	0.250	--	A
Aroclor 1242	ND		ug/l	0.250	--	A
Aroclor 1248	ND		ug/l	0.250	--	A
Aroclor 1254	ND		ug/l	0.250	--	A
Aroclor 1260	ND		ug/l	0.200	--	A

Surrogate	%Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	61		37-123	B
Decachlorobiphenyl	68		38-114	B
2,4,5,6-Tetrachloro-m-xylene	59		37-123	A
Decachlorobiphenyl	67		38-114	A

Lab Control Sample Analysis

Batch Quality Control

Project Name: 13 CORWIN STREET

Project Number: 18.0174933.02

Lab Number: L2170386

Report Date: 01/07/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
Polychlorinated Biphenyls by GC - Westborough Lab Associated sample(s): 01 Batch: WG1589140-2									
Aroclor 1016	66		-		50-140	-		36	A
Aroclor 1260	61		-		8-140	-		38	A

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	61				37-123	B
Decachlorobiphenyl	58				38-114	B
2,4,5,6-Tetrachloro-m-xylene	60				37-123	A
Decachlorobiphenyl	57				38-114	A

METALS

Project Name: 13 CORWIN STREET
Project Number: 18.0174933.02
Lab Number: L2170386
Report Date: 01/07/22

SAMPLE RESULTS

Lab ID: L2170386-01
Client ID: GZ-104
Sample Location: PEABODY, MA
Sample Depth:
Matrix: Water

Date Collected: 12/21/21 10:00
Date Received: 12/21/21
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Antimony, Total	ND		mg/l	0.00400	--	1	01/04/22 15:15	01/06/22 13:03	EPA 3005A	3,200.8	CD
Arsenic, Total	ND		mg/l	0.00100	--	1	01/04/22 15:15	01/06/22 13:03	EPA 3005A	3,200.8	CD
Cadmium, Total	ND		mg/l	0.00020	--	1	01/04/22 15:15	01/06/22 13:03	EPA 3005A	3,200.8	CD
Chromium, Total	ND		mg/l	0.00100	--	1	01/04/22 15:15	01/06/22 13:03	EPA 3005A	3,200.8	CD
Copper, Total	ND		mg/l	0.00100	--	1	01/04/22 15:15	01/06/22 13:03	EPA 3005A	3,200.8	CD
Iron, Total	0.057		mg/l	0.050	--	1	01/04/22 15:15	01/06/22 12:43	EPA 3005A	19,200.7	GD
Lead, Total	ND		mg/l	0.00100	--	1	01/04/22 15:15	01/06/22 13:03	EPA 3005A	3,200.8	CD
Mercury, Total	ND		mg/l	0.00020	--	1	01/04/22 16:15	01/05/22 13:45	EPA 245.1	3,245.1	AC
Nickel, Total	ND		mg/l	0.00200	--	1	01/04/22 15:15	01/06/22 13:03	EPA 3005A	3,200.8	CD
Selenium, Total	ND		mg/l	0.00500	--	1	01/04/22 15:15	01/06/22 13:03	EPA 3005A	3,200.8	CD
Silver, Total	ND		mg/l	0.00040	--	1	01/04/22 15:15	01/06/22 13:03	EPA 3005A	3,200.8	CD
Zinc, Total	ND		mg/l	0.01000	--	1	01/04/22 15:15	01/06/22 13:03	EPA 3005A	3,200.8	CD
Total Hardness by SM 2340B - Mansfield Lab											
Hardness	69.8		mg/l	0.660	NA	1	01/04/22 15:15	01/06/22 12:43	EPA 3005A	19,200.7	GD
General Chemistry - Mansfield Lab											
Chromium, Trivalent	ND		mg/l	0.010	--	1		01/06/22 13:03	NA	107,-	

Project Name: 13 CORWIN STREET
Project Number: 18.0174933.02
Lab Number: L2170386
Report Date: 01/07/22

SAMPLE RESULTS

Lab ID: L2170386-02
Client ID: SW-1
Sample Location: PEABODY, MA
Sample Depth:
Matrix: Water

Date Collected: 12/21/21 11:15
Date Received: 12/21/21
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Antimony, Total	ND		mg/l	0.00400	--	1	01/04/22 15:15	01/06/22 13:07	EPA 3005A	3,200.8	CD
Arsenic, Total	ND		mg/l	0.00100	--	1	01/04/22 15:15	01/06/22 13:07	EPA 3005A	3,200.8	CD
Cadmium, Total	ND		mg/l	0.00020	--	1	01/04/22 15:15	01/06/22 13:07	EPA 3005A	3,200.8	CD
Chromium, Total	ND		mg/l	0.00100	--	1	01/04/22 15:15	01/06/22 13:07	EPA 3005A	3,200.8	CD
Copper, Total	0.00115		mg/l	0.00100	--	1	01/04/22 15:15	01/06/22 13:07	EPA 3005A	3,200.8	CD
Iron, Total	0.502		mg/l	0.050	--	1	01/04/22 15:15	01/06/22 12:48	EPA 3005A	19,200.7	GD
Lead, Total	ND		mg/l	0.00100	--	1	01/04/22 15:15	01/06/22 13:07	EPA 3005A	3,200.8	CD
Mercury, Total	ND		mg/l	0.00020	--	1	01/04/22 16:15	01/05/22 13:48	EPA 245.1	3,245.1	AC
Nickel, Total	0.00552		mg/l	0.00200	--	1	01/04/22 15:15	01/06/22 13:07	EPA 3005A	3,200.8	CD
Selenium, Total	ND		mg/l	0.00500	--	1	01/04/22 15:15	01/06/22 13:07	EPA 3005A	3,200.8	CD
Silver, Total	ND		mg/l	0.00040	--	1	01/04/22 15:15	01/06/22 13:07	EPA 3005A	3,200.8	CD
Zinc, Total	0.01576		mg/l	0.01000	--	1	01/04/22 15:15	01/06/22 13:07	EPA 3005A	3,200.8	CD
Total Hardness by SM 2340B - Mansfield Lab											
Hardness	84.4		mg/l	0.660	NA	1	01/04/22 15:15	01/06/22 12:48	EPA 3005A	19,200.7	GD

Project Name: 13 CORWIN STREET
Project Number: 18.0174933.02
Lab Number: L2170386
Report Date: 01/07/22

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01-02 Batch: WG1590021-1										
Iron, Total	ND		mg/l	0.050	--	1	01/04/22 15:15	01/06/22 09:25	19,200.7	GD

Prep Information

Digestion Method: EPA 3005A

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Hardness by SM 2340B - Mansfield Lab for sample(s): 01-02 Batch: WG1590021-1										
Hardness	ND		mg/l	0.660	NA	1	01/04/22 15:15	01/06/22 09:25	19,200.7	GD

Prep Information

Digestion Method: EPA 3005A

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01-02 Batch: WG1590023-1										
Antimony, Total	ND		mg/l	0.00400	--	1	01/04/22 15:15	01/06/22 12:37	3,200.8	CD
Arsenic, Total	ND		mg/l	0.00100	--	1	01/04/22 15:15	01/06/22 12:37	3,200.8	CD
Cadmium, Total	ND		mg/l	0.00020	--	1	01/04/22 15:15	01/06/22 12:37	3,200.8	CD
Chromium, Total	ND		mg/l	0.00100	--	1	01/04/22 15:15	01/06/22 12:37	3,200.8	CD
Copper, Total	ND		mg/l	0.00100	--	1	01/04/22 15:15	01/06/22 12:37	3,200.8	CD
Lead, Total	ND		mg/l	0.00100	--	1	01/04/22 15:15	01/06/22 12:37	3,200.8	CD
Nickel, Total	ND		mg/l	0.00200	--	1	01/04/22 15:15	01/06/22 12:37	3,200.8	CD
Selenium, Total	ND		mg/l	0.00500	--	1	01/04/22 15:15	01/06/22 12:37	3,200.8	CD
Silver, Total	ND		mg/l	0.00040	--	1	01/04/22 15:15	01/06/22 12:37	3,200.8	CD
Zinc, Total	ND		mg/l	0.01000	--	1	01/04/22 15:15	01/06/22 12:37	3,200.8	CD

Prep Information

Digestion Method: EPA 3005A

Project Name: 13 CORWIN STREET
Project Number: 18.0174933.02
Lab Number: L2170386
Report Date: 01/07/22

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01-02 Batch: WG1590026-1										
Mercury, Total	ND		mg/l	0.00020	--	1	01/04/22 16:15	01/05/22 12:25	3,245.1	AC

Prep Information

Digestion Method: EPA 245.1

Lab Control Sample Analysis

Batch Quality Control

Project Name: 13 CORWIN STREET

Project Number: 18.0174933.02

Lab Number: L2170386

Report Date: 01/07/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-02 Batch: WG1590021-2								
Iron, Total	99		-		85-115	-		
Total Hardness by SM 2340B - Mansfield Lab Associated sample(s): 01-02 Batch: WG1590021-2								
Hardness	105		-		85-115	-		
Total Metals - Mansfield Lab Associated sample(s): 01-02 Batch: WG1590023-2								
Antimony, Total	96		-		85-115	-		
Arsenic, Total	103		-		85-115	-		
Cadmium, Total	104		-		85-115	-		
Chromium, Total	104		-		85-115	-		
Copper, Total	102		-		85-115	-		
Lead, Total	99		-		85-115	-		
Nickel, Total	100		-		85-115	-		
Selenium, Total	111		-		85-115	-		
Silver, Total	105		-		85-115	-		
Zinc, Total	100		-		85-115	-		
Total Metals - Mansfield Lab Associated sample(s): 01-02 Batch: WG1590026-2								
Mercury, Total	103		-		85-115	-		

Matrix Spike Analysis
Batch Quality Control

Project Name: 13 CORWIN STREET
Project Number: 18.0174933.02

Lab Number: L2170386
Report Date: 01/07/22

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-02 QC Batch ID: WG1590021-3 QC Sample: L2170222-01 Client ID: MS Sample												
Iron, Total	5.46	1	7.28	**182**	Q	-	-		75-125	-		20
Total Hardness by SM 2340B - Mansfield Lab Associated sample(s): 01-02 QC Batch ID: WG1590021-3 QC Sample: L2170222-01 Client ID: MS Sample												
Hardness	211	66.2	273	94		-	-		75-125	-		20
Total Metals - Mansfield Lab Associated sample(s): 01-02 QC Batch ID: WG1590021-7 QC Sample: L2170222-02 Client ID: MS Sample												
Iron, Total	2.27	1	3.22	95		-	-		75-125	-		20
Total Hardness by SM 2340B - Mansfield Lab Associated sample(s): 01-02 QC Batch ID: WG1590021-7 QC Sample: L2170222-02 Client ID: MS Sample												
Hardness	260	66.2	324	97		-	-		75-125	-		20
Total Metals - Mansfield Lab Associated sample(s): 01-02 QC Batch ID: WG1590023-3 QC Sample: L2170222-01 Client ID: MS Sample												
Antimony, Total	ND	0.5	0.4948	99		-	-		70-130	-		20
Arsenic, Total	0.0057	0.12	0.1224	97		-	-		70-130	-		20
Cadmium, Total	0.0011	0.053	0.05453	101		-	-		70-130	-		20
Chromium, Total	0.0121	0.2	0.2054	97		-	-		70-130	-		20
Copper, Total	0.09653	0.25	0.3468	100		-	-		70-130	-		20
Lead, Total	0.1296	0.53	0.6281	94		-	-		70-130	-		20
Nickel, Total	0.0138	0.5	0.4751	92		-	-		70-130	-		20
Selenium, Total	ND	0.12	0.1077	90		-	-		70-130	-		20
Silver, Total	ND	0.05	0.05080	102		-	-		70-130	-		20
Zinc, Total	0.5246	0.5	1.047	104		-	-		70-130	-		20
Total Metals - Mansfield Lab Associated sample(s): 01-02 QC Batch ID: WG1590026-3 QC Sample: L2171451-01 Client ID: MS Sample												
Mercury, Total	ND	0.005	0.00476	95		-	-		70-130	-		20

Matrix Spike Analysis
Batch Quality Control

Project Name: 13 CORWIN STREET
Project Number: 18.0174933.02

Lab Number: L2170386
Report Date: 01/07/22

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	MSD Found	MSD %Recovery	Recovery Limits	RPD	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-02 QC Batch ID: WG1590026-5 QC Sample: L2171453-01 Client ID: MS Sample									
Mercury, Total	ND	0.005	0.00475	95	-	-	70-130	-	20

Lab Duplicate Analysis

Batch Quality Control

Project Name: 13 CORWIN STREET

Project Number: 18.0174933.02

Lab Number: L2170386

Report Date: 01/07/22

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-02 QC Batch ID: WG1590023-4 QC Sample: L2170222-01 Client ID: DUP Sample						
Copper, Total	0.09653	0.09250	mg/l	4		20
Lead, Total	0.1296	0.1175	mg/l	10		20
Zinc, Total	0.5246	0.5124	mg/l	2		20
Total Metals - Mansfield Lab Associated sample(s): 01-02 QC Batch ID: WG1590026-4 QC Sample: L2171451-01 Client ID: DUP Sample						
Mercury, Total	ND	ND	mg/l	NC		20
Total Metals - Mansfield Lab Associated sample(s): 01-02 QC Batch ID: WG1590026-6 QC Sample: L2171453-01 Client ID: DUP Sample						
Mercury, Total	ND	ND	mg/l	NC		20

INORGANICS
&
MISCELLANEOUS

Project Name: 13 CORWIN STREET
Project Number: 18.0174933.02

Lab Number: L2170386
Report Date: 01/07/22

SAMPLE RESULTS

Lab ID: L2170386-01
Client ID: GZ-104
Sample Location: PEABODY, MA

Date Collected: 12/21/21 10:00
Date Received: 12/21/21
Field Prep: Not Specified

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total Suspended	ND		mg/l	5.0	NA	1	-	12/27/21 15:30	121,2540D	MD
Cyanide, Total	ND		mg/l	0.005	--	1	01/03/22 09:45	01/03/22 13:03	121,4500CN-CE	CS
Chlorine, Total Residual	ND		mg/l	0.02	--	1	-	12/22/21 00:42	121,4500CL-D	AS
Nitrogen, Ammonia	0.307		mg/l	0.075	--	1	01/05/22 10:30	01/05/22 19:16	121,4500NH3-BH	AT
Nitrogen, Nitrate/Nitrite	0.14		mg/l	0.10	--	1	-	01/06/22 09:51	121,4500NO3-F	MR
Total Nitrogen	ND		mg/l	0.30	--	1	-	01/07/22 09:50	107,-	JO
Nitrogen, Total Kjeldahl	ND		mg/l	0.300	--	1	01/06/22 12:30	01/06/22 18:10	121,4500NH3-H	AT
TPH, SGT-HEM	ND		mg/l	4.00	--	1	01/04/22 10:30	01/04/22 12:15	140,1664B	NP
Phenolics, Total	ND		mg/l	0.030	--	1	01/03/22 07:01	01/04/22 09:16	4,420.1	KP
Chromium, Hexavalent	ND		mg/l	0.010	--	1	12/22/21 08:47	12/22/21 09:03	1,7196A	CL
Anions by Ion Chromatography - Westborough Lab										
Chloride	199.		mg/l	12.5	--	25	-	01/03/22 16:38	44,300.0	SH

Project Name: 13 CORWIN STREET
Project Number: 18.0174933.02

Lab Number: L2170386
Report Date: 01/07/22

SAMPLE RESULTS

Lab ID: L2170386-02
Client ID: SW-1
Sample Location: PEABODY, MA

Date Collected: 12/21/21 11:15
Date Received: 12/21/21
Field Prep: Not Specified

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Nitrogen, Ammonia	0.207		mg/l	0.075	--	1	01/05/22 10:30	01/05/22 19:17	121,4500NH3-BH	AT
Nitrogen, Nitrate/Nitrite	1.1		mg/l	0.10	--	1	-	01/06/22 09:52	121,4500NO3-F	MR
Total Nitrogen	1.6		mg/l	0.30	--	1	-	01/07/22 09:50	107,-	JO
Nitrogen, Total Kjeldahl	0.519		mg/l	0.300	--	1	01/06/22 12:30	01/06/22 18:13	121,4500NH3-H	AT

Project Name: 13 CORWIN STREET
Project Number: 18.0174933.02
Lab Number: L2170386
Report Date: 01/07/22

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG1586354-1										
Chlorine, Total Residual	ND		mg/l	0.02	--	1	-	12/22/21 00:42	121,4500CL-D	AS
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG1586529-1										
Chromium, Hexavalent	ND		mg/l	0.010	--	1	12/22/21 08:47	12/22/21 09:02	1,7196A	CL
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG1587945-1										
Solids, Total Suspended	ND		mg/l	5.0	NA	1	-	12/27/21 15:30	121,2540D	MD
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG1589760-1										
Cyanide, Total	ND		mg/l	0.005	--	1	01/03/22 09:45	01/03/22 12:59	121,4500CN-CE	CS
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG1589767-1										
Phenolics, Total	ND		mg/l	0.030	--	1	01/03/22 07:01	01/04/22 09:14	4,420.1	KP
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG1590054-1										
TPH, SGT-HEM	ND		mg/l	4.00	--	1	01/04/22 10:30	01/04/22 12:15	140,1664B	NP
Anions by Ion Chromatography - Westborough Lab for sample(s): 01 Batch: WG1590105-1										
Chloride	ND		mg/l	0.500	--	1	-	01/03/22 16:06	44,300.0	SH
General Chemistry - Westborough Lab for sample(s): 01-02 Batch: WG1590765-1										
Nitrogen, Ammonia	ND		mg/l	0.075	--	1	01/05/22 10:30	01/05/22 19:10	121,4500NH3-BH	AT
General Chemistry - Westborough Lab for sample(s): 01-02 Batch: WG1591133-1										
Nitrogen, Nitrate/Nitrite	ND		mg/l	0.10	--	1	-	01/06/22 09:18	121,4500NO3-F	MR
General Chemistry - Westborough Lab for sample(s): 01-02 Batch: WG1591297-1										
Nitrogen, Total Kjeldahl	ND		mg/l	0.300	--	1	01/06/22 12:30	01/06/22 17:45	121,4500NH3-H	AT

Lab Control Sample Analysis

Batch Quality Control

Project Name: 13 CORWIN STREET

Project Number: 18.0174933.02

Lab Number: L2170386

Report Date: 01/07/22

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1586354-2								
Chlorine, Total Residual	96		-		90-110	-		
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1586529-2								
Chromium, Hexavalent	104		-		85-115	-		20
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1587945-2								
Solids, Total Suspended	92		-		80-120	-		
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1589760-2								
Cyanide, Total	96		-		90-110	-		
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1589767-2								
Phenolics, Total	114		-		70-130	-		
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1590054-2								
TPH	117		-		64-132	-		34
Anions by Ion Chromatography - Westborough Lab Associated sample(s): 01 Batch: WG1590105-2								
Chloride	101		-		90-110	-		

Lab Control Sample Analysis

Batch Quality Control

Project Name: 13 CORWIN STREET

Project Number: 18.0174933.02

Lab Number: L2170386

Report Date: 01/07/22

Parameter	LCS %Recovery	LCSD %Recovery	%Recovery Limits	RPD	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01-02 Batch: WG1590765-2					
Nitrogen, Ammonia	101	-	80-120	-	20
General Chemistry - Westborough Lab Associated sample(s): 01-02 Batch: WG1591133-2					
Nitrogen, Nitrate/Nitrite	98	-	90-110	-	20
General Chemistry - Westborough Lab Associated sample(s): 01-02 Batch: WG1591297-2					
Nitrogen, Total Kjeldahl	103	-	78-122	-	

Matrix Spike Analysis
Batch Quality Control

Project Name: 13 CORWIN STREET
Project Number: 18.0174933.02

Lab Number: L2170386
Report Date: 01/07/22

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1586354-4 QC Sample: L2170309-01 Client ID: MS Sample												
Chlorine, Total Residual	ND	0.25	0.27	108		-	-		80-120	-		20
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1586529-4 QC Sample: L2170386-01 Client ID: GZ-104												
Chromium, Hexavalent	ND	0.1	0.109	109		-	-		85-115	-		20
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1589760-3 QC Sample: L2170553-04 Client ID: MS Sample												
Cyanide, Total	ND	0.2	0.030	**15**	Q	-	-		90-110	-		30
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1589767-4 QC Sample: L2170386-01 Client ID: GZ-104												
Phenolics, Total	ND	0.4	0.40	100		-	-		70-130	-		20
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1590054-4 QC Sample: L2171503-12 Client ID: MS Sample												
TPH	7.19	20.2	16.0	**43**	Q	-	-		64-132	-		34
Anions by Ion Chromatography - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1590105-3 QC Sample: L2170405-02 Client ID: MS Sample												
Chloride	8.44	4	12.3	96		-	-		90-110	-		18
General Chemistry - Westborough Lab Associated sample(s): 01-02 QC Batch ID: WG1590765-4 QC Sample: L2200023-06 Client ID: MS Sample												
Nitrogen, Ammonia	ND	4	ND	**0**	Q	-	-		80-120	-		20
General Chemistry - Westborough Lab Associated sample(s): 01-02 QC Batch ID: WG1591133-4 QC Sample: L2200383-01 Client ID: MS Sample												
Nitrogen, Nitrate/Nitrite	1.5	4	5.2	92		-	-		80-120	-		20
General Chemistry - Westborough Lab Associated sample(s): 01-02 QC Batch ID: WG1591297-4 QC Sample: L2170386-01 Client ID: GZ-104												
Nitrogen, Total Kjeldahl	ND	8	7.64	96		-	-		77-111	-		24

Lab Duplicate Analysis
Batch Quality Control

Project Name: 13 CORWIN STREET
Project Number: 18.0174933.02

Lab Number: L2170386
Report Date: 01/07/22

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1586354-3 QC Sample: L2170309-02 Client ID: DUP Sample						
Chlorine, Total Residual	ND	ND	mg/l	NC		20
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1586529-3 QC Sample: L2170386-01 Client ID: GZ-104						
Chromium, Hexavalent	ND	ND	mg/l	NC		20
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1587945-3 QC Sample: L2170434-01 Client ID: DUP Sample						
Solids, Total Suspended	770	800	mg/l	4		29
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1589760-4 QC Sample: L2170553-03 Client ID: DUP Sample						
Cyanide, Total	ND	ND	mg/l	NC		30
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1589767-3 QC Sample: L2170386-01 Client ID: GZ-104						
Phenolics, Total	ND	ND	mg/l	NC		20
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1590054-3 QC Sample: L2171503-11 Client ID: DUP Sample						
TPH	ND	ND	mg/l	NC		34
Anions by Ion Chromatography - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1590105-4 QC Sample: L2170405-02 Client ID: DUP Sample						
Chloride	8.44	8.37	mg/l	1		18
General Chemistry - Westborough Lab Associated sample(s): 01-02 QC Batch ID: WG1590765-3 QC Sample: L2200023-06 Client ID: DUP Sample						
Nitrogen, Ammonia	ND	ND	mg/l	NC		20
General Chemistry - Westborough Lab Associated sample(s): 01-02 QC Batch ID: WG1591133-3 QC Sample: L2200383-01 Client ID: DUP Sample						
Nitrogen, Nitrate/Nitrite	1.5	1.5	mg/l	0		20

Lab Duplicate Analysis

Batch Quality Control

Project Name: 13 CORWIN STREET

Project Number: 18.0174933.02

Lab Number: L2170386

Report Date: 01/07/22

Parameter	Native Sample	Duplicate Sample	Units	RPD	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01-02 QC Batch ID: WG1591297-3 QC Sample: L2170386-01 Client ID: GZ-104					
Nitrogen, Total Kjeldahl	ND	0.356	mg/l	NC	24

Project Name: 13 CORWIN STREET
Project Number: 18.0174933.02

Lab Number: L2170386
Report Date: 01/07/22

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2170386-01A	Vial Na2S2O3 preserved	A	NA		3.4	Y	Absent		624.1-SIM-RGP(7),624.1-RGP(7)
L2170386-01B	Vial Na2S2O3 preserved	A	NA		3.4	Y	Absent		624.1-SIM-RGP(7),624.1-RGP(7)
L2170386-01C	Vial Na2S2O3 preserved	A	NA		3.4	Y	Absent		624.1-SIM-RGP(7),624.1-RGP(7)
L2170386-01D	Vial unpreserved	A	NA		3.4	Y	Absent		SUB-ETHANOL(14)
L2170386-01E	Vial unpreserved	A	NA		3.4	Y	Absent		SUB-ETHANOL(14)
L2170386-01F	Vial unpreserved	A	NA		3.4	Y	Absent		SUB-ETHANOL(14)
L2170386-01G	Vial Na2S2O3 preserved	A	NA		3.4	Y	Absent		504(14)
L2170386-01H	Vial Na2S2O3 preserved	A	NA		3.4	Y	Absent		504(14)
L2170386-01I	Plastic 250ml HNO3 preserved	A	<2	<2	3.4	Y	Absent		CD-2008T(180),NI-2008T(180),ZN-2008T(180),HARDU(180),CU-2008T(180),FE-UI(180),AS-2008T(180),HG-U(28),SE-2008T(180),AG-2008T(180),PB-2008T(180),SB-2008T(180),CR-2008T(180)
L2170386-01J	Plastic 250ml NaOH preserved	A	>12	>12	3.4	Y	Absent		TCN-4500(14)
L2170386-01K	Plastic 500ml H2SO4 preserved	A	<2	<2	3.4	Y	Absent		TKN-4500(28),NO3/NO2-4500(28),TNITROGEN(28),NH3-4500(28)
L2170386-01L	Plastic 950ml unpreserved	A	7	7	3.4	Y	Absent		CL-300(28),HEXCR-7196(1),TRC-4500(1)
L2170386-01M	Plastic 950ml unpreserved	A	7	7	3.4	Y	Absent		TSS-2540(7)
L2170386-01N	Amber 950ml H2SO4 preserved	A	<2	<2	3.4	Y	Absent		TPHENOL-420(28)
L2170386-01O	Amber 1000ml Na2S2O3	A	7	7	3.4	Y	Absent		625.1-RGP(7),625.1-SIM-RGP(7)
L2170386-01P	Amber 1000ml Na2S2O3	A	7	7	3.4	Y	Absent		625.1-RGP(7),625.1-SIM-RGP(7)
L2170386-01Q	Amber 1000ml Na2S2O3	A	7	7	3.4	Y	Absent		PCB-608.3(365)
L2170386-01R	Amber 1000ml Na2S2O3	A	7	7	3.4	Y	Absent		PCB-608.3(365)
L2170386-01S	Amber 1000ml HCl preserved	A	NA		3.4	Y	Absent		TPH-1664(28)
L2170386-01T	Amber 1000ml HCl preserved	A	NA		3.4	Y	Absent		TPH-1664(28)

*Values in parentheses indicate holding time in days

Project Name: 13 CORWIN STREET
Project Number: 18.0174933.02

Lab Number: L2170386
Report Date: 01/07/22

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2170386-02A	Plastic 250ml HNO3 preserved	A	<2	<2	3.4	Y	Absent		CD-2008T(180),NI-2008T(180),ZN-2008T(180),CU-2008T(180),FE-UI(180),HARDU(180),AS-2008T(180),AG-2008T(180),HG-U(28),SE-2008T(180),PB-2008T(180),SB-2008T(180),CR-2008T(180)
L2170386-02B	Plastic 250ml HNO3 preserved	A	<2	<2	3.4	Y	Absent		CD-2008T(180),NI-2008T(180),ZN-2008T(180),CU-2008T(180),FE-UI(180),HARDU(180),AS-2008T(180),AG-2008T(180),HG-U(28),SE-2008T(180),PB-2008T(180),SB-2008T(180),CR-2008T(180)
L2170386-02C	Plastic 500ml H2SO4 preserved	A	<2	<2	3.4	Y	Absent		NH3-4500(28)

*Values in parentheses indicate holding time in days

Project Name:	13 CORWIN STREET	**Lab Number:**	L2170386
Project Number:	18.0174933.02	**Report Date:**	01/07/22

GLOSSARY

Acronyms

DL - Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

EDL - Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).

EMPC - Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.

EPA - Environmental Protection Agency.

LCS - Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LCSD - Laboratory Control Sample Duplicate: Refer to LCS.

LFB - Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LOD - Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

LOQ - Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

MDL - Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

MS - Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.

MSD - Matrix Spike Sample Duplicate: Refer to MS.

NA - Not Applicable.

NC - Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.

NDPA/DPA - N-Nitrosodiphenylamine/Diphenylamine.

NI - Not Ignitable.

NP - Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.

NR - No Results: Term is utilized when 'No Target Compounds Requested' is reported for the analysis of Volatile or Semivolatile Organic TIC only requests.

RL - Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

RPD - Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.

SRM - Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.

STLP - Semi-dynamic Tank Leaching Procedure per EPA Method 1315.

TEF - Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.

TEQ - Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.

TIC - Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Report Format: Data Usability Report

Project Name:	13 CORWIN STREET	**Lab Number:**	L2170386
Project Number:	18.0174933.02	**Report Date:**	01/07/22

Footnotes

1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Difference: With respect to Total Oxidizable Precursor (TOP) Assay analysis, the difference is defined as the Post-Treatment value minus the Pre-Treatment value.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

PAH Total: With respect to Alkylated PAH analyses, the 'PAHs, Total' result is defined as the summation of results for all or a subset of the following compounds: Naphthalene, C1-C4 Naphthalenes, 2-Methylnaphthalene, 1-Methylnaphthalene, Biphenyl, Acenaphthylene, Acenaphthene, Fluorene, C1-C3 Fluorenes, Phenanthrene, C1-C4 Phenanthrenes/Anthracenes, Anthracene, Fluoranthene, Pyrene, C1-C4 Fluoranthenes/Pyrenes, Benz(a)anthracene, Chrysene, C1-C4 Chrysenes, Benzo(b)fluoranthene, Benzo(j)+(k)fluoranthene, Benzo(e)pyrene, Benzo(a)pyrene, Perylene, Indeno(1,2,3-cd)pyrene, Dibenz(ah)+(ac)anthracene, Benzo(g,h,i)perylene. If a 'Total' result is requested, the results of its individual components will also be reported.

PFAS Total: With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. In addition, the 'PFAS, Total (6)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA, PFDA and PFOS. For MassDEP DW compliance analysis only, the 'PFAS, Total (6)' result is defined as the summation of results at or above the RL. Note: If a 'Total' result is requested, the results of its individual components will also be reported.

The target compound Chlordane (CAS No. 57-74-9) is reported for GC ECD analyses. Per EPA,this compound "refers to a mixture of chlordane isomers, other chlorinated hydrocarbons and numerous other components." (Reference: USEPA Toxicological Review of Chlordane, In Support of Summary Information on the Integrated Risk Information System (IRIS), December 1997.)

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Data Qualifiers

A - Spectra identified as "Aldol Condensates" are byproducts of the extraction/concentration procedures when acetone is introduced in the process.

B - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

C - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

F - The ratio of quantifier ion response to qualifier ion response falls outside of the laboratory criteria. Results are considered to be an estimated maximum concentration.

G - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.

H - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

I - The lower value for the two columns has been reported due to obvious interference.

J - Estimated value. This represents an estimated concentration for Tentatively Identified Compounds (TICs).

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

ND - Not detected at the reporting limit (RL) for the sample.

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where

Report Format: Data Usability Report

Project Name:	13 CORWIN STREET	**Lab Number:**	L2170386
Project Number:	18.0174933.02	**Report Date:**	01/07/22

Data Qualifiers

the identification is based on a mass spectral library search.

P - The RPD between the results for the two columns exceeds the method-specified criteria.

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

V - The surrogate associated with this target analyte has a recovery outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Z - The batch matrix spike and/or duplicate associated with this target analyte has a recovery/RPD outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Report Format: Data Usability Report

Project Name:	13 CORWIN STREET	**Lab Number:**	L2170386
Project Number:	18.0174933.02	**Report Date:**	01/07/22

REFERENCES

1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - VI, 2018.

3 Methods for the Determination of Metals in Environmental Samples, Supplement I. EPA/600/R-94/111. May 1994.

4 Methods for Chemical Analysis of Water and Wastes. EPA 600/4-79-020. Revised March 1983.

14 Methods for the Determination of Organic Compounds in Finished Drinking Water and Raw Source Water. EPA/600/4-88/039, Revised July 1991.

19 Inductively Coupled Plasma Atomic Emission Spectrometric Method for Trace Element Analysis of Water and Wastes. Appendix C, Part 136, 40 CFR (Code of Federal Regulations). July 1, 1999 edition.

44 Methods for the Determination of Inorganic Substances in Environmental Samples, EPA/600/R-93/100, August 1993.

107 Alpha Analytical - In-house calculation method.

121 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. Standard Methods Online.

127 Method 608.3: Organochlorine Pesticides and PCBs by GC/HSD, EPA 821-R-16-009, December 2016.

128 Method 624.1: Purgeables by GC/MS, EPA 821-R-16-008, December 2016.

129 Method 625.1: Base/Neutrals and Acids by GC/MS, EPA 821-R-16-007, December 2016.

140 Method 1664,Revision B: N-Hexane Extractable Material (HEM; Oil & Grease) and Silica Gel Treated N-Hexane Extractable Material (SGT-HEM; Non-polar Material) by Extraction and Gravimetry, EPA-821-R-10-001, February 2010.

LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility
EPA 624/624.1: m/p-xylene, o-xylene, Naphthalene
EPA 625/625.1: alpha-Terpineol
EPA 8260C/8260D: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270D/8270E: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine, alpha-Terpineol; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

Mansfield Facility
SM 2540D: TSS
EPA 8082A: NPW: PCB: 1, 5, 31, 87,101, 110, 141, 151, 153, 180, 183, 187.
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
Biological Tissue Matrix: EPA 3050B

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility:

Drinking Water
EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B**
EPA 332: Perchlorate; **EPA 524.2:** THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D**.

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2**: Nitrate-N, **SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.**
EPA 624.1: Volatile Halocarbons & Aromatics,
EPA 608.3: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625.1: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045**: PCB-Oil.
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9221E, EPA 1600, EPA 1603, SM9222D.**

Mansfield Facility:

Drinking Water
EPA 200.7: Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1** Hg.
EPA 522, EPA 537.1.

Non-Potable Water
EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.
EPA 200.8: Al, Sb, As, Be, Cd, Cr, Cu, Fe, Pb, Mn, Ni, K, Se, Ag, Na, TL, Zn.
EPA 245.1 Hg.
SM2340B

For a complete listing of analytes and methods, please contact your Alpha Project Manager.

Serial_No:01072210:52

CHAIN OF CUSTODY

PAGE 1 OF ____

Date Rec'd in Lab: 12/21/21

ALPHA Job #: L2170386

ALPHA ANALYTICAL

8 Walkup Drive, Westboro, MA 01581, Tel: 508-898-9220

320 Forbes Blvd, Mansfield, MA 02048, Tel: 508-822-9300

Client Information

Client: GZA

Address: 249 Vanderbilt Ave. Norwood, MA 02062

Phone: (781) 983-1357

Email: wdavis@gza.com

Project Information

Project Name: 13 Corwin Street

Project Location: Peabody, MA

Project #: 18.0174933.02

Project Manager: M. Steele

ALPHA Quote #:

Turn-Around Time

☒ Standard ☐ RUSH (only confirmed if pre-approved!)

Date Due:

Report Information - Data Deliverables

☒ ADEx ☒ EMAIL

Billing Information

☐ Same as Client info PO #:

Regulatory Requirements & Project Information Requirements

☐ Yes ☐ No MA MCP Analytical Methods ☐ Yes ☐ No CT RCP Analytical Methods

☐ Yes ☐ No Matrix Spike Required on this SDG? (Required for MCP Inorganics)

☐ Yes ☐ No GW1 Standards (Info Required for Metals & EPH with Targets)

☐ Yes ☐ No NPDES RGP

☐ Other State /Fed Program ____ Criteria ____

Additional Project Information:

① See attached RGP List

② HexCr has short hold time

ANALYSIS

1. VOC: ☐ 8260 ☒ 624 ☐ 524.2 624.1 SDI
2. SVOC: ~~☐ ABN~~ ~~☐ PAH~~ NH3
3. METALS: ☐ MCP 13 ☐ MCP 14 ☐ RCP 15
4. (METALS): ☐ RCRA5 ☐ RCRA8 ☐ PP13 (See list)
5. ~~EPH: Ranges & Targets / Ranges Only~~ PCB 608.3 625.1
6. VPH: ☐ Ranges & Targets ☐ Ranges Only
7. ~~☐ PCB~~ ~~☐ PEST~~ SUB-Ethanol
8. (TPH): ~~☐ Quant Only~~ ~~☐ Fingerprint~~ -1664
9. Total Hardness
10. Ammonia Nitrogen SM4500
11. TSS
12. HexCr ③ TRC-4500.Cl
13. TPhenol
14. TCN

SAMPLE INFO — *Filtration*: ☐ Field ☐ Lab to do; *Preservation*: ☐ Lab to do

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler Initials	1	2	3	4	5	6	7	8	9	10	11	12	13	14	Sample Comments	TOTAL # BOTTLES
70386-01	GZ-104	12/21/21		GW	KBK	X	X		X	X		X	X			X	X	X	X	①	20
02	SW-1	12/21/21		SW	KBK				X					X	X						3
Container Type						V	P		P	A		V	A	P	P	P	P	A	P		
Preservative						H	D		C	H		A	B	C	D	A	A	D	E		

Container Type	Preservative
P= Plastic	A= None
A= Amber glass	B= HCl
V= Vial	C= HNO_3
G= Glass	D= H_2SO_4
B= Bacteria cup	E= NaOH
C= Cube	F= MeOH
O= Other	G= $NaHSO_4$
E= Encore	H = $Na_2S_2O_3$
D= BOD Bottle	I= Ascorbic Acid
	J = NH_4Cl
	K= Zn Acetate
	O= Other

Relinquished By:	Date/Time	Received By:	Date/Time
KBK [signature]	12/21/21 13:45	[signature] AAL	12/21/21 1604
[signature]	12/21/21 1657	[signature]	12/21/21 1657

All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.

FORM NO: 01-01 (rev. 12-Mar-2012)

ALPHA ANALYTICAL
World Class Chemistry

Subcontract Chain of Custody

Tek Lab, Inc.
5445 Horsehoe Lake Road
Collinsville, IL 62234-7425

Alpha Job Number
L2170386

Client Information

Client: Alpha Analytical Labs
Address: Eight Walkup Drive
Westborough, MA 01581-1019

Phone: 716.427.5228
Email: jbyrnes@alphalab.com

Project Information

Project Location: MA
Project Manager: Jennifer Byrnes

Turnaround & Deliverables Information

Due Date: 01/06/22
Deliverables:

Regulatory Requirements/Report Limits

State/Federal Program:
Regulatory Criteria:

Project Specific Requirements and/or Report Requirements

Reference following Alpha Job Number on final report/deliverables: L2170386

Report to include Method Blank, LCS/LCSD:

Additional Comments: Send all results/reports to subreports@alphalab.com NPDES

Lab ID	Client ID	Collection Date/Time	Sample Matrix	Analysis	Batch QC
	GZ-104	12-21-21 10:00	WATER	Ethanol by EPA 1671 Revision A	

	Relinquished By:	Date/Time:	Received By:	Date/Time:
	CG Clean	12/22/21		
Form No: AL_subcoc				

January 04, 2022

Illinois	100226
Kansas	E-10374
Louisiana	05002
Louisiana	05003
Oklahoma	9978

Jennifer Byrnes
Alpha Analytical
145 Flanders Road
Westborough, MA 01581
TEL: (716) 427-5228
FAX:

RE: L2170386 **WorkOrder:** 21121468

Dear Jennifer Byrnes:

TEKLAB, INC received 1 sample on 12/23/2021 11:00:00 AM for the analysis presented in the following report.

Samples are analyzed on an as received basis unless otherwise requested and documented. The sample results contained in this report relate only to the requested analytes of interest as directed on the chain of custody. NELAP accredited fields of testing are indicated by the letters NELAP under the Certification column. Unless otherwise documented within this report, Teklab Inc. analyzes samples utilizing the most current methods in compliance with 40CFR. All tests are performed in the Collinsville, IL laboratory unless otherwise noted in the Case Narrative.

All quality control criteria applicable to the test methods employed for this project have been satisfactorily met and are in accordance with NELAP except where noted. The following report shall not be reproduced, except in full, without the written approval of Teklab, Inc.

If you have any questions regarding these tests results, please feel free to call.

Sincerely,

Marvin L. Darling
Project Manager
(618)344-1004 ex 41
mdarling@teklabinc.com

Report Contents

http://www.teklabinc.com/

Client: Alpha Analytical
Work Order: 21121468
Client Project: L2170386
Report Date: 04-Jan-22

This reporting package includes the following:

Cover Letter	1
Report Contents	2
Definitions	3
Case Narrative	5
Accreditations	6
Laboratory Results	7
Quality Control Results	8
Receiving Check List	9
Chain of Custody	Appended

Definitions

http://www.teklabinc.com/

Client: Alpha Analytical **Work Order:** 21121468

Client Project: L2170386 **Report Date:** 04-Jan-22

Abbr	Definition
*	Analytes on report marked with an asterisk are not NELAP accredited
CCV	Continuing calibration verification is a check of a standard to determine the state of calibration of an instrument between recalibration.
CRQL	A Client Requested Quantitation Limit is a reporting limit that varies according to customer request. The CRQL may not be less than the MDL.
DF	Dilution factor is the dilution performed during analysis only and does not take into account any dilutions made during sample preparation. The reported result is final and includes all dilution factors.
DNI	Did not ignite
DUP	Laboratory duplicate is a replicate aliquot prepared under the same laboratory conditions and independently analyzed to obtain a measure of precision.
ICV	Initial calibration verification is a check of a standard to determine the state of calibration of an instrument before sample analysis is initiated.
IDPH	IL Dept. of Public Health
LCS	Laboratory control sample is a sample matrix, free from the analytes of interest,spiked with verified known amounts of analytes and analyzed exactly like a sample to establish intra-laboratory or analyst specific precision and bias or to assess the performance of all or a portion of the measurement system.
LCSD	Laboratory control sample duplicate is a replicate laboratory control sample that is prepared and analyzed in order to determine the precision of the approved test method. The acceptable recovery range is listed in the QC Package (provided upon request).
MBLK	Method blank is a sample of a matrix similar to the batch of associated sample (when available) that is free from the analytes of interest and is processed simultaneously with and under the same conditions as samples through all steps of the analytical procedures, and in which no target analytes or interferences should present at concentrations that impact the analytical results for sample analyses.
MDL	"The method detection limit is defined as the minimum measured concentration of a substance that can be reported with 99% confidence that the measured concentration is distinguishable from method blank results."
MS	Matrix spike is an aliquot of matrix fortified (spiked) with known quantities of specific analytes that is subjected to the entire analytical procedures in order to determine the effect of the matrix on an approved test method's recovery system. The acceptable recovery range is listed in the QC Package (provided upon request).
MSD	Matrix spike duplicate means a replicate matrix spike that is prepared and analyzed in order to determine the precision of the approved test method. The acceptable recovery range is listed in the QC Package (provided upon request).
MW	Molecular weight
NC	Data is not acceptable for compliance purposes
ND	Not Detected at the Reporting Limit
NELAP	NELAP Accredited
PQL	Practical quantitation limit means the lowest level that can be reliably achieved within specified limits of precision and accuracy during routine laboratory operation conditions.
RL	The reporting limit the lowest level that the data is displayed in the final report. The reporting limit may vary according to customer request or sample dilution. The reporting limit may not be less than the MDL.
RPD	Relative percent difference is a calculated difference between two recoveries (ie. MS/MSD). The acceptable recovery limit is listed in the QC Package (provided upon request).
SPK	The spike is a known mass of target analyte added to a blank sample or sub-sample; used to determine recovery deficiency or for other quality control purposes.
Surr	Surrogates are compounds which are similar to the analytes of interest in chemical composition and behavior in the analytical process, but which are not normally found in environmental samples.
TIC	Tentatively identified compound: Analytes tentatively identified in the sample by using a library search. Only results not in the calibration standard will be reported as tentatively identified compounds. Results for tentatively identified compounds that are not present in the calibration standard, but are assigned a specific chemical name based upon the library search, are calculated using total peak areas from reconstructed ion chromatograms and a response factor of one. The nearest Internal Standard is used for the calculation. The results of any TICs must be considered estimated, and are flagged with a "T". If the estimated result is above the calibration range it is flagged "ET"
TNTC	Too numerous to count (> 200 CFU)

Definitions

http://www.teklabinc.com/

Client: Alpha Analytical **Work Order:** 21121468

Client Project: L2170386 **Report Date:** 04-Jan-22

Qualifiers

# -	Unknown hydrocarbon	B -	Analyte detected in associated Method Blank
C -	RL shown is a Client Requested Quantitation Limit	E -	Value above quantitation range
H -	Holding times exceeded	I -	Associated internal standard was outside method criteria
J -	Analyte detected below quantitation limits	M -	Manual Integration used to determine area response
ND -	Not Detected at the Reporting Limit	R -	RPD outside accepted recovery limits
S -	Spike Recovery outside recovery limits	T -	TIC(Tentatively identified compound)
X -	Value exceeds Maximum Contaminant Level		

Case Narrative

http://www.teklabinc.com/

Client: Alpha Analytical
Work Order: 21121468
Client Project: L2170386
Report Date: 04-Jan-22

Cooler Receipt Temp: 2.0 °C

Locations

Collinsville

Address 5445 Horseshoe Lake Road
Collinsville, IL 62234-7425
Phone (618) 344-1004
Fax (618) 344-1005
Email jhriley@teklabinc.com

Springfield

Address 3920 Pintail Dr
Springfield, IL 62711-9415
Phone (217) 698-1004
Fax (217) 698-1005
Email KKlostermann@teklabinc.com

Kansas City

Address 8421 Nieman Road
Lenexa, KS 66214
Phone (913) 541-1998
Fax (913) 541-1998
Email jhriley@teklabinc.com

Collinsville Air

Address 5445 Horseshoe Lake Road
Collinsville, IL 62234-7425
Phone (618) 344-1004
Fax (618) 344-1005
Email EHurley@teklabinc.com

Chicago

Address 1319 Butterfield Rd.
Downers Grove, IL 60515
Phone (630) 324-6855
Fax
Email arenner@teklabinc.com

Accreditations

http://www.teklabinc.com/

Client: Alpha Analytical **Work Order:** 21121468

Client Project: L2170386 **Report Date:** 04-Jan-22

State	Dept	Cert #	NELAP	Exp Date	Lab
Illinois	IEPA	100226	NELAP	1/31/2022	Collinsville
Kansas	KDHE	E-10374	NELAP	4/30/2022	Collinsville
Louisiana	LDEQ	05002	NELAP	6/30/2022	Collinsville
Louisiana	LDEQ	05003	NELAP	6/30/2022	Collinsville
Oklahoma	ODEQ	9978	NELAP	8/31/2022	Collinsville
Arkansas	ADEQ	88-0966		3/14/2022	Collinsville
Illinois	IDPH	17584		5/31/2023	Collinsville
Kentucky	UST	0073		1/31/2022	Collinsville
Missouri	MDNR	00930		5/31/2023	Collinsville
Missouri	MDNR	930		1/31/2025	Collinsville

Laboratory Results

http://www.teklabinc.com/

Client: Alpha Analytical
Work Order: 21121468
Client Project: L2170386
Report Date: 04-Jan-22
Lab ID: 21121468-001
Client Sample ID: GZ-104
Matrix: AQUEOUS
Collection Date: 12/21/2021 10:00

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
EPA 600 1671A, PHARMACEUTICAL MANUFACTURING INDUSTRY NON-PURGEABLE VOLATILE ORGANICS								
Ethanol	*	20		**ND**	mg/L	1	12/29/2021 14:59	R304389

Quality Control Results

http://www.teklabinc.com/

Client: Alpha Analytical **Work Order:** 21121468

Client Project: L2170386 **Report Date:** 04-Jan-22

EPA 600 1671A, PHARMACEUTICAL MANUFACTURING INDUSTRY NON-PURGEABLE VOLATILE OR

Batch R304389 **SampType:** MBLK Units **mg/L**
SampID: MBLK-211229

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Ethanol	*	20		**ND**						12/29/2021

Batch R304389 **SampType:** LCS Units **mg/L**
SampID: LCS-211229

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Ethanol	*	20		**300**	250.0	0	119.4	70	132	12/29/2021

Batch R304389 **SampType:** MS Units **mg/L**
SampID: 21121468-001AMS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Ethanol	*	20		**310**	250.0	0	124.0	70	132	12/29/2021

Batch R304389 **SampType:** MSD Units **mg/L** RPD Limit: **30**
SampID: 21121468-001AMSD

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Ethanol	*	20		**320**	250.0	0	127.4	310.1	2.71	12/29/2021

Receiving Check List

http://www.teklabinc.com/

Client: Alpha Analytical
Work Order: 21121468
Client Project: L2170386
Report Date: 04-Jan-22

Carrier: UPS
Received By: MEK

Completed by: Mary E. Kemp
On: 23-Dec-21

Reviewed by: Elizabeth A. Hurley
On: 23-Dec-21

Pages to follow: Chain of custody 1 Extra pages included 0

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐	Temp °C 2.0
Type of thermal preservation?	None ☐	Ice ☑	Blue Ice ☐	Dry Ice ☐
Chain of custody present?	Yes ☑	No ☐		
Chain of custody signed when relinquished and received?	Yes ☑	No ☐		
Chain of custody agrees with sample labels?	Yes ☑	No ☐		
Samples in proper container/bottle?	Yes ☑	No ☐		
Sample containers intact?	Yes ☑	No ☐		
Sufficient sample volume for indicated test?	Yes ☑	No ☐		
All samples received within holding time?	Yes ☑	No ☐		
Reported field parameters measured:	Field ☐	Lab ☐	NA ☑	
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐		

When thermal preservation is required, samples are compliant with a temperature between 0.1°C - 6.0°C, or when samples are received on ice the same day as collected.

Water – at least one vial per sample has zero headspace?	Yes ☑	No ☐	No VOA vials ☐
Water - TOX containers have zero headspace?	Yes ☐	No ☐	No TOX containers ☑
Water - pH acceptable upon receipt?	Yes ☑	No ☐	NA ☐
NPDES/CWA TCN interferences checked/treated in the field?	Yes ☐	No ☐	NA ☑

Any No responses must be detailed below or on the COC.

2112 1468

ALPHA ANALYTICAL
World Class Chemistry

Subcontract Chain of Custody

Tek Lab, Inc.
5445 Horsehoe Lake Road
Collinsville, IL 62234-7425

Alpha Job Number
L2170386

Client Information

Client: Alpha Analytical Labs
Address: Eight Walkup Drive
Westborough, MA 01581-1019

Phone: 716.427.5228
Email: jbyrnes@alphalab.com

Project Information

Project Location: MA
Project Manager: Jennifer Byrnes

Turnaround & Deliverables Information

Due Date: 01/06/22
Deliverables:

Regulatory Requirements/Report Limits

State/Federal Program:
Regulatory Criteria:

Project Specific Requirements and/or Report Requirements

Reference following Alpha Job Number on final report/deliverables: L2170386

Report to include Method Blank, LCS/LCSD:

Additional Comments: Send all results/reports to subreports@alphalab.com NPDES

Lab ID	Client ID	Collection Date/Time	Sample Matrix	Analysis	Batch QC
21121468-001	GZ-104	12-21-21 10:00	WATER	Ethanol by EPA 1671 Revision A	

2.0 LTG1
ØHS

	Relinquished By:	Date/Time:	Received By:	Date/Time:
	CG Ebean	12/22/21	Mary Kemp (UPS)	12/23/21 1100
Form No: AL_subcoc				

APPENDIX C – CALCULATION SHEETS FOR EFFLUENT LIMITATIONS AND DILUTION FACTOR

File No. 18.0175203.00
January 12, 2022

DILUTION FACTOR CALCULATIONS
NOTICE OF INTENT FOR THE REMEDIATION GENERAL PERMIT
13 Corwin Street, Peabody, Massachusetts

$$DF = \frac{Q_d + Q_s}{Q_d}$$

Where,

DF = Dilution Factor

Q_d = Maximum Flow Rate of the Discharge in million gallons per day (MGD)

Q_s = Receiving Water 7Q10 Flow (MGD) where,

7Q10 = Minimum Flow (MGD) for 7 Consecutive Days with a Recurrence Interval of 10 Years.

Q_d = 50 gpm = 0.072 MGD

Q_s = 0.135 cfs = 0.08725 MGD (7Q10 approved by MassDEP in email dated 11/16/2021)

$$\therefore DF = \frac{Q_d + Q_s}{Q_d} = \frac{0.072 + 0.08725}{0.072} = 2.21$$

\\gzaamesbury\jobs\175200's\18.0175203.00 Cargo Ventures Corwin St\Work\NPDES-Related\RGP NOI\Appendix C - DF Calcs\DF Calculations 50 gpm.docx

Enter number values in green boxes below

Enter values in the units specified

↓

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

Enter a dilution factor, if other than zero

↓

2.21

Enter values in the units specified

↓

69.8	C_d = Enter influent hardness in **mg/L** $CaCO_3$
84.4	C_s = Enter receiving water hardness in **mg/L** $CaCO_3$

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

↓

7.94	pH in **Standard Units**
0.77	Temperature in **^{o}C**
0.207	Ammonia in **mg/L**
84.4	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**
1.15	Copper in **µg/L**
502	Iron in **µg/L**
0	Lead in **µg/L**
0	Mercury in **µg/L**
5.52	Nickel in **µg/L**
0	Selenium in **µg/L**
0	Silver in **µg/L**
15.76	Zinc in **µg/L**

Enter **influent** concentrations in the units specified

↓

0	TRC in **µg/L**
0.307	Ammonia in **mg/L**
0	Antimony in **µg/L**
0	Arsenic in **µg/L**
0	Cadmium in **µg/L**
0	Chromium III in **µg/L**
0	Chromium VI in **µg/L**
0	Copper in **µg/L**
57	Iron in **µg/L**
0	Lead in **µg/L**
0	Mercury in **µg/L**
0	Nickel in **µg/L**
0	Selenium in **µg/L**
0	Silver in **µg/L**
0	Zinc in **µg/L**
0	Cyanide in **µg/L**
0	Phenol in **µg/L**
0	Carbon Tetrachloride in **µg/L**
0	Tetrachloroethylene in **µg/L**
0	Total Phthalates in **µg/L**
0	Diethylhexylphthalate in **µg/L**
0	Benzo(a)anthracene in **µg/L**
0	Benzo(a)pyrene in **µg/L**
0	Benzo(b)fluoranthene in **µg/L**
0	Benzo(k)fluoranthene in **µg/L**
0	Chrysene in **µg/L**
0	Dibenzo(a,h)anthracene in **µg/L**
0	Indeno(1,2,3-cd)pyrene in **µg/L**
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	0.2073	µg/L
Chromium III	**323**	µg/L	64.2	µg/L
Chromium VI	**323**	µg/L	11.4	µg/L
Copper	**242**	µg/L	6.9	µg/L
Iron	**5000**	µg/L	1000	µg/L
Lead	**160**	µg/L	2.01	µg/L
Mercury	**0.739**	µg/L	0.91	µg/L
Nickel	**1450**	µg/L	38.5	µg/L
Selenium	**235.8**	µg/L	5.0	µg/L
Silver	**35.1**	µg/L	2.0	µg/L
Zinc	**420**	µg/L	88.4	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

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: October 22, 2021
Consultation Code: 05E1NE00-2022-SLI-0283
Event Code: 05E1NE00-2022-E-00911
Project Name: 13 Corwin Street

Subject: List of threatened and endangered species that may occur in your proposed project location 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".

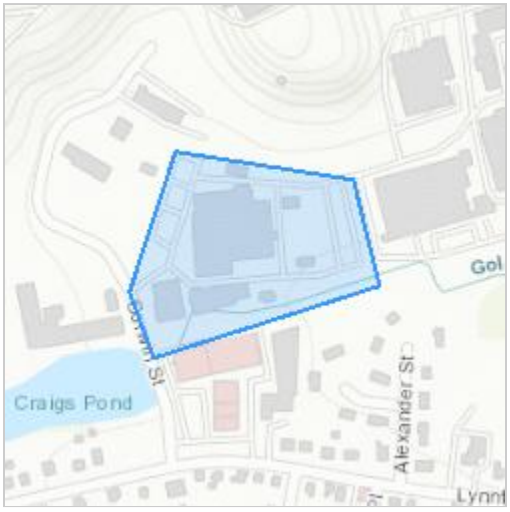
This species list is provided by:

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

Project Summary

Consultation Code: 05E1NE00-2022-SLI-0283
Event Code: Some(05E1NE00-2022-E-00911)
Project Name: 13 Corwin Street
Project Type: DEVELOPMENT
Project Description: Stahl Redevelopment
Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@42.5185427,-70.9576057243538,14z



Counties: Essex County, Massachusetts

Endangered Species Act Species

There is a total of 2 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.

---

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

Insects

NAME	STATUS
Monarch Butterfly *Danaus plexippus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9743	Candidate

Critical habitats

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

APPENDIX E – MACRIS SEARCH RESULTS

Massachusetts Cultural Resource Information System

MACRIS

MACRIS Search Results

Search Criteria: Town(s): Peabody; Place: Peabody; Street No: 13; Street Name: corwin; Resource Type(s): Area, Building, Burial Ground, Object, Structure;

Inv. No.	Property Name	Street	Town	Year