Wilcox & Barton INC.

CIVIL • ENVIRONMENTAL • GEOTECHNICAL

LIMITED SUBSURFACE INVESTIGATION REPORT

SYMONDS WAY PARCEL (0 EAST OF HAVERHILL STREET)
READING, MASSACHUSETTS 01867

Prepared for:
Bargmann Hendrie + Archetype, Inc.
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November 4, 2024

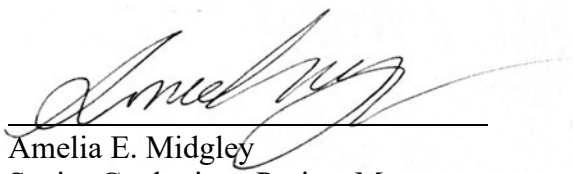
Wilcox & Barton, Inc. Project No. BHAI0002

CERTIFICATION

The following personnel have prepared and/or reviewed this report for accuracy, content, and quality of presentation.

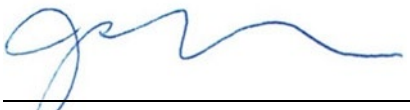
Document Title: Limited Subsurface Investigation Report
Symonds Way Parcel (0 East of Haverhill Street)
Reading, Massachusetts 01867

Date/Version: November 4, 2024



Amelia E. Midgley
Senior Geologist – Project Manager

Date: November 4, 2024



John DeMille, LSP
Associate Vice President

Date: November 4, 2024

TABLE OF CONTENTS

1.0 INTRODUCTION

Wilcox & Barton, Inc. was retained by Bargmann Hendrie + Archetype, Inc. to perform a limited subsurface investigation (LSI) at 0 East of Haverhill Street in Reading, Massachusetts. The LSI was performed to assess for the presence/absence of contamination associated with the following concerns identified in the September 2022 *Preliminary Environmental Screening* (September 2022 PES), prepared by Weston & Sampson Engineers, Inc. (WSE):

- Current and historical operation of a rifle club at the site and adjoining parcels.
- Historical operation of a Nike missile facility on adjoining parcels.
- Abandoned vehicles located adjacent to the subject property.
- Elevated organic vapors and non-native debris/fill material identified in soil at the subject property.

The LSI activities were performed by Wilcox & Barton, Inc. in October 2024 and included soil boring advancement, monitoring well installation, and collection of soil samples for laboratory analysis. A summary of the LSI activities is provided in Section 4.0.

2.0 PROPERTY DESCRIPTION

The property consists of 15.2 acres of land and is identified by the Town of Reading Assessing Department as Parcel ID 035.0000-0133.0. The property is vacant and consists of undeveloped wooded land. According to the 2021 United States Geological Survey (USGS) 2021 topographic map for Reading, Massachusetts, the property is located at an elevation between 90 and 100 feet above mean sea level. No surface water bodies are located on the property; however, wetland areas are located on the southern portion of the property and on adjacent properties to the east, west, and south.

Surrounding properties are mixed use. The northern portion of the property is bordered by Symonds Way (also referred to as Range Road), beyond which is the Burbank Ice Area. Residential properties abut the western portion of the property. Undeveloped wooded and conservation land border the southern and southeastern portions of the property. The Reading Rifle & Revolver Club (firing range) borders the northeastern portion of the subject property.

The location of the property is depicted on Figure 1 – *Site Location Map* and property features are depicted on Figure 2 – *Site Plan*.

3.0 PROPERTY BACKGROUND

According to the September 2022 PSE prepared by WSE, the northern portion of the property was developed with an unimproved roadway between 1893 and 1915. The roadway provided access to the adjacent Reading Rifle & Revolver Club property beginning circa 1944. The northern portion of the property was cleared of vegetation by 1952 to facilitate development of the Nike B03 missile facility on an adjoining parcel to the north. The roadway on the northern portion of the subject property provided access to the Nike missile facility until 1963, when the facility was decommissioned. The subject property was most recently used by a construction

company for material staging. The roadway on the northern portion of the property continues to provide access to the adjacent Reading Rifle & Revolver Club. The Town of Reading has owned the property since August 2019 and is currently evaluating options to redevelop the property for municipal use.

4.0 LIMITED SUBSURFACE INVESTIGATION

4.1 Soil Boring Advancement and Monitoring Well Installation

On October 23, 2024, New England Geotech, LLC, of Jamestown, Rhode Island, advanced soil borings B(MW)-201 through B(MW)-204 at the locations depicted on Figure 2. The borings were advanced using direct-push drilling techniques to depths ranging between 15 and 20 feet below ground surface (bgs). The boring locations were selected based on observations and field screening data documented by WSE in the September 2022 PES. Borings B(MW)-201 and B(MW)-202 were advanced at locations where WSE encountered elevated soil headspace field screening readings. Boring B(MW)-203 was advanced in an area where WSE observed non-native fill materials. Boring B(MW)-204 was advanced on the easternmost portion of the property to evaluate the presence/absence of contamination associated with the historical and/or current operation of adjoining properties as a missile facility and firing range.

Shallow soil borings HA-1 through HA-10 were advanced throughout the property using hand tools at the locations depicted on Figure 2. The shallow soil borings were advanced to a depth of approximately 1-foot bgs to evaluate for the presence of potential lead-impacted soil associated with the long-term use of the adjacent property as a firing range.

Soil borings B(MW)-201 through B(MW)-204 were completed as permanent monitoring wells MW-201 through MW-204, respectively. The monitoring wells were constructed with 2-inch diameter, thread-coupled, Schedule 40 polyvinyl chloride (PVC) materials. A 10- to 15-foot length of 0.010-inch machine-slotted PVC well screen was installed across the apparent water table interface at each location. Clean silica sand was placed around each well screen, and a hydrated bentonite divider seal was installed above the filter pack. The annular space above the divider seal was backfilled with filter sand. Each well was completed with an approximately 3-foot length of PVC well riser extending above the ground surface. Soil boring logs and monitoring well completion details are included in Appendix A.

The monitoring wells were developed using dedicated polyethylene bailers to promote the flow of water through the sand pack and into the well. Well development continued until the wells were dry or until the purge water was clarified. Inspection of the groundwater did not identify visual or olfactory indicators of potential contamination.

4.2 Soil Sampling and Analysis

During advancement of soil borings B(MW)-201 through B(MW)-204, soil samples were collected continuously and classified using a modified Burmister Soil Classification System as described in the Wilcox & Barton, Inc. Standard Operating Procedure FP-14, which is included in Appendix B. Soil primarily consisted of fine to coarse sand with varying amounts of silt and

gravel. Soil samples were screened for total organic vapors using a photoionization detector (PID) in accordance with the Wilcox & Barton, Inc. Standard Operating Procedure FP-01, which is included in Appendix B. Total organic vapor concentrations detected in soil samples collected from borings B(MW)-201 through B(MW)-204 did not exceed 5.0 parts per million by volume (ppmv). No visual or olfactory indicators of contamination were observed in the soil samples.

During advancement of shallow soil borings HA-1 through HA-10, soil samples were collected and visually inspected for the presence of munitions waste and other indications of potential contamination. No munitions waste or other materials presenting a concern to the quality of the shallow soil at the property were observed.

Discrete soil samples were collected from borings B(MW)-201 through B(MW)-204 at depths between 6 and 16.5 feet bgs. The samples were submitted to Pace Analytical Laboratory (Pace) of East Longmeadow, Massachusetts, under standard chain of custody protocols for analysis of extractable petroleum hydrocarbons (EPH) by the Massachusetts Department of Environmental Protection (MassDEP) Method and volatile organic compounds (VOCs) by the U.S. Environmental Protection Agency (EPA) Method 8260. Discrete soil samples were also collected from each of the shallow soil boring locations (HA-1 through HA-10) at depths between ground surface and 1-foot bgs and submitted to Pace for analysis of total lead by EPA Method 6010.

No compounds were detected in the soil samples at concentrations exceeding or approaching the *Massachusetts Contingency Plan* (MCP; 310 CMR 40.0000) Reportable Concentrations for S-1 soils. No EPH compounds of VOCs were detected above laboratory reporting limits in the soil samples collected from borings B(MW)-201 through B(MW)-204. Lead was detected in each of the soil samples collected from shallow borings HA-1 through HA-10 at concentrations ranging between 6.9 and 71 milligrams per kilogram (mg/kg). These lead concentrations are consistent with natural background conditions, as described in the MassDEP Technical Update: *Background Levels of Polycyclic Aromatic Hydrocarbons and Metals in Soil* (May 2002). The soil analytical results are summarized in Table 1 – *Soil Samples – Summary of Analytical Results* and the laboratory report is provided in Appendix C.

5.0 CONCLUSIONS AND RECOMMENDATIONS

Wilcox & Barton, Inc. conducted an LSI at 0 East of Haverhill Street in Reading, Massachusetts, to assess for the presence/absence of contamination associated with the concerns identified in the September 2022 PES prepared by WSE. The LSI was performed in October 2024 and included soil boring advancement, monitoring well installation, and collection of soil samples for laboratory analysis.

No field evidence of contamination was identified during soil boring advancement or monitoring well development. Laboratory analysis of soil samples did not identify contaminant concentrations exceeding or approaching the MCP Reportable Concentrations for S-1 soils, and detected analyte concentrations were consisted with natural background conditions. Based on soil sampling and field screening results, no groundwater samples were collected for laboratory analysis.

Based on the results of the LSI activities, no additional assessment or remediation activities are recommended at this time. If visual or olfactory indicators of contamination are identified during site redevelopment, additional assessment should be performed to evaluate if regulatory notification, remediation, or specific environmental media management or handling activities are required.

TABLES

TABLE 1
Soil Samples - Summary of Analytical Results
Symonds Way (0 East of Haverhill Street)
Reading, Massachusetts

Sample Identification Sample Date Sample Depth (feet) / PID (ppmv)	MCP Reportable Concentrations in Soil ¥ RCS-1	B(MW)-201 10/23/2024 7-7.5 / 0.0		B(MW)-202 10/23/2024 6-6.5 / 0.2		B(MW)-203 10/23/2024 15.5-16.5 / 0.1		B(MW)-204 10/23/2024 6-6.5 / 0.2	
Extractable Petroleum Hydrocarbons (EPH) by MassDEP Method EPH 04-1.1									
C9-C18 Aliphatic Hydrocarbons	1,000	13	U	12	U	12	U	11	U
C19-C36 Aliphatic Hydrocarbons	3,000	13	U	12	U	12	U	11	U
C11-C22 Aromatic Hydrocarbons	1,000	13	U	12	U	12	U	11	U
Acenaphthene	4	0.13	U	0.12	U	0.12	U	0.11	U
Acenaphthylene	2	0.13	U	0.12	U	0.12	U	0.11	U
Anthracene	1,000	0.13	U	0.12	U	0.12	U	0.11	U
Benzo(a)anthracene	20	0.13	U	0.12	U	0.12	U	0.11	U
Benzo(a)pyrene	2	0.13	U	0.12	U	0.12	U	0.11	U
Benzo(b)fluoranthene	20	0.13	U	0.12	U	0.12	U	0.11	U
Benzo(g,h,i)perylene	1,000	0.13	U	0.12	U	0.12	U	0.11	U
Benzo(k)fluoranthene	200	0.13	U	0.12	U	0.12	U	0.11	U
Chrysene	200	0.13	U	0.12	U	0.12	U	0.11	U
Dibenzo(a,h)anthracene	2	0.13	U	0.12	U	0.12	U	0.11	U
Fluoranthene	1,000	0.13	U	0.12	U	0.12	U	0.11	U
Fluorene	1,000	0.13	U	0.12	U	0.12	U	0.11	U
Indeno(1,2,3-cd)pyrene	20	0.13	U	0.12	U	0.12	U	0.11	U
2-Methylnaphthalene	0.7	0.13	U	0.12	U	0.12	U	0.11	U
Naphthalene	4	0.13	U	0.12	U	0.12	U	0.11	U
Phenanthrene	10	0.13	U	0.12	U	0.12	U	0.11	U
Pyrene	1,000	0.13	U	0.12	U	0.12	U	0.11	U
Total Metals by EPA Methods 6010 and 7471									
Lead	200	--		--		--		--	
Volatile Organic Compounds (VOCs) by EPA Method 8260									
Benzene	2	0.0020	U	0.0014	U	0.0018	U	0.0015	U
Ethylbenzene	40	0.0020	U	0.0014	U	0.0018	U	0.0015	U
Naphthalene	4	0.0039	U	0.0028	U	0.0035	U	0.0030	U
Tetrachloroethene (PCE)	1	0.0020	U	0.0014	U	0.0018	U	0.0015	U
Toluene	30	0.0020	U	0.0014	U	0.0018	U	0.0015	U
Trichloroethene (TCE)	0.3	0.0020	U	0.0014	U	0.0018	U	0.0015	U
Vinyl chloride	0.3	0.0098	U	0.0069	U	0.0088	U	0.0076	U
Total Xylenes	100	0.0059	U	0.0042	U	0.0053	U	0.0045	U

All results in milligrams per kilogram (mg/kg) unless otherwise indicated.
Only detected and select analytes presented; all others were not detected.

MCP	Massachusetts Contingency Plan.
PID	Photoionization Detector.
ppmv	Parts per million by volume (ppmv).
U	Not detected at or above the listed laboratory reporting limit.
--	Not analyzed or reported.
Bold shaded	Detected concentration exceeds MCP Reportable Concentration in Soil (RCS-1).
Bold italicized	Not detected, laboratory reporting limit exceeds MCP Reportable Concentration in Soil (RCS-1).
¥	310 CMR 40.1600, rev. 3/1/2024.

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Symonds Way (0 East of Haverhill Street)
Reading, Massachusetts

Sample Identification Sample Date Sample Depth (feet) / PID (ppmv)	MCP Reportable Concentrations in Soil ¥ RCS-1	HA-1 10/23/2024 0-1 / --	HA-2 10/23/2024 0-1 / --	HA-3 10/23/2024 0-1 / --	HA-4 10/23/2024 0-1 / --
Extractable Petroleum Hydrocarbons (EPH) by MassDEP Method EPH 04-1.1					
C9-C18 Aliphatic Hydrocarbons	1,000	--	--	--	--
C19-C36 Aliphatic Hydrocarbons	3,000	--	--	--	--
C11-C22 Aromatic Hydrocarbons	1,000	--	--	--	--
Acenaphthene	4	--	--	--	--
Acenaphthylene	2	--	--	--	--
Anthracene	1,000	--	--	--	--
Benzo(a)anthracene	20	--	--	--	--
Benzo(a)pyrene	2	--	--	--	--
Benzo(b)fluoranthene	20	--	--	--	--
Benzo(g,h,i)perylene	1,000	--	--	--	--
Benzo(k)fluoranthene	200	--	--	--	--
Chrysene	200	--	--	--	--
Dibenzo(a,h)anthracene	2	--	--	--	--
Fluoranthene	1,000	--	--	--	--
Fluorene	1,000	--	--	--	--
Indeno(1,2,3-cd)pyrene	20	--	--	--	--
2-Methylnaphthalene	0.7	--	--	--	--
Naphthalene	4	--	--	--	--
Phenanthrene	10	--	--	--	--
Pyrene	1,000	--	--	--	--
Total Metals by EPA Methods 6010 and 7471					
Lead	200	44	28	71	30
Volatile Organic Compounds (VOCs) by EPA Method 8260					
Benzene	2	--	--	--	--
Ethylbenzene	40	--	--	--	--
Naphthalene	4	--	--	--	--
Tetrachloroethene (PCE)	1	--	--	--	--
Toluene	30	--	--	--	--
Trichloroethene (TCE)	0.3	--	--	--	--
Vinyl chloride	0.3	--	--	--	--
Total Xylenes	100	--	--	--	--

All results in milligrams per kilogram (mg/kg) unless otherwise indicated.
Only detected and select analytes presented; all others were not detected.

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Symonds Way (0 East of Haverhill Street)
Reading, Massachusetts

Sample Identification Sample Date Sample Depth (feet) / PID (ppmv)	MCP Reportable Concentrations in Soil ¥ RCS-1	HA-5 10/23/2024 0-1 / --	HA-6 10/23/2024 0-1 / --	HA-7 10/23/2024 0-1 / --	HA-8 10/23/2024 0-1 / --
Extractable Petroleum Hydrocarbons (EPH) by MassDEP Method EPH 04-1.1					
C9-C18 Aliphatic Hydrocarbons	1,000	--	--	--	--
C19-C36 Aliphatic Hydrocarbons	3,000	--	--	--	--
C11-C22 Aromatic Hydrocarbons	1,000	--	--	--	--
Acenaphthene	4	--	--	--	--
Acenaphthylene	2	--	--	--	--
Anthracene	1,000	--	--	--	--
Benzo(a)anthracene	20	--	--	--	--
Benzo(a)pyrene	2	--	--	--	--
Benzo(b)fluoranthene	20	--	--	--	--
Benzo(g,h,i)perylene	1,000	--	--	--	--
Benzo(k)fluoranthene	200	--	--	--	--
Chrysene	200	--	--	--	--
Dibenzo(a,h)anthracene	2	--	--	--	--
Fluoranthene	1,000	--	--	--	--
Fluorene	1,000	--	--	--	--
Indeno(1,2,3-cd)pyrene	20	--	--	--	--
2-Methylnaphthalene	0.7	--	--	--	--
Naphthalene	4	--	--	--	--
Phenanthrene	10	--	--	--	--
Pyrene	1,000	--	--	--	--
Total Metals by EPA Methods 6010 and 7471					
Lead	200	6.9	34	19	31
Volatile Organic Compounds (VOCs) by EPA Method 8260					
Benzene	2	--	--	--	--
Ethylbenzene	40	--	--	--	--
Naphthalene	4	--	--	--	--
Tetrachloroethene (PCE)	1	--	--	--	--
Toluene	30	--	--	--	--
Trichloroethene (TCE)	0.3	--	--	--	--
Vinyl chloride	0.3	--	--	--	--
Total Xylenes	100	--	--	--	--

All results in milligrams per kilogram (mg/kg) unless otherwise indicated.
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Reading, Massachusetts

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Extractable Petroleum Hydrocarbons (EPH) by MassDEP Method EPH 04-1.1			
C9-C18 Aliphatic Hydrocarbons	1,000	--	--
C19-C36 Aliphatic Hydrocarbons	3,000	--	--
C11-C22 Aromatic Hydrocarbons	1,000	--	--
Acenaphthene	4	--	--
Acenaphthylene	2	--	--
Anthracene	1,000	--	--
Benzo(a)anthracene	20	--	--
Benzo(a)pyrene	2	--	--
Benzo(b)fluoranthene	20	--	--
Benzo(g,h,i)perylene	1,000	--	--
Benzo(k)fluoranthene	200	--	--
Chrysene	200	--	--
Dibenzo(a,h)anthracene	2	--	--
Fluoranthene	1,000	--	--
Fluorene	1,000	--	--
Indeno(1,2,3-cd)pyrene	20	--	--
2-Methylnaphthalene	0.7	--	--
Naphthalene	4	--	--
Phenanthrene	10	--	--
Pyrene	1,000	--	--
Total Metals by EPA Methods 6010 and 7471			
Lead	200	18	46
Volatile Organic Compounds (VOCs) by EPA Method 8260			
Benzene	2	--	--
Ethylbenzene	40	--	--
Naphthalene	4	--	--
Tetrachloroethene (PCE)	1	--	--
Toluene	30	--	--
Trichloroethene (TCE)	0.3	--	--
Vinyl chloride	0.3	--	--
Total Xylenes	100	--	--

All results in milligrams per kilogram (mg/kg) unless otherwise indicated.
Only detected and select analytes presented; all others were not detected.

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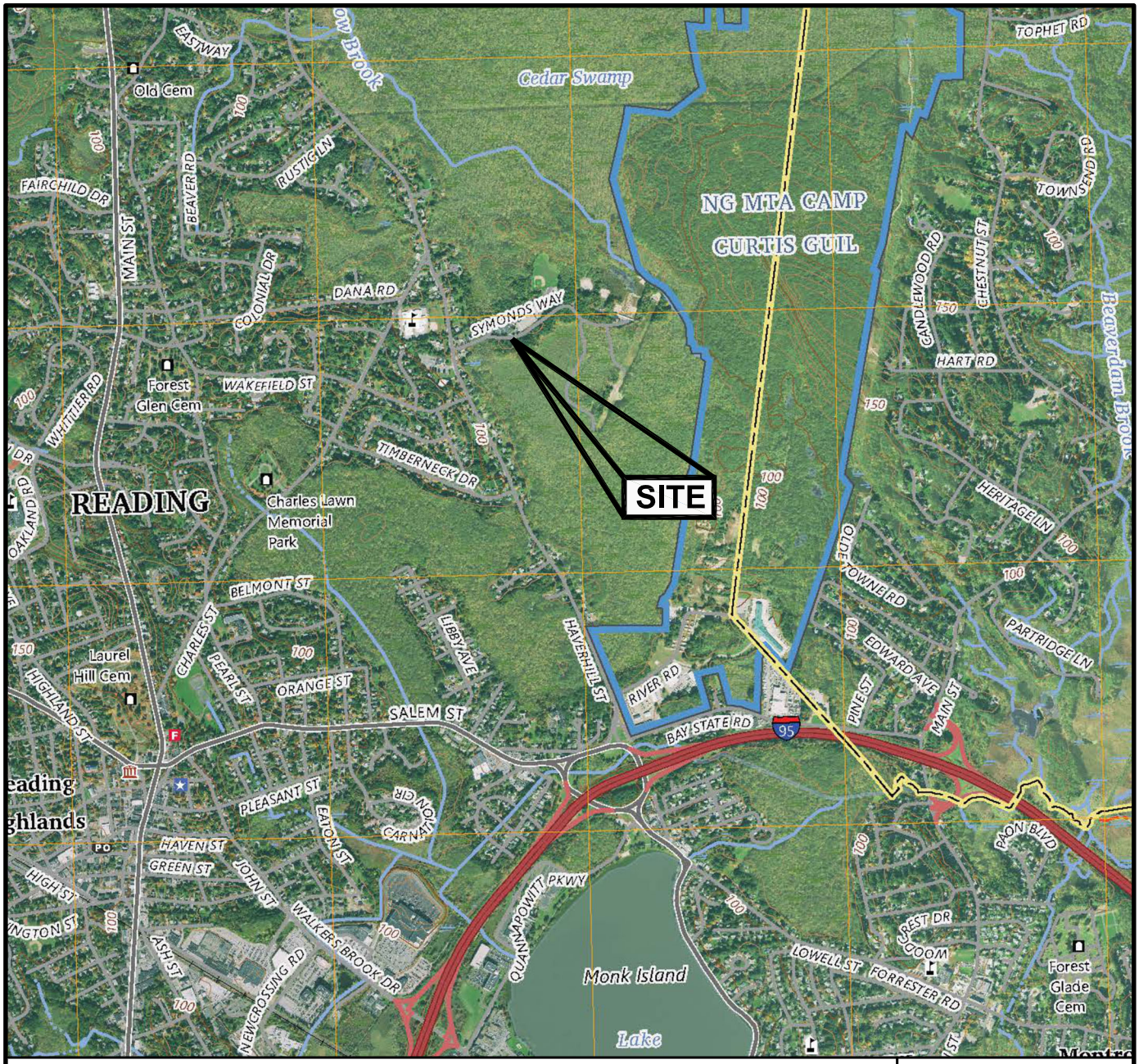
FIGURES



SCALE: 1:2,000

1 1/2 0 1 MILE

1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

1 .5 0 1 KILOMETER

CONTOUR INTERVAL 10 FEET
NORTH AMERICAN VERTICAL DATUM OF 1988

DATE 10/31/2024	SCALE AS SHOWN	FILE BHAI0002-SP
APPROVED BY JTD	DRAWN BY AHL	REVISED
CLIENT BARGMANN HENDRIE + ARCHETYPE, INC.		JOB NUMBER BHAI0002
LOCATION SYMONDS WAY (0 EAST OF HAVERHILL STREET) READING, MASSACHUSETTS		MAP SOURCE READING, MA USGS QUAD 2021

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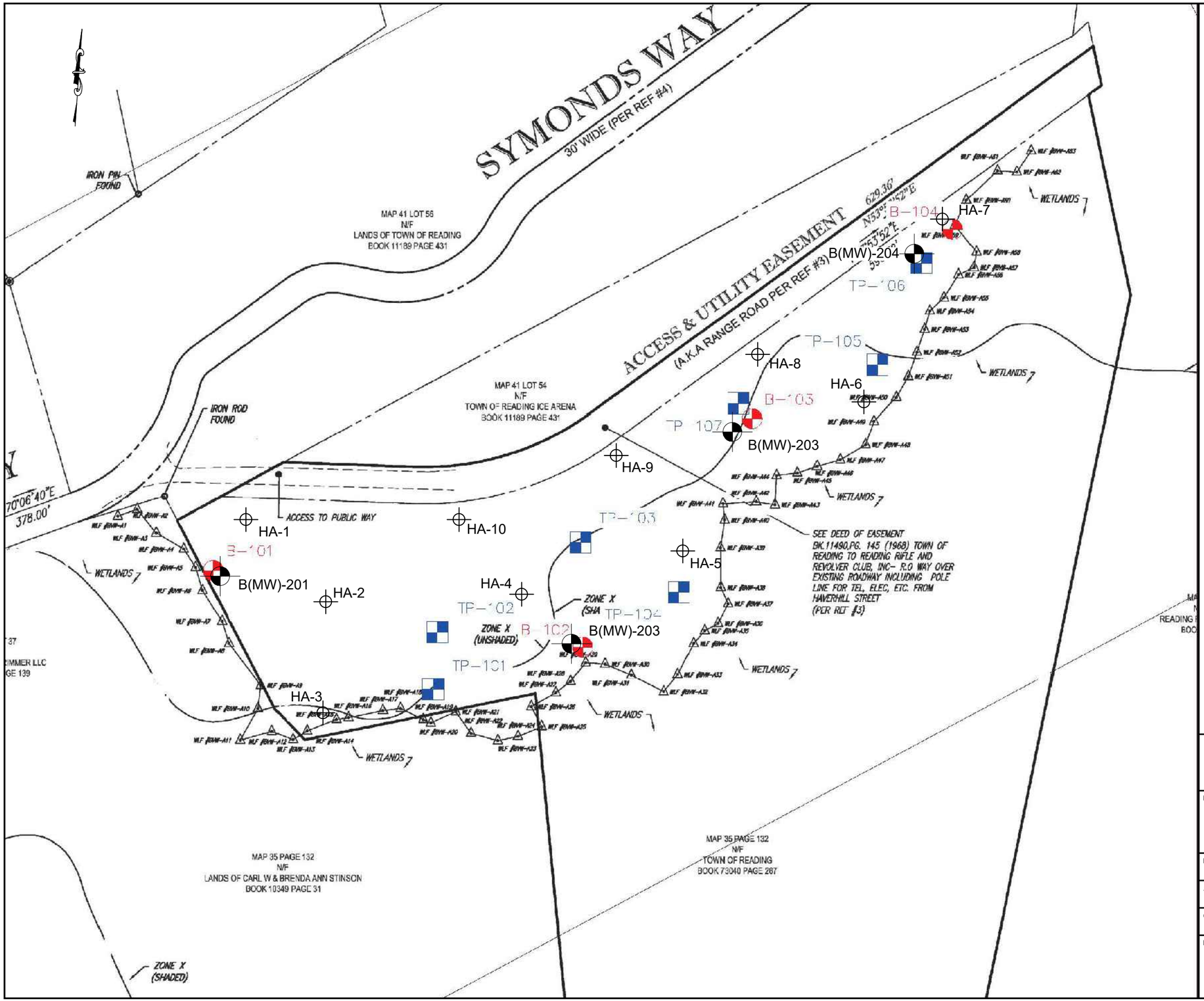
SITE LOCATION MAP

FIGURE 1



LEGEND

- SOIL BORING AND MONITORING WELL LOCATION
- HAND AUGER SOIL SAMPLE LOCATION
- TEST PIT LOCATION (ADVANCED BY WESTON & SAMPSON)
- SOIL BORING LOCATION (ADVANCED BY WESTON & SAMPSON)

NOTES

1. EXISTING CONDITIONS AND NORTH ORIENTATION DEPICTED ON THIS DRAWING ARE BASED ON PLANS TITLED "SITE PLAN" DATED AUGUST, 2022, BY WESTON & SAMPSON, AND WILCOX & BARTON, INC. SITE VISITS.
2. THIS DRAWING IS NOT INTENDED TO BE A BOUNDARY SURVEY.

GRAPHIC SCALE

100 0 50 100 200

(IN FEET)

1 inch = 100 feet

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DRAWING TITLE

SITE PLAN

DATE	SCALE	FILE
10/31/2024	1" = 100'	BHAI0002-SP
APPROVED BY: JTD	DRAFTED BY: AHL	REVISED
CLIENT: BARGMANN HENDRIE + ARCHETYPE, INC.		JOB NO.: BHAI0002
LOCATION: SYMONDS WAY (0 EAST OF HAVERHILL STREET) READING, MASSACHUSETTS		DRAWING NO.: FIGURE 2
		02 of 02

APPENDIX A

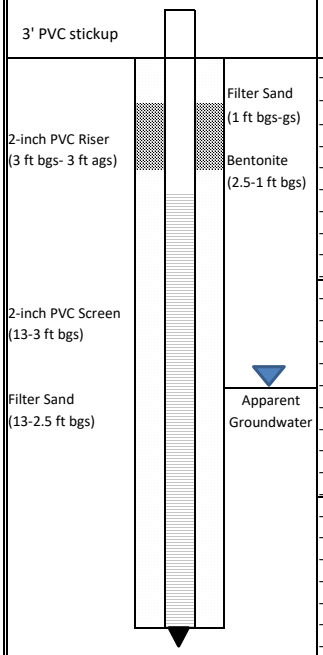
Soil Boring Logs and Monitoring Well Completion Details

WILCOX & BARTON, INC.

SOIL BORING LOG
BORING NO: B(MW)-201

PROJECT: BHAI0002	SHEET NO. : 1 of 1
CLIENT: Bargmann Hendrie + Archetype, Inc	JOB NO: BHAI0002
BORING CONTRACTOR: New England Geotech LLC	TOC ELEVATION:

GROUNDWATER MEASUREMENTS:					CASING	SAMPLE	CORE	TUBE	DATE STARTED: 10/23/2024
DATE	TIME	WATER DEPTH	REFERENCE	TYPE	Steel	AL	--	--	DATE FINISHED: 10/23/2024
				DIAMETER	3"	--	--	--	DRILLER: Maynor & Cody
				WEIGHT	--	--	--	--	INSPECTOR: E. Daigle
				FALL	--	--	--	--	DRILL RIG: Geoprobe 7822DT



DEPTH (ft)	SAMPLE NO.	SAMPLE RECOVERY (ft)	SAMPLE BLOWS PER 0.5 FOOT	CLASSIFICATION	PID (ppm) RF = 1.0
1	S-1	2.5/5		0-0.5 ft bgs: Brown topsoil.	0.1
2				0.5-5 ft bgs: Tan, fine to coarse SAND, some Gravel, trace roots, apparent iron staining between 3 and 5 ft bgs, dry.	
3					0.1
4					
5					
6	S-2	3/5		5-7.5 ft bgs: Tan, fine to coarse SAND, trace Gravel, apparent iron staining, dry.	0.0
7					
8				7.5-10 ft bgs: Tan and gray, fine to coarse SAND, apparent iron staining, wet.	
9					0.0
10					
11	S-3	4.5/5		10-15 ft bgs: Tan and gray, fine to coarse SAND, trace Silt and Gravel, apparent iron staining, wet.	
12					
13					0.0
14					
15					
16	S-4	3.5/5		15-20 ft bgs: Tan and gray, fine to coarse SAND, apparent iron staining, wet.	
17					
18					0.0
19					
20					
21				Boring terminated at 20 ft bgs.	
22					
23					
24					
25					
26					
27					
28					
29					
30				AL = acetate liner.	
31				ft (a/b)gs = feet (above/below) ground surface.	
32				PID = Photoionization detector, measuring organic vapors in parts per million (ppm) by volume.	
33				RF = Response factor.	
34					
35					

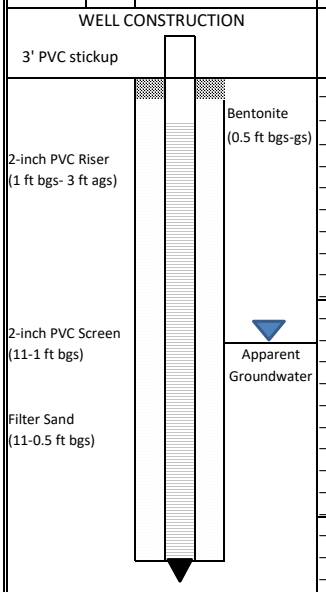
EXCEL FILENAME: BHAI0002_Boring Logs

WILCOX & BARTON, INC.

SOIL BORING LOG
BORING NO: B(MW)-202

PROJECT: BHAI0002	SHEET NO. : 1 of 1
CLIENT: Bargmann Hendrie + Archetype, Inc	JOB NO: BHAI0002
BORING CONTRACTOR: New England Geotech LLC	TOC ELEVATION:

GROUNDWATER MEASUREMENTS:					CASING	SAMPLE	CORE	TUBE	
DATE	TIME	WATER DEPTH	REFERENCE	TYPE	Steel	AL	--	--	DATE STARTED: 10/23/2024
				DIAMETER	3"	--	--	--	DATE FINISHED: 10/23/2024
				WEIGHT	--	--	--	--	DRILLER: Maynor & Cody
				FALL	--	--	--	--	INSPECTOR: E. Daigle
									DRILL RIG: Geoprobe 7822DT



DEPTH (ft)	SAMPLE NO.	SAMPLE RECOVERY (ft)	SAMPLE BLOWS PER 0.5 FOOT	CLASSIFICATION	PID (ppm) RF = 1.0
0				0-0.5 ft bgs: Brown topsoil.	0.3
1				0.5-4 ft bgs: Brown, fine to coarse SAND, trace Gravel, dry.	
2					
3	S-1	3/5			0.3
4					
5				4-5 ft bgs: Tan, fine to coarse SAND, moist.	0.2
6				5-10 ft bgs: Tan, fine to coarse SAND, trace Gravel, moist to 6 ft bgs, wet from 6 to 10 ft bgs.	
7					
8	S-2	4/5			0.2
9					
10					
11				10-14.5 ft bgs: Brown and tan, fine to coarse SAND, trace Gravel, wet.	
12					
13	S-3	4/5			0.6
14					
15				14.5-25 ft bgs: Tan, fine SAND and SILT, wet.	0.8
16				15-20 ft bgs: Brown, coarse SAND, wet.	
17					
18	S-4	2/5			0.3
19					
20					
21				Boring terminated at 20 ft bgs.	
22					
23					
24					
25					
26					
27					
28					
29					
30				AL = acetate liner.	
31				ft (a/b)gs = feet (above/below) ground surface.	
32				PID = Photoionization detector, measuring organic vapors in parts per million (ppm) by volume.	
33				RF = Response factor.	
34					
35					

EXCEL FILENAME: BHAI0002_Boring Logs

WILCOX & BARTON, INC.

SOIL BORING LOG
BORING NO: B(MW)-203

PROJECT: BHAI0002	SHEET NO. : 1 of 1
CLIENT: Bargmann Hendrie + Archetype, Inc	JOB NO: BHAI0002
BORING CONTRACTOR: New England Geotech LLC	TOC ELEVATION:

GROUNDWATER MEASUREMENTS:					CASING	SAMPLE	CORE	TUBE	
DATE	TIME	WATER DEPTH	REFERENCE	TYPE	Steel	AL	--	--	DATE STARTED: 10/23/2024
				DIAMETER	3"	--	--	--	DATE FINISHED: 10/23/2024
				WEIGHT	--	--	--	--	DRILLER: Maynor & Cody
				FALL	--	--	--	--	INSPECTOR: E. Daigle
									DRILL RIG: Geoprobe 7822DT

WELL CONSTRUCTION	DEPTH (ft)	SAMPLE NO.	SAMPLE RECOVERY (ft)	SAMPLE BLOWS PER 0.5 FOOT	CLASSIFICATION	PID (ppm) RF = 1.0
3' PVC stickup; Filter Sand (6 ft bgs-gs); 2-inch PVC Riser (10 ft bgs-3 ft ags)	1–5	S-1	2.5/5		0-5 ft bgs: Tan, fine SAND and GRAVEL, dry.	1.3
Bentonite (8-6 ft bgs)	6–10	S-2	2.5/5		5-10 ft bgs: Tan, fine to coarse SAND, some Gravel, dry to 7.5 ft bgs moist from 7.5 to 10 ft bgs.	0.3
2-inch PVC Screen (20-10 ft bgs)	11–15	S-3	3/5		10-15 ft bgs: Tan and light brown, medium to coarse SAND, some Gravel, apparent iron staining, moist.	0.1
Filter Sand (20-8 ft bgs); Apparent Groundwater	16–20	S-4	2/5		15-20 ft bgs: Gray and tan, fine SAND, moist to 16 ft, wet 16 to 20 ft bgs.	0.1
	21–35				Boring terminated at 20 ft bgs.	

AL = acetate liner.
ft (a/b)gs = feet (above/below) ground surface.
PID = Photoionization detector, measuring organic vapors in parts per million (ppm) by volume.
RF = Response factor.

EXCEL FILENAME: BHAI0002_Boring Logs

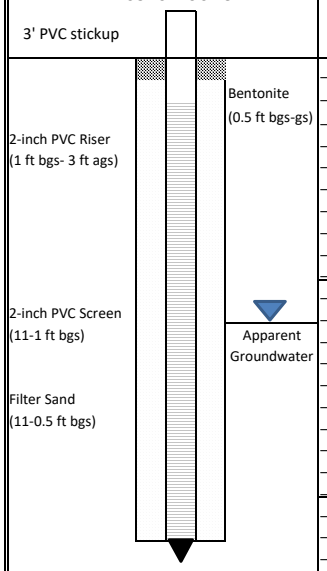
WILCOX & BARTON, INC.

SOIL BORING LOG
BORING NO: B(MW)-204

PROJECT: BHAI0002	SHEET NO. : 1 of 1
CLIENT: Bargmann Hendrie + Archetype, Inc	JOB NO: BHAI0002
BORING CONTRACTOR: New England Geotech LLC	TOC ELEVATION:
GROUNDWATER MEASUREMENTS:	DATE STARTED: 10/23/2024
DATE / TIME / WATER DEPTH / REFERENCE	DATE FINISHED: 10/23/2024
	DRILLER: Maynor & Cody
	INSPECTOR: E. Daigle
	DRILL RIG: Geoprobe 7822DT

	CASING	SAMPLE	CORE	TUBE
TYPE	Steel	AL	--	--
DIAMETER	3"	--	--	--
WEIGHT	--	--	--	--
FALL	--	--	--	--

WELL CONSTRUCTION



DEPTH (ft)	SAMPLE NO.	SAMPLE RECOVERY (ft)	SAMPLE BLOWS PER 0.5 FOOT	CLASSIFICATION	PID (ppm) RF = 1.0
0				0-0.5 ft bgs: Brown topsoil, contains roots.	4.2
1				0.5-2 ft bgs: tan, fine to coarse SAND, contains roots, dry.	1.2
2					
3	S-1	4/5		2-5 ft bgs: Brown, medium to coarse SAND, some Gravel, apparent crushed cobble at 4 ft bgs, dry then moist at 5 ft bgs.	0.4
4					
5					
6				5-9 ft bgs: Brown, fine to coarse SAND, trace Gravel, wet.	0.2
7					
8	S-2	3/5			
9					
10				9-9.5 ft bgs: Gray, fine to coarse SAND, some silt.	0.4
				9.5-10 ft bgs: Gray, crushed asphalt.	0.4
11				10-15 ft bgs: Gray and tan, coarse SAND, wet.	0.6
12					
13	S-3	3/5			
14					
15					
16				Boring terminated at 15 ft bgs.	
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30				AL = acetate liner.	
31				ft (a/b)gs = feet (above/below) ground surface. PID = Photoionization detector, measuring organic vapors in parts per million (ppm) by volume.	
32				RF = Response factor.	
33					
34					
35					

EXCEL FILENAME: BHAI0002_Boring Logs

APPENDIX B

Wilcox & Barton, Inc. Standard Operating Procedures

Wilcox & Barton INC.
CIVIL · ENVIRONMENTAL · GEOTECHNICAL

STANDARD OPERATING PROCEDURE

Title:	PID / Jar-Headspace Screening Protocol for Organic Vapors in Soil			**No:**	**FP-01**
Approved:	A. McLevy	**Original Date:**	10/15/13	**Revised:**	8/26/22

Purpose:

To screen environmental media in the field for organic vapors via analysis of headspace.

Introduction:

A photoionization detector (PID) is a portable field meter used to detect the presence of volatile organic compounds in air. The meter responds to compounds that have ionization potentials equal to or less than the energy of the ionization source (lamp). The meter does not differentiate between compounds, and the meter response varies for different compounds. The meter readings are provided in parts-per-million by volume (ppmv) and are quantitative but non-specific.

A PID may be used to assess contamination in environmental media via measurement of organic vapors that volatilize (evaporate) from the sample into the headspace of the container holding the sample. This screening procedure does not provide a true determination of compound concentration. However, the PID is useful for screening to determine the presence or absence and relative degree of contamination by volatile organic compounds. The PID is calibrated to an isobutylene standard (100 ppmv) and a response factor (RF) may be applied during or after calibration to equate the isobutylene response to the contaminant of interest. The RF used is recorded in the field notes for each screening event. Generally, the RF should be set at 1.0 unless otherwise specified by the project manager for project specific purposes. Additional direction concerning RFs is provided below.

Equipment/Materials:

1. ION Science TIGER equipped with a 10.6 eV lamp, or
2. Mini RAE 2000 or 3000 equipped with a 10.6 eV lamp, or
3. Mini RAE Lite equipped with a 10.6 eV lamp, or
4. Other PID as approved by the Project Manager or Technical Lead.
5. Isobutylene calibration gas, 1-liter Tedlar bag, and connecting tubing and valve
6. Glass jars (250 ml to 500 ml)
7. Aluminum foil
8. Polyethylene Whirl-Pak bags (18 oz)

Procedure:

The following procedure is used to screen media for the presence of organic vapors with a PID using the jar-headspace method:

1. The meter is calibrated to an isobutylene standard using an RF of 1.0 (alternatively the instrument-specific RF for the contaminant of concern can be used prior to screening for project specific purposes if specified by the project manager – see Response Factor Notes below for additional guidance).
2. Calibration is to be performed in a fresh air environment at a temperature similar to the ambient temperature where the unit will be used and close to the sample temperature where possible. A

dedicated 1-liter Tedlar bag is kept with each Wilcox & Barton, Inc. PID meter. Calibration readings are taken from the Tedlar bag after filling with isobutylene. The Tedlar bag should be completely emptied prior to filling, then filled with enough isobutylene to accommodate at least one minute of flow. PID flow rates are generally in the range of 0.2 to 0.5 liters per minute.

3. A clean glass jar is half filled with the sample to be screened. The top of the jar is covered with a sheet of aluminum foil and the cap is screwed on.
4. Alternatively, a Whirl-Pak™ bag (or equivalent) is half filled with the sample to be screened. The bag is closed and flipped over three times and the closure tabs are twisted together to ensure a tight seal.
5. Headspace gasses over the sample are allowed to equilibrate for approximately 10 minutes at ambient air temperature. If ambient temperature is below freezing, headspace development can be performed inside a heated vehicle or space.
6. The jar or bag is vigorously shaken for 15 seconds at the beginning and the end of the equilibration period.
7. Jars: The screw cap is carefully removed and the probe of the PID meter is inserted through the foil. Bags: The bag is punctured with the probe of the PID meter.
8. The maximum meter reading is recorded. Maximum response should occur between 2 and 5 seconds. Erratic meter response may occur at high organic vapor concentrations or conditions of elevated headspace moisture. Erratic meter response should be noted in the field logs.

Response Factor Notes

The table below provides instrument-specific RFs for contaminants commonly encountered at Wilcox & Barton, Inc. project sites. RFs for additional contaminants are available in tables provided by PID manufacturers.

Unit-Specific Response Factors for Common Contaminants (10.6 eV Lamp)			
	Benzene	**Tetrachloroethylene**	**Trichloroethylene**
ION Science TIGER	0.50	0.60	0.60
Mini RAE 3000	0.47	0.57	0.54
Mini RAE Lite	0.47	0.57	0.54
Mini RAE 2000	0.53	0.57	0.54

Example 1. At underground storage tank closures in Massachusetts, screening values must be recorded "as benzene" for comparison to the 72-hour notification requirement [see 310 CMR 40.0313 (2)]. Therefore, the RF must be set to the appropriate value from the table above during calibration. Alternatively, if the instrument is calibrated using isobutylene and the RF is set to 1.0, field readings must be multiplied by the RF in the table above for comparison to the notification requirement. Indicate the RF and show calculations in the field notes. Report adjusted readings "as benzene."

Example 2. At a site where there is no specific contaminant of interest, but screening is being performed as part of a general site investigation, calibrate the instrument using isobutylene and an RF of 1.0. Indicate the RF and the calibration gas concentration in the field notes. Report adjusted readings "as isobutylene."

Example 3. At a chlorinated solvent site where tetrachloroethylene (PCE) is the primary contaminant of concern, set the RF to the appropriate value from the table above during instrument calibration. Alternatively, if the instrument is calibrated using isobutylene and the RF is set to 1.0, field readings must be multiplied by the RF in the table above for comparison to the notification requirement. Indicate the RF and show calculations in the field notes. Report adjusted readings "as PCE."

Additional Considerations:

For soil screening at sites in Massachusetts, MassDEP Interim Remediation Waste Management Policy for Petroleum Contaminated Sites, #WSC-94-400, specifies the use of jars, but the MCP allows alternate procedures when technically justified (see 310 CMR 40.0017). It is the position of Wilcox & Barton, Inc. that the use of a polyethylene bag is an acceptable alternative to a glass jar. This position is supported by EPA (see EPA 510-B-97-0001 Chapter VI - Field Methods for the Analysis of Petroleum Hydrocarbons) and various other states. Field personnel must consult with both the Project Manager and the LSP before using the bag technique at any Massachusetts site. Further, the user should be aware that alternate techniques may affect data usability and that additional justification for use of a polyethylene bag may be requested by MassDEP. For identifying reportable conditions, making risk-based decisions, and soil sampling at 21J Reimbursement in Massachusetts, the jar technique must be used.

Wilcox & Barton INC.
CIVIL · ENVIRONMENTAL · GEOTECHNICAL

STANDARD OPERATING PROCEDURE

Title:	Soil Logging and Description			**No:**	**FP-14**
Approved:	R. Rooks	**Original Date:**	9/7/12	**Revised:**	4/1/17

Purpose:

To ensure that soils observed during field work are classified in a uniform, accurate, and legally-defensible manner using a modified form of the Burmister System of soil classification.

Introduction:

Soil classification is based upon visual observation and simple manual tests that can be conducted in the field. Wilcox & Barton, Inc. uses a modified form of the Burmister System of soil classification to describe soil samples during surface and subsurface investigation activities. The modified system allows for rapid evaluation of soil type in the field to produce a description that is easy to understand and reproduce for both geological and engineering applications. A proper modified Burmister soil description includes the following eight components, listed in this exact order:

1	2	3	4	5	6	7	8
Density or consistency	Apparent color	MAJOR component	Proportional adjective	Minor Component	Other adjective	Apparent moisture	Origin

Observations are recorded in a bound field notebook or on a soil logging template created specifically for this purpose. Soil should be described to a level of detail that matches the use and intent of the data. For example, if one-inch layers within a stratified deposit are repeated, then the entire unit can be described as alternating layers of material. If, however, a small layer is significant in terms of site hydrogeology, such as a potential contaminant pathway or confining layer, it must be described as such on the appropriate scale.

The Burmister classification was developed based on gradational characteristics of cohesionless soils and the plasticity behavior characteristics for cohesive soils. The term "cohesionless" normally applies to materials larger than and including silt-sized particles; however, some silt materials exhibit “apparent cohesion” and may therefore be described as cohesive. For samples in which both cohesionless and cohesive soils are present, the density or consistency descriptor should apply to the major soil component.

Equipment/Materials:

1. Equipment typically used during subsurface investigations that allow for visual inspection of the soil (excavator or backhoe; drill rig; hand auger; shovel).
2. Field log or field data sheet

Procedure:

Soil classification is based upon visual observation and simple manual tests that can be conducted in the field. Wilcox & Barton, Inc. uses a modified form of the Burmister System of soil classification to describe soil samples during surface and subsurface investigation activities. The modified system allows for rapid evaluation of soil type in the field to produce a description that is easy to understand and reproduce for both geological and engineering applications. A proper modified Burmister soil description includes the following eight components, listed in this exact order:

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1. Density or Consistency

The density or consistency of a soil material always refers to its in-place, undisturbed condition. This terminology is a measure of soil density or strength and can be evaluated for both cohesive and cohesionless soils.

Density or consistency is typically based on the number of blows required to advance a split spoon sampler in accordance with ASTM D-1586 specifications for the Standard Penetration Test. The summation of the blows necessary to drive the second and third 6-inch increments of penetration during sample recovery is called the Standard Penetration Number (N-value). The N-value is then compared to the ranges below to determine the density or consistency:

Non-Cohesive Soils	
N-value	Density Description
0-4	Very loose
4-10	Loose
10-30	Medium dense
30-50	Dense
>50	Very dense

Cohesive Soils	
N-value	Density Description
0-2	Very soft
2-4	Soft
4-8	Medium stiff
8-15	Stiff
15-30	Very stiff
>30	Hard

When collecting samples by hand or by Direct Push methods without N-value information, an estimate of density may be made based on the judgment of the individual collecting the sample. A note should be included on the sample log indicating that the recorded density is estimated.

2. Apparent Color

Colors are described using basic colors or combinations of colors such as "dark gray", "gray-brown", "reddish-brown" or "brown and tan". Since color interpretation is subjective, the intent is to note the general identifying color of the major constituent to best designate a particular stratum or soil condition. Color charts may be used if necessary to better judge subtle changes in color. The color should be described shortly after collection while the material is still in its natural field moisture condition because color shade is subject to change during drying.

3. MAJOR Component

The first step in soil type classification is to identify the major constituent of the soil and to estimate, on a visual basis, the relative percent of its composition. The major component is recorded in capital letters. An estimate of the relative percent composition should be made, and should generally be greater than 30 to 50 % in order for the component to be predominant (see also Field References at the end of the document). Identification of the MAJOR (and minor) components is made according to particle size in accordance with the Unified Soil Classification System (USCS) classifications:

Particle Size			
	millimeters	inches	Sieve size
Boulder	>300	>12	--
Cobble	75 to 300	3 to 12	--
Gravel	4.75 to 75	3/16 to 3	No. 4 to No. 3
Coarse SAND	2.0 to 4.75	0.08 to 3/16	No. 10 to No. 4
Medium SAND	0.43 to 2.0	0.02 to 0.08	No. 40 to No. 10
Fine SAND	0.08 to 0.43	0.003 to 0.02	No. 200 to No. 40
SILT and CLAY	<0.075	<0.003	< No. 200

Because boulders, cobbles and some gravel are not recovered in a split spoon, percentages cannot be accurately determined from the standard penetration test. Instead, the possible presence of these constituents may be evaluated based on drilling behavior (*i.e.*, grinding or "jumping" of the drill bit or refusal of the split-spoon) or by observation of soil cuttings and noted on the boring log. The possible presence of these larger particles should be included under the sample description portion of the log. A description of the manner in which large particle presence was identified (*e.g.*, based on drill stem behavior) should be included in the general notes. If gravel, cobbles and boulders are observed during other investigations such as test pit excavation, the proportions may be listed in percentages or, because of potential difficulty in estimating volumetric proportions of larger particles based on visual examination, it is acceptable to simply reference their presence. When boulders are observed, a note should be made regarding their relative size.

For cohesive soil, a second descriptive adjective should be used that further defines the character of the fine particles (those passing a No. 200 sieve). These descriptions are based upon simple field tests conducted on representative samples of the material. The most effective field test is for plasticity, which is the resistance of the soil to crumbling at decreasing water contents. Soil is rolled between the hands into the smallest possible thread until the thread breaks apart. At the

point where the thread breaks, the diameter is noted and compared to the associated descriptions below.

Description	Smallest Rolled Diameter (inches)	Overall Plasticity
SILT	based on texture, not roll diameter	Nonplastic
Clayey SILT	1/4	Slight
SILT & CLAY	1/8	Low
CLAY & SILT	1/16	Medium
Silty CLAY	1/32	High
CLAY	1/64	Very high

4. Proportional Adjective

The minor soil constituent types are identified along with the corresponding percent composition of the sample. The soil type is identified based upon particle size as described above. The proportions of the minor components are described with an adjective based upon the visually estimated percentage (see Field References) of the minor components as presented below:

Percent Composition	Descriptive Adjective
1-10	Trace
10-20	Little
20-35	Some
35-50	And

Minor constituents are recorded following the major constituent in order of decreasing proportion and the first letter in each minor constituent is capitalized. For example:

- A sample consisting of 40% fine sand, 25% medium sand, 20% coarse sand and 15% gravel would be described as **fine SAND, some medium to coarse Sand, little Gravel.**
- A sample consisting of 50% fine sand, 30% medium sand and 20% clayey silt would be described as **fine SAND, some medium Sand, some Clayey Silt.**
- A sample consisting of 60% clay and silt, 30% coarse sand and 10% gravel could be described as **CLAY & SILT, some coarse Sand, trace Gravel.**

5. Minor Component

The minor component is identified in the same manner as the MAJOR component based on particle size.

6. Other Adjective(s) and Descriptions

Following the description of the minor components, other useful information can be reported such as descriptions of soil structure (*e.g.*, angular grains, cemented, blocky), formation characteristics (*e.g.*, stratified, mottled, lenses, clasts), and other characteristics observed (*e.g.,* organic matter, debris, cobbles and boulders). The descriptions should be brief and pertinent to the investigation. Odors and visible staining should be noted. Whenever an odor is noted, a description of the strength and type should be provided (*e.g.*, strong, mild, gasoline-like, diesel-like, sewage, sulfur).

7. Apparent Moisture

Following the soil description, an estimate of the moisture content should be selected based on the following conditions. When saturated soil is noted, the logs should reflect that the apparent depth of the water table has been reached.

Description	Condition
Dry	No apparent moisture, soil can be blown away (no adhesion).
Damp	Color change noted, soil cannot be blown away (some adhesion).
Moist	Moisture apparent, soil can be packed.
Wet	Free moisture apparent, water can be squeezed or shaken from the sample, water observed in the sample container.

8. Soil Origin

As a final, general description of the soil, a note may be added that indicates a known geologic soil formation. This may include referencing the material as Fill, Glacial Till, Glacial Outwash, Peat, Lacustrine Deposit, etc.

In addition to the general geologic description, the USCS symbol may also be required for certain projects. The USCS symbol should be capitalized and correspond to the Modified Burmister description given to the soil. A USCS Classification Chart is provided in the Field References below.

APPENDIX C

Laboratory Analytical Reports

con-test®
A Pace Analytical® Laboratory

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

October 30, 2024

Amelia Midgley
Wilcox & Barton
2 Home Ave
Concord, NH 03301

Project Location: Reading, MA
Client Job Number:
Project Number: BHAI0002
Laboratory Work Order Number: 24J3550

Enclosed are results of analyses for samples as received by the laboratory on October 24, 2024. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Kaitlyn A. Feliciano
Project Manager

Table of Contents

Table of Contents (continued)

con-test®
A Pace Analytical® Laboratory

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

Wilcox & Barton
2 Home Ave
Concord, NH 03301
ATTN: Amelia Midgley

REPORT DATE: 10/30/2024

PURCHASE ORDER NUMBER:

PROJECT NUMBER: BHAI0002

ANALYTICAL SUMMARY

WORK ORDER NUMBER: 24J3550

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

PROJECT LOCATION: Reading, MA

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
HA-1 (0-1)	24J3550-01	Soil		SM 2540G	
				SW-846 6010D	
HA-2 (0-1)	24J3550-02	Soil		SM 2540G	
				SW-846 6010D	
HA-3 (0-1)	24J3550-03	Soil		SM 2540G	
				SW-846 6010D	
HA-4 (0-1)	24J3550-04	Soil		SM 2540G	
				SW-846 6010D	
HA-5 (0-1)	24J3550-05	Soil		SM 2540G	
				SW-846 6010D	
HA-6 (0-1)	24J3550-06	Soil		SM 2540G	
				SW-846 6010D	
HA-7 (0-1)	24J3550-07	Soil		SM 2540G	
				SW-846 6010D	
HA-8 (0-1)	24J3550-08	Soil		SM 2540G	
				SW-846 6010D	
HA-9 (0-1)	24J3550-09	Soil		SM 2540G	
				SW-846 6010D	
HA-10 (0-1)	24J3550-10	Soil		SM 2540G	
				SW-846 6010D	
B(MW)-201 (7-7.5)	24J3550-11	Soil		MADEP EPH rev 2.1	
				SM 2540G	
				SW-846 8260D	
B(MW)-202 (6-6.5)	24J3550-12	Soil		MADEP EPH rev 2.1	
				SM 2540G	
				SW-846 8260D	
B(MW)-203 (15.5-16.5)	24J3550-13	Soil		MADEP EPH rev 2.1	
				SM 2540G	
				SW-846 8260D	
B(MW)-204 (6-6.5)	24J3550-14	Soil		MADEP EPH rev 2.1	
				SM 2540G	
				SW-846 8260D	

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CASE NARRATIVE SUMMARY

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

SW-846 8260D

Qualifications:

V-16

Response factor is less than method specified minimum acceptable value. Reduced precision and accuracy may be associated with reported result.

Analyte & Samples(s) Qualified:

1,4-Dioxane
S112816-CCV1

V-34

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

Analyte & Samples(s) Qualified:

Bromomethane
24J3550-11[B(MW)-201 (7-7.5)], 24J3550-12[B(MW)-202 (6-6.5)], 24J3550-13[B(MW)-203 (15.5-16.5)], 24J3550-14[B(MW)-204 (6-6.5)], B390471-BLK1, B390471-BS1, B390471-BSD1, S112816-CCV1

V-36

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

Analyte & Samples(s) Qualified:

Carbon Disulfide
B390471-BS1, B390471-BSD1, S112816-CCV1

Dichlorodifluoromethane (Freon 12)
B390471-BS1, B390471-BSD1, S112816-CCV1

The results of analyses reported only relate to samples submitted to Con-Test, a Pace Analytical Laboratory, for testing.
I certify that the analyses listed above, unless specifically listed as subcontracted, if any, were performed under my direction according to the approved methodologies listed in this document, and that based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

Lisa A. Worthington
Technical Representative

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Project Location: Reading, MA | Sample Description: | Work Order: 24J3550

Date Received: 10/24/2024

Field Sample #: HA-1 (0-1) | Sampled: 10/23/2024 08:50

Sample ID: 24J3550-01

Sample Matrix: Soil

Metals Analyses (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Lead	44	0.47	mg/Kg dry	1		SW-846 6010D	10/28/24	10/30/24 2:15	MJH

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Project Location: Reading, MA | Sample Description: | Work Order: 24J3550

Date Received: 10/24/2024

Field Sample #: HA-1 (0-1) | Sampled: 10/23/2024 08:50

Sample ID: 24J3550-01

Sample Matrix: Soil

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

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	96.8		% Wt	1		SM 2540G	10/26/24	10/26/24 8:27	MLR

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Project Location: Reading, MA | Sample Description: | Work Order: 24J3550

Date Received: 10/24/2024

Field Sample #: HA-2 (0-1) | Sampled: 10/23/2024 08:58

Sample ID: 24J3550-02

Sample Matrix: Soil

Metals Analyses (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Lead	28	0.53	mg/Kg dry	1		SW-846 6010D	10/28/24	10/30/24 2:19	MJH

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Project Location: Reading, MA | Sample Description: | Work Order: 24J3550

Date Received: 10/24/2024

Field Sample #: HA-2 (0-1) | Sampled: 10/23/2024 08:58

Sample ID: 24J3550-02

Sample Matrix: Soil

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

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	91.9		% Wt	1		SM 2540G	10/26/24	10/26/24 8:27	MLR

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Project Location: Reading, MA | Sample Description: | Work Order: 24J3550

Date Received: 10/24/2024

Field Sample #: HA-3 (0-1) | Sampled: 10/23/2024 09:05

Sample ID: 24J3550-03

Sample Matrix: Soil

Metals Analyses (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Lead	71	0.61	mg/Kg dry	1		SW-846 6010D	10/28/24	10/30/24 2:24	MJH

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Project Location: Reading, MA | Sample Description: | Work Order: 24J3550

Date Received: 10/24/2024

Field Sample #: HA-3 (0-1) | Sampled: 10/23/2024 09:05

Sample ID: 24J3550-03

Sample Matrix: Soil

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

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	78.2		% Wt	1		SM 2540G	10/26/24	10/26/24 8:27	MLR

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Project Location: Reading, MA | Sample Description: | Work Order: 24J3550

Date Received: 10/24/2024

Field Sample #: HA-4 (0-1) | Sampled: 10/23/2024 10:10

Sample ID: 24J3550-04

Sample Matrix: Soil

Metals Analyses (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Lead	30	0.94	mg/Kg dry	1		SW-846 6010D	10/28/24	10/30/24 2:28	MJH

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Project Location: Reading, MA | Sample Description: | Work Order: 24J3550

Date Received: 10/24/2024

Field Sample #: HA-4 (0-1) | Sampled: 10/23/2024 10:10

Sample ID: 24J3550-04

Sample Matrix: Soil

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

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	48.6		% Wt	1		SM 2540G	10/26/24	10/26/24 8:27	MLR

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Project Location: Reading, MA | Sample Description: | Work Order: 24J3550

Date Received: 10/24/2024

Field Sample #: HA-5 (0-1) | Sampled: 10/23/2024 10:43

Sample ID: 24J3550-05

Sample Matrix: Soil

Metals Analyses (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Lead	6.9	0.53	mg/Kg dry	1		SW-846 6010D	10/28/24	10/30/24 2:46	MJH

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Project Location: Reading, MA | Sample Description: | Work Order: 24J3550

Date Received: 10/24/2024

Field Sample #: HA-5 (0-1) | Sampled: 10/23/2024 10:43

Sample ID: 24J3550-05

Sample Matrix: Soil

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

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	92.7		% Wt	1		SM 2540G	10/26/24	10/26/24 8:27	MLR

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Project Location: Reading, MA | Sample Description: | Work Order: 24J3550

Date Received: 10/24/2024

Field Sample #: HA-6 (0-1) | Sampled: 10/23/2024 10:52

Sample ID: 24J3550-06

Sample Matrix: Soil

Metals Analyses (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Lead	34	0.55	mg/Kg dry	1		SW-846 6010D	10/28/24	10/30/24 2:51	MJH

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Project Location: Reading, MA | Sample Description: | Work Order: 24J3550

Date Received: 10/24/2024

Field Sample #: HA-6 (0-1) | Sampled: 10/23/2024 10:52

Sample ID: 24J3550-06

Sample Matrix: Soil

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

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	89.6		% Wt	1		SM 2540G	10/26/24	10/26/24 8:27	MLR

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Project Location: Reading, MA | Sample Description: | Work Order: 24J3550

Date Received: 10/24/2024

Field Sample #: HA-7 (0-1) | Sampled: 10/23/2024 11:39

Sample ID: 24J3550-07

Sample Matrix: Soil

Metals Analyses (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Lead	19	0.53	mg/Kg dry	1		SW-846 6010D	10/28/24	10/30/24 2:56	MJH

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Project Location: Reading, MA | Sample Description: | Work Order: 24J3550

Date Received: 10/24/2024

Field Sample #: HA-7 (0-1) | Sampled: 10/23/2024 11:39

Sample ID: 24J3550-07

Sample Matrix: Soil

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

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	94.7		% Wt	1		SM 2540G	10/26/24	10/26/24 8:27	MLR

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Project Location: Reading, MA | Sample Description: | Work Order: 24J3550

Date Received: 10/24/2024

Field Sample #: HA-8 (0-1) | Sampled: 10/23/2024 12:07

Sample ID: 24J3550-08

Sample Matrix: Soil

Metals Analyses (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Lead	31	0.47	mg/Kg dry	1		SW-846 6010D	10/28/24	10/30/24 3:00	MJH

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Project Location: Reading, MA | Sample Description: | Work Order: 24J3550

Date Received: 10/24/2024

Field Sample #: HA-8 (0-1) | Sampled: 10/23/2024 12:07

Sample ID: 24J3550-08

Sample Matrix: Soil

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

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	87.7		% Wt	1		SM 2540G	10/26/24	10/26/24 8:27	MLR

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Project Location: Reading, MA | Sample Description: | Work Order: 24J3550

Date Received: 10/24/2024

Field Sample #: HA-9 (0-1) | Sampled: 10/23/2024 12:14

Sample ID: 24J3550-09

Sample Matrix: Soil

Metals Analyses (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Lead	18	0.55	mg/Kg dry	1		SW-846 6010D	10/28/24	10/30/24 3:05	MJH

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Project Location: Reading, MA | Sample Description: | Work Order: 24J3550

Date Received: 10/24/2024

Field Sample #: HA-9 (0-1) | Sampled: 10/23/2024 12:14

Sample ID: 24J3550-09

Sample Matrix: Soil

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

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	89.0		% Wt	1		SM 2540G	10/26/24	10/26/24 8:27	MLR

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Project Location: Reading, MA | Sample Description: | Work Order: 24J3550

Date Received: 10/24/2024

Field Sample #: HA-10 (0-1) | Sampled: 10/23/2024 12:19

Sample ID: 24J3550-10

Sample Matrix: Soil

Metals Analyses (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Lead	46	0.51	mg/Kg dry	1		SW-846 6010D	10/28/24	10/30/24 3:10	MJH

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Project Location: Reading, MA | Sample Description: | Work Order: 24J3550

Date Received: 10/24/2024

Field Sample #: HA-10 (0-1) | Sampled: 10/23/2024 12:19

Sample ID: 24J3550-10

Sample Matrix: Soil

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

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	87.5		% Wt	1		SM 2540G	10/26/24	10/26/24 8:27	MLR

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Project Location: Reading, MA | Sample Description: | Work Order: 24J3550

Date Received: 10/24/2024

Field Sample #: B(MW)-201 (7-7.5) | Sampled: 10/23/2024 09:30

Sample ID: 24J3550-11

Sample Matrix: Soil

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acetone	ND	0.098	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 7:26	MFF
tert-Amyl Methyl Ether (TAME)	ND	0.00098	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 7:26	MFF
Benzene	ND	0.0020	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 7:26	MFF
Bromobenzene	ND	0.0020	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 7:26	MFF
Bromochloromethane	ND	0.0020	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 7:26	MFF
Bromodichloromethane	ND	0.0020	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 7:26	MFF
Bromoform	ND	0.0020	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 7:26	MFF
Bromomethane	ND	0.0098	mg/Kg dry	1	V-34, U	SW-846 8260D	10/25/24	10/25/24 7:26	MFF
2-Butanone (MEK)	ND	0.039	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 7:26	MFF
n-Butylbenzene	ND	0.0020	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 7:26	MFF
sec-Butylbenzene	ND	0.0020	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 7:26	MFF
tert-Butylbenzene	ND	0.0020	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 7:26	MFF
tert-Butyl Ethyl Ether (TBEE)	ND	0.00098	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 7:26	MFF
Carbon Disulfide	ND	0.020	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 7:26	MFF
Carbon Tetrachloride	ND	0.0020	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 7:26	MFF
Chlorobenzene	ND	0.0020	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 7:26	MFF
Chlorodibromomethane	ND	0.00098	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 7:26	MFF
Chloroethane	ND	0.020	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 7:26	MFF
Chloroform	ND	0.0039	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 7:26	MFF
Chloromethane	ND	0.0098	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 7:26	MFF
2-Chlorotoluene	ND	0.0020	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 7:26	MFF
4-Chlorotoluene	ND	0.0020	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 7:26	MFF
1,2-Dibromo-3-chloropropane (DBCP)	ND	0.0020	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 7:26	MFF
1,2-Dibromoethane (EDB)	ND	0.00098	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 7:26	MFF
Dibromomethane	ND	0.0020	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 7:26	MFF
1,2-Dichlorobenzene	ND	0.0020	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 7:26	MFF
1,3-Dichlorobenzene	ND	0.0020	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 7:26	MFF
1,4-Dichlorobenzene	ND	0.0020	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 7:26	MFF
Dichlorodifluoromethane (Freon 12)	ND	0.020	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 7:26	MFF
1,1-Dichloroethane	ND	0.0020	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 7:26	MFF
1,2-Dichloroethane	ND	0.0020	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 7:26	MFF
1,1-Dichloroethylene	ND	0.0039	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 7:26	MFF
cis-1,2-Dichloroethylene	ND	0.0020	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 7:26	MFF
trans-1,2-Dichloroethylene	ND	0.0020	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 7:26	MFF
1,2-Dichloropropane	ND	0.0020	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 7:26	MFF
1,3-Dichloropropane	ND	0.00098	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 7:26	MFF
2,2-Dichloropropane	ND	0.0020	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 7:26	MFF
1,1-Dichloropropene	ND	0.0020	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 7:26	MFF
cis-1,3-Dichloropropene	ND	0.00098	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 7:26	MFF
trans-1,3-Dichloropropene	ND	0.00098	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 7:26	MFF
Diethyl Ether	ND	0.020	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 7:26	MFF
Diisopropyl Ether (DIPE)	ND	0.00098	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 7:26	MFF
1,4-Dioxane	ND	0.098	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 7:26	MFF
Ethylbenzene	ND	0.0020	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 7:26	MFF

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Project Location: Reading, MA | Sample Description: | Work Order: 24J3550

Date Received: 10/24/2024

Field Sample #: B(MW)-201 (7-7.5) | Sampled: 10/23/2024 09:30

Sample ID: 24J3550-11

Sample Matrix: Soil

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Hexachlorobutadiene	ND	0.0020	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 7:26	MFF
2-Hexanone (MBK)	ND	0.020	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 7:26	MFF
Isopropylbenzene (Cumene)	ND	0.0020	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 7:26	MFF
p-Isopropyltoluene (p-Cymene)	ND	0.0020	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 7:26	MFF
Methyl tert-Butyl Ether (MTBE)	ND	0.0039	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 7:26	MFF
Methylene Chloride	ND	0.020	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 7:26	MFF
4-Methyl-2-pentanone (MIBK)	ND	0.020	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 7:26	MFF
Naphthalene	ND	0.0039	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 7:26	MFF
n-Propylbenzene	ND	0.0020	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 7:26	MFF
Styrene	ND	0.0020	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 7:26	MFF
1,1,1,2-Tetrachloroethane	ND	0.0020	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 7:26	MFF
1,1,2,2-Tetrachloroethane	ND	0.00098	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 7:26	MFF
Tetrachloroethylene	ND	0.0020	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 7:26	MFF
Tetrahydrofuran	ND	0.0098	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 7:26	MFF
Toluene	ND	0.0020	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 7:26	MFF
1,2,3-Trichlorobenzene	ND	0.0020	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 7:26	MFF
1,2,4-Trichlorobenzene	ND	0.0020	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 7:26	MFF
1,1,1-Trichloroethane	ND	0.0020	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 7:26	MFF
1,1,2-Trichloroethane	ND	0.0020	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 7:26	MFF
Trichloroethylene	ND	0.0020	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 7:26	MFF
Trichlorofluoromethane (Freon 11)	ND	0.0098	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 7:26	MFF
1,2,3-Trichloropropane	ND	0.0020	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 7:26	MFF
1,2,4-Trimethylbenzene	ND	0.0020	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 7:26	MFF
1,3,5-Trimethylbenzene	ND	0.0020	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 7:26	MFF
Vinyl Chloride	ND	0.0098	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 7:26	MFF
m+p Xylene	ND	0.0039	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 7:26	MFF
o-Xylene	ND	0.0020	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 7:26	MFF

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
1,2-Dichloroethane-d4	95.5	70-130		10/25/24 7:26
Toluene-d8	97.1	70-130		10/25/24 7:26
4-Bromofluorobenzene	99.9	70-130		10/25/24 7:26

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Project Location: Reading, MA | Sample Description: | Work Order: 24J3550

Date Received: 10/24/2024

Field Sample #: B(MW)-201 (7-7.5) | Sampled: 10/23/2024 09:30

Sample ID: 24J3550-11

Sample Matrix: Soil

Petroleum Hydrocarbons Analyses - EPH

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
C9-C18 Aliphatics	ND	13	mg/Kg dry	1	U	MADEP EPH rev 2.1	10/25/24	10/28/24 14:47	SNB
C19-C36 Aliphatics	ND	13	mg/Kg dry	1	U	MADEP EPH rev 2.1	10/25/24	10/28/24 14:47	SNB
Unadjusted C11-C22 Aromatics	ND	13	mg/Kg dry	1	U	MADEP EPH rev 2.1	10/25/24	10/28/24 14:47	SNB
C11-C22 Aromatics	ND	13	mg/Kg dry	1	U	MADEP EPH rev 2.1	10/25/24	10/28/24 14:47	SNB
Acenaphthene	ND	0.13	mg/Kg dry	1	U	MADEP EPH rev 2.1	10/25/24	10/28/24 14:47	SNB
Acenaphthylene	ND	0.13	mg/Kg dry	1	U	MADEP EPH rev 2.1	10/25/24	10/28/24 14:47	SNB
Anthracene	ND	0.13	mg/Kg dry	1	U	MADEP EPH rev 2.1	10/25/24	10/28/24 14:47	SNB
Benzo(a)anthracene	ND	0.13	mg/Kg dry	1	U	MADEP EPH rev 2.1	10/25/24	10/28/24 14:47	SNB
Benzo(a)pyrene	ND	0.13	mg/Kg dry	1	U	MADEP EPH rev 2.1	10/25/24	10/28/24 14:47	SNB
Benzo(b)fluoranthene	ND	0.13	mg/Kg dry	1	U	MADEP EPH rev 2.1	10/25/24	10/28/24 14:47	SNB
Benzo(g,h,i)perylene	ND	0.13	mg/Kg dry	1	U	MADEP EPH rev 2.1	10/25/24	10/28/24 14:47	SNB
Benzo(k)fluoranthene	ND	0.13	mg/Kg dry	1	U	MADEP EPH rev 2.1	10/25/24	10/28/24 14:47	SNB
Chrysene	ND	0.13	mg/Kg dry	1	U	MADEP EPH rev 2.1	10/25/24	10/28/24 14:47	SNB
Dibenz(a,h)anthracene	ND	0.13	mg/Kg dry	1	U	MADEP EPH rev 2.1	10/25/24	10/28/24 14:47	SNB
Fluoranthene	ND	0.13	mg/Kg dry	1	U	MADEP EPH rev 2.1	10/25/24	10/28/24 14:47	SNB
Fluorene	ND	0.13	mg/Kg dry	1	U	MADEP EPH rev 2.1	10/25/24	10/28/24 14:47	SNB
Indeno(1,2,3-cd)pyrene	ND	0.13	mg/Kg dry	1	U	MADEP EPH rev 2.1	10/25/24	10/28/24 14:47	SNB
2-Methylnaphthalene	ND	0.13	mg/Kg dry	1	U	MADEP EPH rev 2.1	10/25/24	10/28/24 14:47	SNB
Naphthalene	ND	0.13	mg/Kg dry	1	U	MADEP EPH rev 2.1	10/25/24	10/28/24 14:47	SNB
Phenanthrene	ND	0.13	mg/Kg dry	1	U	MADEP EPH rev 2.1	10/25/24	10/28/24 14:47	SNB
Pyrene	ND	0.13	mg/Kg dry	1	U	MADEP EPH rev 2.1	10/25/24	10/28/24 14:47	SNB

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Chlorooctadecane (COD)	54.2	40-140		10/28/24 14:47
o-Terphenyl (OTP)	52.8	40-140		10/28/24 14:47
2-Bromonaphthalene	99.0	40-140		10/28/24 14:47
2-Fluorobiphenyl	97.5	40-140		10/28/24 14:47

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Project Location: Reading, MA | Sample Description: | Work Order: 24J3550

Date Received: 10/24/2024

Field Sample #: B(MW)-201 (7-7.5) | Sampled: 10/23/2024 09:30

Sample ID: 24J3550-11

Sample Matrix: Soil

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

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	78.8		% Wt	1		SM 2540G	10/26/24	10/26/24 8:27	MLR

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Project Location: Reading, MA | Sample Description: | Work Order: 24J3550

Date Received: 10/24/2024

Field Sample #: B(MW)-202 (6-6.5) | Sampled: 10/23/2024 10:33

Sample ID: 24J3550-12

Sample Matrix: Soil

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acetone	ND	0.069	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 7:51	MFF
tert-Amyl Methyl Ether (TAME)	ND	0.00069	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 7:51	MFF
Benzene	ND	0.0014	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 7:51	MFF
Bromobenzene	ND	0.0014	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 7:51	MFF
Bromochloromethane	ND	0.0014	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 7:51	MFF
Bromodichloromethane	ND	0.0014	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 7:51	MFF
Bromoform	ND	0.0014	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 7:51	MFF
Bromomethane	ND	0.0069	mg/Kg dry	1	V-34, U	SW-846 8260D	10/25/24	10/25/24 7:51	MFF
2-Butanone (MEK)	ND	0.028	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 7:51	MFF
n-Butylbenzene	ND	0.0014	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 7:51	MFF
sec-Butylbenzene	ND	0.0014	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 7:51	MFF
tert-Butylbenzene	ND	0.0014	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 7:51	MFF
tert-Butyl Ethyl Ether (TBEE)	ND	0.00069	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 7:51	MFF
Carbon Disulfide	ND	0.014	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 7:51	MFF
Carbon Tetrachloride	ND	0.0014	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 7:51	MFF
Chlorobenzene	ND	0.0014	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 7:51	MFF
Chlorodibromomethane	ND	0.00069	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 7:51	MFF
Chloroethane	ND	0.014	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 7:51	MFF
Chloroform	ND	0.0028	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 7:51	MFF
Chloromethane	ND	0.0069	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 7:51	MFF
2-Chlorotoluene	ND	0.0014	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 7:51	MFF
4-Chlorotoluene	ND	0.0014	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 7:51	MFF
1,2-Dibromo-3-chloropropane (DBCP)	ND	0.0014	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 7:51	MFF
1,2-Dibromoethane (EDB)	ND	0.00069	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 7:51	MFF
Dibromomethane	ND	0.0014	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 7:51	MFF
1,2-Dichlorobenzene	ND	0.0014	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 7:51	MFF
1,3-Dichlorobenzene	ND	0.0014	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 7:51	MFF
1,4-Dichlorobenzene	ND	0.0014	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 7:51	MFF
Dichlorodifluoromethane (Freon 12)	ND	0.014	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 7:51	MFF
1,1-Dichloroethane	ND	0.0014	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 7:51	MFF
1,2-Dichloroethane	ND	0.0014	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 7:51	MFF
1,1-Dichloroethylene	ND	0.0028	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 7:51	MFF
cis-1,2-Dichloroethylene	ND	0.0014	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 7:51	MFF
trans-1,2-Dichloroethylene	ND	0.0014	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 7:51	MFF
1,2-Dichloropropane	ND	0.0014	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 7:51	MFF
1,3-Dichloropropane	ND	0.00069	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 7:51	MFF
2,2-Dichloropropane	ND	0.0014	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 7:51	MFF
1,1-Dichloropropene	ND	0.0014	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 7:51	MFF
cis-1,3-Dichloropropene	ND	0.00069	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 7:51	MFF
trans-1,3-Dichloropropene	ND	0.00069	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 7:51	MFF
Diethyl Ether	ND	0.014	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 7:51	MFF
Diisopropyl Ether (DIPE)	ND	0.00069	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 7:51	MFF
1,4-Dioxane	ND	0.069	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 7:51	MFF
Ethylbenzene	ND	0.0014	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 7:51	MFF

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Project Location: Reading, MA | Sample Description: | Work Order: 24J3550

Date Received: 10/24/2024

Field Sample #: B(MW)-202 (6-6.5) | Sampled: 10/23/2024 10:33

Sample ID: 24J3550-12

Sample Matrix: Soil

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Hexachlorobutadiene	ND	0.0014	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 7:51	MFF
2-Hexanone (MBK)	ND	0.014	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 7:51	MFF
Isopropylbenzene (Cumene)	ND	0.0014	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 7:51	MFF
p-Isopropyltoluene (p-Cymene)	ND	0.0014	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 7:51	MFF
Methyl tert-Butyl Ether (MTBE)	ND	0.0028	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 7:51	MFF
Methylene Chloride	ND	0.014	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 7:51	MFF
4-Methyl-2-pentanone (MIBK)	ND	0.014	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 7:51	MFF
Naphthalene	ND	0.0028	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 7:51	MFF
n-Propylbenzene	ND	0.0014	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 7:51	MFF
Styrene	ND	0.0014	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 7:51	MFF
1,1,1,2-Tetrachloroethane	ND	0.0014	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 7:51	MFF
1,1,2,2-Tetrachloroethane	ND	0.00069	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 7:51	MFF
Tetrachloroethylene	ND	0.0014	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 7:51	MFF
Tetrahydrofuran	ND	0.0069	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 7:51	MFF
Toluene	ND	0.0014	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 7:51	MFF
1,2,3-Trichlorobenzene	ND	0.0014	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 7:51	MFF
1,2,4-Trichlorobenzene	ND	0.0014	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 7:51	MFF
1,1,1-Trichloroethane	ND	0.0014	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 7:51	MFF
1,1,2-Trichloroethane	ND	0.0014	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 7:51	MFF
Trichloroethylene	ND	0.0014	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 7:51	MFF
Trichlorofluoromethane (Freon 11)	ND	0.0069	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 7:51	MFF
1,2,3-Trichloropropane	ND	0.0014	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 7:51	MFF
1,2,4-Trimethylbenzene	ND	0.0014	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 7:51	MFF
1,3,5-Trimethylbenzene	ND	0.0014	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 7:51	MFF
Vinyl Chloride	ND	0.0069	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 7:51	MFF
m+p Xylene	ND	0.0028	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 7:51	MFF
o-Xylene	ND	0.0014	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 7:51	MFF

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
1,2-Dichloroethane-d4	103	70-130		10/25/24 7:51
Toluene-d8	95.0	70-130		10/25/24 7:51
4-Bromofluorobenzene	102	70-130		10/25/24 7:51

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Project Location: Reading, MA | Sample Description: | Work Order: 24J3550

Date Received: 10/24/2024

Field Sample #: B(MW)-202 (6-6.5) | Sampled: 10/23/2024 10:33

Sample ID: 24J3550-12

Sample Matrix: Soil

Petroleum Hydrocarbons Analyses - EPH

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
C9-C18 Aliphatics	ND	12	mg/Kg dry	1	U	MADEP EPH rev 2.1	10/25/24	10/28/24 15:06	SNB
C19-C36 Aliphatics	ND	12	mg/Kg dry	1	U	MADEP EPH rev 2.1	10/25/24	10/28/24 15:06	SNB
Unadjusted C11-C22 Aromatics	ND	12	mg/Kg dry	1	U	MADEP EPH rev 2.1	10/25/24	10/28/24 15:06	SNB
C11-C22 Aromatics	ND	12	mg/Kg dry	1	U	MADEP EPH rev 2.1	10/25/24	10/28/24 15:06	SNB
Acenaphthene	ND	0.12	mg/Kg dry	1	U	MADEP EPH rev 2.1	10/25/24	10/28/24 15:06	SNB
Acenaphthylene	ND	0.12	mg/Kg dry	1	U	MADEP EPH rev 2.1	10/25/24	10/28/24 15:06	SNB
Anthracene	ND	0.12	mg/Kg dry	1	U	MADEP EPH rev 2.1	10/25/24	10/28/24 15:06	SNB
Benzo(a)anthracene	ND	0.12	mg/Kg dry	1	U	MADEP EPH rev 2.1	10/25/24	10/28/24 15:06	SNB
Benzo(a)pyrene	ND	0.12	mg/Kg dry	1	U	MADEP EPH rev 2.1	10/25/24	10/28/24 15:06	SNB
Benzo(b)fluoranthene	ND	0.12	mg/Kg dry	1	U	MADEP EPH rev 2.1	10/25/24	10/28/24 15:06	SNB
Benzo(g,h,i)perylene	ND	0.12	mg/Kg dry	1	U	MADEP EPH rev 2.1	10/25/24	10/28/24 15:06	SNB
Benzo(k)fluoranthene	ND	0.12	mg/Kg dry	1	U	MADEP EPH rev 2.1	10/25/24	10/28/24 15:06	SNB
Chrysene	ND	0.12	mg/Kg dry	1	U	MADEP EPH rev 2.1	10/25/24	10/28/24 15:06	SNB
Dibenz(a,h)anthracene	ND	0.12	mg/Kg dry	1	U	MADEP EPH rev 2.1	10/25/24	10/28/24 15:06	SNB
Fluoranthene	ND	0.12	mg/Kg dry	1	U	MADEP EPH rev 2.1	10/25/24	10/28/24 15:06	SNB
Fluorene	ND	0.12	mg/Kg dry	1	U	MADEP EPH rev 2.1	10/25/24	10/28/24 15:06	SNB
Indeno(1,2,3-cd)pyrene	ND	0.12	mg/Kg dry	1	U	MADEP EPH rev 2.1	10/25/24	10/28/24 15:06	SNB
2-Methylnaphthalene	ND	0.12	mg/Kg dry	1	U	MADEP EPH rev 2.1	10/25/24	10/28/24 15:06	SNB
Naphthalene	ND	0.12	mg/Kg dry	1	U	MADEP EPH rev 2.1	10/25/24	10/28/24 15:06	SNB
Phenanthrene	ND	0.12	mg/Kg dry	1	U	MADEP EPH rev 2.1	10/25/24	10/28/24 15:06	SNB
Pyrene	ND	0.12	mg/Kg dry	1	U	MADEP EPH rev 2.1	10/25/24	10/28/24 15:06	SNB

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Chlorooctadecane (COD)	64.7	40-140		10/28/24 15:06
o-Terphenyl (OTP)	63.8	40-140		10/28/24 15:06
2-Bromonaphthalene	95.7	40-140		10/28/24 15:06
2-Fluorobiphenyl	95.5	40-140		10/28/24 15:06

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Project Location: Reading, MA | Sample Description: | Work Order: 24J3550

Date Received: 10/24/2024

Field Sample #: B(MW)-202 (6-6.5) | Sampled: 10/23/2024 10:33

Sample ID: 24J3550-12

Sample Matrix: Soil

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

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	84.7		% Wt	1		SM 2540G	10/26/24	10/26/24 8:27	MLR

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Project Location: Reading, MA | Sample Description: | Work Order: 24J3550

Date Received: 10/24/2024

Field Sample #: B(MW)-203 (15.5-16.5) | Sampled: 10/23/2024 11:20

Sample ID: 24J3550-13

Sample Matrix: Soil

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acetone	ND	0.088	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 8:17	MFF
tert-Amyl Methyl Ether (TAME)	ND	0.00088	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 8:17	MFF
Benzene	ND	0.0018	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 8:17	MFF
Bromobenzene	ND	0.0018	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 8:17	MFF
Bromochloromethane	ND	0.0018	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 8:17	MFF
Bromodichloromethane	ND	0.0018	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 8:17	MFF
Bromoform	ND	0.0018	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 8:17	MFF
Bromomethane	ND	0.0088	mg/Kg dry	1	V-34, U	SW-846 8260D	10/25/24	10/25/24 8:17	MFF
2-Butanone (MEK)	ND	0.035	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 8:17	MFF
n-Butylbenzene	ND	0.0018	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 8:17	MFF
sec-Butylbenzene	ND	0.0018	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 8:17	MFF
tert-Butylbenzene	ND	0.0018	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 8:17	MFF
tert-Butyl Ethyl Ether (TBEE)	ND	0.00088	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 8:17	MFF
Carbon Disulfide	ND	0.018	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 8:17	MFF
Carbon Tetrachloride	ND	0.0018	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 8:17	MFF
Chlorobenzene	ND	0.0018	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 8:17	MFF
Chlorodibromomethane	ND	0.00088	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 8:17	MFF
Chloroethane	ND	0.018	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 8:17	MFF
Chloroform	ND	0.0035	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 8:17	MFF
Chloromethane	ND	0.0088	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 8:17	MFF
2-Chlorotoluene	ND	0.0018	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 8:17	MFF
4-Chlorotoluene	ND	0.0018	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 8:17	MFF
1,2-Dibromo-3-chloropropane (DBCP)	ND	0.0018	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 8:17	MFF
1,2-Dibromoethane (EDB)	ND	0.00088	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 8:17	MFF
Dibromomethane	ND	0.0018	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 8:17	MFF
1,2-Dichlorobenzene	ND	0.0018	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 8:17	MFF
1,3-Dichlorobenzene	ND	0.0018	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 8:17	MFF
1,4-Dichlorobenzene	ND	0.0018	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 8:17	MFF
Dichlorodifluoromethane (Freon 12)	ND	0.018	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 8:17	MFF
1,1-Dichloroethane	ND	0.0018	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 8:17	MFF
1,2-Dichloroethane	ND	0.0018	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 8:17	MFF
1,1-Dichloroethylene	ND	0.0035	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 8:17	MFF
cis-1,2-Dichloroethylene	ND	0.0018	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 8:17	MFF
trans-1,2-Dichloroethylene	ND	0.0018	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 8:17	MFF
1,2-Dichloropropane	ND	0.0018	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 8:17	MFF
1,3-Dichloropropane	ND	0.00088	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 8:17	MFF
2,2-Dichloropropane	ND	0.0018	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 8:17	MFF
1,1-Dichloropropene	ND	0.0018	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 8:17	MFF
cis-1,3-Dichloropropene	ND	0.00088	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 8:17	MFF
trans-1,3-Dichloropropene	ND	0.00088	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 8:17	MFF
Diethyl Ether	ND	0.018	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 8:17	MFF
Diisopropyl Ether (DIPE)	ND	0.00088	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 8:17	MFF
1,4-Dioxane	ND	0.088	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 8:17	MFF
Ethylbenzene	ND	0.0018	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 8:17	MFF

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Project Location: Reading, MA | Sample Description: | Work Order: 24J3550

Date Received: 10/24/2024

Field Sample #: B(MW)-203 (15.5-16.5) | Sampled: 10/23/2024 11:20

Sample ID: 24J3550-13

Sample Matrix: Soil

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Hexachlorobutadiene	ND	0.0018	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 8:17	MFF
2-Hexanone (MBK)	ND	0.018	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 8:17	MFF
Isopropylbenzene (Cumene)	ND	0.0018	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 8:17	MFF
p-Isopropyltoluene (p-Cymene)	ND	0.0018	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 8:17	MFF
Methyl tert-Butyl Ether (MTBE)	ND	0.0035	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 8:17	MFF
Methylene Chloride	ND	0.018	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 8:17	MFF
4-Methyl-2-pentanone (MIBK)	ND	0.018	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 8:17	MFF
Naphthalene	ND	0.0035	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 8:17	MFF
n-Propylbenzene	ND	0.0018	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 8:17	MFF
Styrene	ND	0.0018	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 8:17	MFF
1,1,1,2-Tetrachloroethane	ND	0.0018	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 8:17	MFF
1,1,2,2-Tetrachloroethane	ND	0.00088	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 8:17	MFF
Tetrachloroethylene	ND	0.0018	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 8:17	MFF
Tetrahydrofuran	ND	0.0088	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 8:17	MFF
Toluene	ND	0.0018	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 8:17	MFF
1,2,3-Trichlorobenzene	ND	0.0018	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 8:17	MFF
1,2,4-Trichlorobenzene	ND	0.0018	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 8:17	MFF
1,1,1-Trichloroethane	ND	0.0018	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 8:17	MFF
1,1,2-Trichloroethane	ND	0.0018	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 8:17	MFF
Trichloroethylene	ND	0.0018	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 8:17	MFF
Trichlorofluoromethane (Freon 11)	ND	0.0088	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 8:17	MFF
1,2,3-Trichloropropane	ND	0.0018	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 8:17	MFF
1,2,4-Trimethylbenzene	ND	0.0018	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 8:17	MFF
1,3,5-Trimethylbenzene	ND	0.0018	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 8:17	MFF
Vinyl Chloride	ND	0.0088	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 8:17	MFF
m+p Xylene	ND	0.0035	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 8:17	MFF
o-Xylene	ND	0.0018	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 8:17	MFF

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
1,2-Dichloroethane-d4	102	70-130		10/25/24 8:17
Toluene-d8	96.2	70-130		10/25/24 8:17
4-Bromofluorobenzene	102	70-130		10/25/24 8:17

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Project Location: Reading, MA | Sample Description: | Work Order: 24J3550

Date Received: 10/24/2024

Field Sample #: B(MW)-203 (15.5-16.5) | Sampled: 10/23/2024 11:20

Sample ID: 24J3550-13

Sample Matrix: Soil

Petroleum Hydrocarbons Analyses - EPH

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
C9-C18 Aliphatics	ND	12	mg/Kg dry	1	U	MADEP EPH rev 2.1	10/25/24	10/28/24 15:24	SNB
C19-C36 Aliphatics	ND	12	mg/Kg dry	1	U	MADEP EPH rev 2.1	10/25/24	10/28/24 15:24	SNB
Unadjusted C11-C22 Aromatics	ND	12	mg/Kg dry	1	U	MADEP EPH rev 2.1	10/25/24	10/28/24 15:24	SNB
C11-C22 Aromatics	ND	12	mg/Kg dry	1	U	MADEP EPH rev 2.1	10/25/24	10/28/24 15:24	SNB
Acenaphthene	ND	0.12	mg/Kg dry	1	U	MADEP EPH rev 2.1	10/25/24	10/28/24 15:24	SNB
Acenaphthylene	ND	0.12	mg/Kg dry	1	U	MADEP EPH rev 2.1	10/25/24	10/28/24 15:24	SNB
Anthracene	ND	0.12	mg/Kg dry	1	U	MADEP EPH rev 2.1	10/25/24	10/28/24 15:24	SNB
Benzo(a)anthracene	ND	0.12	mg/Kg dry	1	U	MADEP EPH rev 2.1	10/25/24	10/28/24 15:24	SNB
Benzo(a)pyrene	ND	0.12	mg/Kg dry	1	U	MADEP EPH rev 2.1	10/25/24	10/28/24 15:24	SNB
Benzo(b)fluoranthene	ND	0.12	mg/Kg dry	1	U	MADEP EPH rev 2.1	10/25/24	10/28/24 15:24	SNB
Benzo(g,h,i)perylene	ND	0.12	mg/Kg dry	1	U	MADEP EPH rev 2.1	10/25/24	10/28/24 15:24	SNB
Benzo(k)fluoranthene	ND	0.12	mg/Kg dry	1	U	MADEP EPH rev 2.1	10/25/24	10/28/24 15:24	SNB
Chrysene	ND	0.12	mg/Kg dry	1	U	MADEP EPH rev 2.1	10/25/24	10/28/24 15:24	SNB
Dibenz(a,h)anthracene	ND	0.12	mg/Kg dry	1	U	MADEP EPH rev 2.1	10/25/24	10/28/24 15:24	SNB
Fluoranthene	ND	0.12	mg/Kg dry	1	U	MADEP EPH rev 2.1	10/25/24	10/28/24 15:24	SNB
Fluorene	ND	0.12	mg/Kg dry	1	U	MADEP EPH rev 2.1	10/25/24	10/28/24 15:24	SNB
Indeno(1,2,3-cd)pyrene	ND	0.12	mg/Kg dry	1	U	MADEP EPH rev 2.1	10/25/24	10/28/24 15:24	SNB
2-Methylnaphthalene	ND	0.12	mg/Kg dry	1	U	MADEP EPH rev 2.1	10/25/24	10/28/24 15:24	SNB
Naphthalene	ND	0.12	mg/Kg dry	1	U	MADEP EPH rev 2.1	10/25/24	10/28/24 15:24	SNB
Phenanthrene	ND	0.12	mg/Kg dry	1	U	MADEP EPH rev 2.1	10/25/24	10/28/24 15:24	SNB
Pyrene	ND	0.12	mg/Kg dry	1	U	MADEP EPH rev 2.1	10/25/24	10/28/24 15:24	SNB

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Chlorooctadecane (COD)	41.9	40-140		10/28/24 15:24
o-Terphenyl (OTP)	43.0	40-140		10/28/24 15:24
2-Bromonaphthalene	87.1	40-140		10/28/24 15:24
2-Fluorobiphenyl	85.8	40-140		10/28/24 15:24

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Project Location: Reading, MA | Sample Description: | Work Order: 24J3550

Date Received: 10/24/2024

Field Sample #: B(MW)-203 (15.5-16.5) | Sampled: 10/23/2024 11:20

Sample ID: 24J3550-13

Sample Matrix: Soil

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

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	80.9		% Wt	1		SM 2540G	10/26/24	10/26/24 8:27	MLR

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Project Location: Reading, MA | Sample Description: | Work Order: 24J3550

Date Received: 10/24/2024

Field Sample #: B(MW)-204 (6-6.5) | Sampled: 10/23/2024 11:55

Sample ID: 24J3550-14

Sample Matrix: Soil

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acetone	ND	0.076	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 8:43	MFF
tert-Amyl Methyl Ether (TAME)	ND	0.00076	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 8:43	MFF
Benzene	ND	0.0015	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 8:43	MFF
Bromobenzene	ND	0.0015	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 8:43	MFF
Bromochloromethane	ND	0.0015	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 8:43	MFF
Bromodichloromethane	ND	0.0015	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 8:43	MFF
Bromoform	ND	0.0015	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 8:43	MFF
Bromomethane	ND	0.0076	mg/Kg dry	1	V-34, U	SW-846 8260D	10/25/24	10/25/24 8:43	MFF
2-Butanone (MEK)	ND	0.030	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 8:43	MFF
n-Butylbenzene	ND	0.0015	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 8:43	MFF
sec-Butylbenzene	ND	0.0015	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 8:43	MFF
tert-Butylbenzene	ND	0.0015	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 8:43	MFF
tert-Butyl Ethyl Ether (TBEE)	ND	0.00076	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 8:43	MFF
Carbon Disulfide	ND	0.015	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 8:43	MFF
Carbon Tetrachloride	ND	0.0015	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 8:43	MFF
Chlorobenzene	ND	0.0015	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 8:43	MFF
Chlorodibromomethane	ND	0.00076	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 8:43	MFF
Chloroethane	ND	0.015	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 8:43	MFF
Chloroform	ND	0.0030	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 8:43	MFF
Chloromethane	ND	0.0076	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 8:43	MFF
2-Chlorotoluene	ND	0.0015	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 8:43	MFF
4-Chlorotoluene	ND	0.0015	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 8:43	MFF
1,2-Dibromo-3-chloropropane (DBCP)	ND	0.0015	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 8:43	MFF
1,2-Dibromoethane (EDB)	ND	0.00076	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 8:43	MFF
Dibromomethane	ND	0.0015	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 8:43	MFF
1,2-Dichlorobenzene	ND	0.0015	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 8:43	MFF
1,3-Dichlorobenzene	ND	0.0015	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 8:43	MFF
1,4-Dichlorobenzene	ND	0.0015	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 8:43	MFF
Dichlorodifluoromethane (Freon 12)	ND	0.015	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 8:43	MFF
1,1-Dichloroethane	ND	0.0015	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 8:43	MFF
1,2-Dichloroethane	ND	0.0015	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 8:43	MFF
1,1-Dichloroethylene	ND	0.0030	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 8:43	MFF
cis-1,2-Dichloroethylene	ND	0.0015	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 8:43	MFF
trans-1,2-Dichloroethylene	ND	0.0015	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 8:43	MFF
1,2-Dichloropropane	ND	0.0015	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 8:43	MFF
1,3-Dichloropropane	ND	0.00076	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 8:43	MFF
2,2-Dichloropropane	ND	0.0015	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 8:43	MFF
1,1-Dichloropropene	ND	0.0015	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 8:43	MFF
cis-1,3-Dichloropropene	ND	0.00076	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 8:43	MFF
trans-1,3-Dichloropropene	ND	0.00076	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 8:43	MFF
Diethyl Ether	ND	0.015	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 8:43	MFF
Diisopropyl Ether (DIPE)	ND	0.00076	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 8:43	MFF
1,4-Dioxane	ND	0.076	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 8:43	MFF
Ethylbenzene	ND	0.0015	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 8:43	MFF

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Project Location: Reading, MA | Sample Description: | Work Order: 24J3550

Date Received: 10/24/2024

Field Sample #: B(MW)-204 (6-6.5) | Sampled: 10/23/2024 11:55

Sample ID: 24J3550-14

Sample Matrix: Soil

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Hexachlorobutadiene	ND	0.0015	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 8:43	MFF
2-Hexanone (MBK)	ND	0.015	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 8:43	MFF
Isopropylbenzene (Cumene)	ND	0.0015	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 8:43	MFF
p-Isopropyltoluene (p-Cymene)	ND	0.0015	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 8:43	MFF
Methyl tert-Butyl Ether (MTBE)	ND	0.0030	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 8:43	MFF
Methylene Chloride	ND	0.015	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 8:43	MFF
4-Methyl-2-pentanone (MIBK)	ND	0.015	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 8:43	MFF
Naphthalene	ND	0.0030	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 8:43	MFF
n-Propylbenzene	ND	0.0015	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 8:43	MFF
Styrene	ND	0.0015	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 8:43	MFF
1,1,1,2-Tetrachloroethane	ND	0.0015	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 8:43	MFF
1,1,2,2-Tetrachloroethane	ND	0.00076	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 8:43	MFF
Tetrachloroethylene	ND	0.0015	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 8:43	MFF
Tetrahydrofuran	ND	0.0076	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 8:43	MFF
Toluene	ND	0.0015	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 8:43	MFF
1,2,3-Trichlorobenzene	ND	0.0015	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 8:43	MFF
1,2,4-Trichlorobenzene	ND	0.0015	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 8:43	MFF
1,1,1-Trichloroethane	ND	0.0015	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 8:43	MFF
1,1,2-Trichloroethane	ND	0.0015	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 8:43	MFF
Trichloroethylene	ND	0.0015	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 8:43	MFF
Trichlorofluoromethane (Freon 11)	ND	0.0076	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 8:43	MFF
1,2,3-Trichloropropane	ND	0.0015	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 8:43	MFF
1,2,4-Trimethylbenzene	ND	0.0015	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 8:43	MFF
1,3,5-Trimethylbenzene	ND	0.0015	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 8:43	MFF
Vinyl Chloride	ND	0.0076	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 8:43	MFF
m+p Xylene	ND	0.0030	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 8:43	MFF
o-Xylene	ND	0.0015	mg/Kg dry	1	U	SW-846 8260D	10/25/24	10/25/24 8:43	MFF

Surrogates	% Recovery	Recovery Limits	Flag/Qual		
1,2-Dichloroethane-d4	105	70-130		10/25/24	8:43
Toluene-d8	97.6	70-130		10/25/24	8:43
4-Bromofluorobenzene	101	70-130		10/25/24	8:43

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Project Location: Reading, MA | Sample Description: | Work Order: 24J3550

Date Received: 10/24/2024

Field Sample #: B(MW)-204 (6-6.5) | Sampled: 10/23/2024 11:55

Sample ID: 24J3550-14

Sample Matrix: Soil

Petroleum Hydrocarbons Analyses - EPH

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
C9-C18 Aliphatics	ND	11	mg/Kg dry	1	U	MADEP EPH rev 2.1	10/25/24	10/28/24 15:43	SNB
C19-C36 Aliphatics	ND	11	mg/Kg dry	1	U	MADEP EPH rev 2.1	10/25/24	10/28/24 15:43	SNB
Unadjusted C11-C22 Aromatics	ND	11	mg/Kg dry	1	U	MADEP EPH rev 2.1	10/25/24	10/28/24 15:43	SNB
C11-C22 Aromatics	ND	11	mg/Kg dry	1	U	MADEP EPH rev 2.1	10/25/24	10/28/24 15:43	SNB
Acenaphthene	ND	0.11	mg/Kg dry	1	U	MADEP EPH rev 2.1	10/25/24	10/28/24 15:43	SNB
Acenaphthylene	ND	0.11	mg/Kg dry	1	U	MADEP EPH rev 2.1	10/25/24	10/28/24 15:43	SNB
Anthracene	ND	0.11	mg/Kg dry	1	U	MADEP EPH rev 2.1	10/25/24	10/28/24 15:43	SNB
Benzo(a)anthracene	ND	0.11	mg/Kg dry	1	U	MADEP EPH rev 2.1	10/25/24	10/28/24 15:43	SNB
Benzo(a)pyrene	ND	0.11	mg/Kg dry	1	U	MADEP EPH rev 2.1	10/25/24	10/28/24 15:43	SNB
Benzo(b)fluoranthene	ND	0.11	mg/Kg dry	1	U	MADEP EPH rev 2.1	10/25/24	10/28/24 15:43	SNB
Benzo(g,h,i)perylene	ND	0.11	mg/Kg dry	1	U	MADEP EPH rev 2.1	10/25/24	10/28/24 15:43	SNB
Benzo(k)fluoranthene	ND	0.11	mg/Kg dry	1	U	MADEP EPH rev 2.1	10/25/24	10/28/24 15:43	SNB
Chrysene	ND	0.11	mg/Kg dry	1	U	MADEP EPH rev 2.1	10/25/24	10/28/24 15:43	SNB
Dibenz(a,h)anthracene	ND	0.11	mg/Kg dry	1	U	MADEP EPH rev 2.1	10/25/24	10/28/24 15:43	SNB
Fluoranthene	ND	0.11	mg/Kg dry	1	U	MADEP EPH rev 2.1	10/25/24	10/28/24 15:43	SNB
Fluorene	ND	0.11	mg/Kg dry	1	U	MADEP EPH rev 2.1	10/25/24	10/28/24 15:43	SNB
Indeno(1,2,3-cd)pyrene	ND	0.11	mg/Kg dry	1	U	MADEP EPH rev 2.1	10/25/24	10/28/24 15:43	SNB
2-Methylnaphthalene	ND	0.11	mg/Kg dry	1	U	MADEP EPH rev 2.1	10/25/24	10/28/24 15:43	SNB
Naphthalene	ND	0.11	mg/Kg dry	1	U	MADEP EPH rev 2.1	10/25/24	10/28/24 15:43	SNB
Phenanthrene	ND	0.11	mg/Kg dry	1	U	MADEP EPH rev 2.1	10/25/24	10/28/24 15:43	SNB
Pyrene	ND	0.11	mg/Kg dry	1	U	MADEP EPH rev 2.1	10/25/24	10/28/24 15:43	SNB

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Chlorooctadecane (COD)	62.1	40-140		10/28/24 15:43
o-Terphenyl (OTP)	60.6	40-140		10/28/24 15:43
2-Bromonaphthalene	84.1	40-140		10/28/24 15:43
2-Fluorobiphenyl	83.4	40-140		10/28/24 15:43

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Project Location: Reading, MA | Sample Description: | Work Order: 24J3550

Date Received: 10/24/2024

Field Sample #: B(MW)-204 (6-6.5) | Sampled: 10/23/2024 11:55

Sample ID: 24J3550-14

Sample Matrix: Soil

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

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	87.0		% Wt	1		SM 2540G	10/26/24	10/26/24 8:27	MLR

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Sample Extraction Data

Prep Method:SW-846 3510C **Analytical Method:MADEP EPH rev 2.1**

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
24J3550-11 [B(MW)-201 (7-7.5)]	B390464	20.0	2.00	10/25/24
24J3550-12 [B(MW)-202 (6-6.5)]	B390464	20.0	2.00	10/25/24
24J3550-13 [B(MW)-203 (15.5-16.5)]	B390464	20.0	2.00	10/25/24
24J3550-14 [B(MW)-204 (6-6.5)]	B390464	20.0	2.00	10/25/24

Prep Method:% Solids **Analytical Method:SM 2540G**

Lab Number [Field ID]	Batch	Date
24J3550-01 [HA-1 (0-1)]	B390573	10/26/24
24J3550-02 [HA-2 (0-1)]	B390573	10/26/24
24J3550-03 [HA-3 (0-1)]	B390573	10/26/24
24J3550-04 [HA-4 (0-1)]	B390573	10/26/24
24J3550-05 [HA-5 (0-1)]	B390573	10/26/24
24J3550-06 [HA-6 (0-1)]	B390573	10/26/24
24J3550-07 [HA-7 (0-1)]	B390573	10/26/24
24J3550-08 [HA-8 (0-1)]	B390573	10/26/24
24J3550-09 [HA-9 (0-1)]	B390573	10/26/24
24J3550-10 [HA-10 (0-1)]	B390573	10/26/24
24J3550-11 [B(MW)-201 (7-7.5)]	B390573	10/26/24
24J3550-12 [B(MW)-202 (6-6.5)]	B390573	10/26/24
24J3550-13 [B(MW)-203 (15.5-16.5)]	B390573	10/26/24
24J3550-14 [B(MW)-204 (6-6.5)]	B390573	10/26/24

Prep Method:SW-846 3050B **Analytical Method:SW-846 6010D**

Lab Number [Field ID]	Batch	Initial [g]	Final [mL]	Date
24J3550-01 [HA-1 (0-1)]	B390661	1.66	50.0	10/28/24
24J3550-02 [HA-2 (0-1)]	B390661	1.54	50.0	10/28/24
24J3550-03 [HA-3 (0-1)]	B390661	1.56	50.0	10/28/24
24J3550-04 [HA-4 (0-1)]	B390661	1.64	50.0	10/28/24
24J3550-05 [HA-5 (0-1)]	B390661	1.54	50.0	10/28/24
24J3550-06 [HA-6 (0-1)]	B390661	1.52	50.0	10/28/24
24J3550-07 [HA-7 (0-1)]	B390661	1.50	50.0	10/28/24
24J3550-08 [HA-8 (0-1)]	B390661	1.83	50.0	10/28/24
24J3550-09 [HA-9 (0-1)]	B390661	1.54	50.0	10/28/24
24J3550-10 [HA-10 (0-1)]	B390661	1.67	50.0	10/28/24

Prep Method:SW-846 5035 **Analytical Method:SW-846 8260D**

Lab Number [Field ID]	Batch	Initial [g]	Final [mL]	Date
24J3550-11 [B(MW)-201 (7-7.5)]	B390471	6.51	10.0	10/25/24
24J3550-12 [B(MW)-202 (6-6.5)]	B390471	8.57	10.0	10/25/24
24J3550-13 [B(MW)-203 (15.5-16.5)]	B390471	7.06	10.0	10/25/24
24J3550-14 [B(MW)-204 (6-6.5)]	B390471	7.56	10.0	10/25/24

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QUALITY CONTROL

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B390471 - SW-846 5035										
Blank (B390471-BLK1)				Prepared & Analyzed: 10/25/24						
Acetone	ND	0.10	mg/Kg wet							U
tert-Amyl Methyl Ether (TAME)	ND	0.0010	mg/Kg wet							U
Benzene	ND	0.0020	mg/Kg wet							U
Bromobenzene	ND	0.0020	mg/Kg wet							U
Bromochloromethane	ND	0.0020	mg/Kg wet							U
Bromodichloromethane	ND	0.0020	mg/Kg wet							U
Bromoform	ND	0.0020	mg/Kg wet							U
Bromomethane	ND	0.010	mg/Kg wet							V-34, U
2-Butanone (MEK)	ND	0.040	mg/Kg wet							U
n-Butylbenzene	ND	0.0020	mg/Kg wet							U
sec-Butylbenzene	ND	0.0020	mg/Kg wet							U
tert-Butylbenzene	ND	0.0020	mg/Kg wet							U
tert-Butyl Ethyl Ether (TBEE)	ND	0.0010	mg/Kg wet							U
Carbon Disulfide	ND	0.020	mg/Kg wet							U
Carbon Tetrachloride	ND	0.0020	mg/Kg wet							U
Chlorobenzene	ND	0.0020	mg/Kg wet							U
Chlorodibromomethane	ND	0.0010	mg/Kg wet							U
Chloroethane	ND	0.020	mg/Kg wet							U
Chloroform	ND	0.0040	mg/Kg wet							U
Chloromethane	ND	0.010	mg/Kg wet							U
2-Chlorotoluene	ND	0.0020	mg/Kg wet							U
4-Chlorotoluene	ND	0.0020	mg/Kg wet							U
1,2-Dibromo-3-chloropropane (DBCP)	ND	0.0020	mg/Kg wet							U
1,2-Dibromoethane (EDB)	ND	0.0010	mg/Kg wet							U
Dibromomethane	ND	0.0020	mg/Kg wet							U
1,2-Dichlorobenzene	ND	0.0020	mg/Kg wet							U
1,3-Dichlorobenzene	ND	0.0020	mg/Kg wet							U
1,4-Dichlorobenzene	ND	0.0020	mg/Kg wet							U
Dichlorodifluoromethane (Freon 12)	ND	0.020	mg/Kg wet							U
1,1-Dichloroethane	ND	0.0020	mg/Kg wet							U
1,2-Dichloroethane	ND	0.0020	mg/Kg wet							U
1,1-Dichloroethylene	ND	0.0040	mg/Kg wet							U
cis-1,2-Dichloroethylene	ND	0.0020	mg/Kg wet							U
trans-1,2-Dichloroethylene	ND	0.0020	mg/Kg wet							U
1,2-Dichloropropane	ND	0.0020	mg/Kg wet							U
1,3-Dichloropropane	ND	0.0010	mg/Kg wet							U
2,2-Dichloropropane	ND	0.0020	mg/Kg wet							U
1,1-Dichloropropene	ND	0.0020	mg/Kg wet							U
cis-1,3-Dichloropropene	ND	0.0010	mg/Kg wet							U
trans-1,3-Dichloropropene	ND	0.0010	mg/Kg wet							U
Diethyl Ether	ND	0.020	mg/Kg wet							U
Diisopropyl Ether (DIPE)	ND	0.0010	mg/Kg wet							U
1,4-Dioxane	ND	0.10	mg/Kg wet							U
Ethylbenzene	ND	0.0020	mg/Kg wet							U
Hexachlorobutadiene	ND	0.0020	mg/Kg wet							U
2-Hexanone (MBK)	ND	0.020	mg/Kg wet							U
Isopropylbenzene (Cumene)	ND	0.0020	mg/Kg wet							U
p-Isopropyltoluene (p-Cymene)	ND	0.0020	mg/Kg wet							U
Methyl tert-Butyl Ether (MTBE)	ND	0.0040	mg/Kg wet							U
Methylene Chloride	ND	0.020	mg/Kg wet							U
4-Methyl-2-pentanone (MIBK)	ND	0.020	mg/Kg wet							U
Naphthalene	ND	0.0040	mg/Kg wet							U

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QUALITY CONTROL

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes	
Batch B390471 - SW-846 5035											
Blank (B390471-BLK1)				Prepared & Analyzed: 10/25/24							
n-Propylbenzene	ND	0.0020	mg/Kg wet							U	
Styrene	ND	0.0020	mg/Kg wet							U	
1,1,1,2-Tetrachloroethane	ND	0.0020	mg/Kg wet							U	
1,1,2,2-Tetrachloroethane	ND	0.0010	mg/Kg wet							U	
Tetrachloroethylene	ND	0.0020	mg/Kg wet							U	
Tetrahydrofuran	ND	0.010	mg/Kg wet							U	
Toluene	ND	0.0020	mg/Kg wet							U	
1,2,3-Trichlorobenzene	ND	0.0020	mg/Kg wet							U	
1,2,4-Trichlorobenzene	ND	0.0020	mg/Kg wet							U	
1,1,1-Trichloroethane	ND	0.0020	mg/Kg wet							U	
1,1,2-Trichloroethane	ND	0.0020	mg/Kg wet							U	
Trichloroethylene	ND	0.0020	mg/Kg wet							U	
Trichlorofluoromethane (Freon 11)	ND	0.010	mg/Kg wet							U	
1,2,3-Trichloropropane	ND	0.0020	mg/Kg wet							U	
1,2,4-Trimethylbenzene	ND	0.0020	mg/Kg wet							U	
1,3,5-Trimethylbenzene	ND	0.0020	mg/Kg wet							U	
Vinyl Chloride	ND	0.010	mg/Kg wet							U	
m+p Xylene	ND	0.0040	mg/Kg wet							U	
o-Xylene	ND	0.0020	mg/Kg wet							U	
Surrogate: 1,2-Dichloroethane-d4	*0.0512*		mg/Kg wet	0.05000		102	70-130				
Surrogate: Toluene-d8	*0.0494*		mg/Kg wet	0.05000		98.8	70-130				
Surrogate: 4-Bromofluorobenzene	*0.0499*		mg/Kg wet	0.05000		99.8	70-130				
LCS (B390471-BS1)				Prepared & Analyzed: 10/25/24							
Acetone	0.191	0.10	mg/Kg wet	0.2000		95.4	40-160				†
tert-Amyl Methyl Ether (TAME)	0.0219	0.0010	mg/Kg wet	0.02000		110	70-130				
Benzene	0.0193	0.0020	mg/Kg wet	0.02000		96.6	70-130				
Bromobenzene	0.0188	0.0020	mg/Kg wet	0.02000		93.8	70-130				
Bromochloromethane	0.0191	0.0020	mg/Kg wet	0.02000		95.3	70-130				
Bromodichloromethane	0.0191	0.0020	mg/Kg wet	0.02000		95.5	70-130				
Bromoform	0.0201	0.0020	mg/Kg wet	0.02000		100	70-130				
Bromomethane	0.0175	0.010	mg/Kg wet	0.02000		87.3	40-160			V-34	†
2-Butanone (MEK)	0.194	0.040	mg/Kg wet	0.2000		97.1	40-160				†
n-Butylbenzene	0.0175	0.0020	mg/Kg wet	0.02000		87.4	70-130				
sec-Butylbenzene	0.0185	0.0020	mg/Kg wet	0.02000		92.5	70-130				
tert-Butylbenzene	0.0187	0.0020	mg/Kg wet	0.02000		93.7	70-130				
tert-Butyl Ethyl Ether (TBEE)	0.0201	0.0010	mg/Kg wet	0.02000		101	70-130				
Carbon Disulfide	0.187	0.020	mg/Kg wet	0.2000		93.5	70-130			V-36	
Carbon Tetrachloride	0.0181	0.0020	mg/Kg wet	0.02000		90.6	70-130				
Chlorobenzene	0.0190	0.0020	mg/Kg wet	0.02000		95.2	70-130				
Chlorodibromomethane	0.0183	0.0010	mg/Kg wet	0.02000		91.5	70-130				
Chloroethane	0.0199	0.020	mg/Kg wet	0.02000		99.3	70-130			U	
Chloroform	0.0192	0.0040	mg/Kg wet	0.02000		96.1	70-130				
Chloromethane	0.0171	0.010	mg/Kg wet	0.02000		85.4	40-160				†
2-Chlorotoluene	0.0194	0.0020	mg/Kg wet	0.02000		97.2	70-130				
4-Chlorotoluene	0.0188	0.0020	mg/Kg wet	0.02000		94.0	70-130				
1,2-Dibromo-3-chloropropane (DBCP)	0.0176	0.0020	mg/Kg wet	0.02000		87.8	70-130				
1,2-Dibromoethane (EDB)	0.0199	0.0010	mg/Kg wet	0.02000		99.6	70-130				
Dibromomethane	0.0195	0.0020	mg/Kg wet	0.02000		97.5	70-130				
1,2-Dichlorobenzene	0.0194	0.0020	mg/Kg wet	0.02000		96.8	70-130				
1,3-Dichlorobenzene	0.0187	0.0020	mg/Kg wet	0.02000		93.6	70-130				
1,4-Dichlorobenzene	0.0182	0.0020	mg/Kg wet	0.02000		91.2	70-130				

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QUALITY CONTROL

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes	
Batch B390471 - SW-846 5035											
LCS (B390471-BS1)				Prepared & Analyzed: 10/25/24							
Dichlorodifluoromethane (Freon 12)	0.0207	0.020	mg/Kg wet	0.02000		103	40-160			V-36	†
1,1-Dichloroethane	0.0187	0.0020	mg/Kg wet	0.02000		93.5	70-130				
1,2-Dichloroethane	0.0188	0.0020	mg/Kg wet	0.02000		94.2	70-130				
1,1-Dichloroethylene	0.0175	0.0040	mg/Kg wet	0.02000		87.7	70-130				
cis-1,2-Dichloroethylene	0.0183	0.0020	mg/Kg wet	0.02000		91.7	70-130				
trans-1,2-Dichloroethylene	0.0187	0.0020	mg/Kg wet	0.02000		93.3	70-130				
1,2-Dichloropropane	0.0180	0.0020	mg/Kg wet	0.02000		90.0	70-130				
1,3-Dichloropropane	0.0199	0.0010	mg/Kg wet	0.02000		99.7	70-130				
2,2-Dichloropropane	0.0185	0.0020	mg/Kg wet	0.02000		92.7	70-130				
1,1-Dichloropropene	0.0195	0.0020	mg/Kg wet	0.02000		97.5	70-130				
cis-1,3-Dichloropropene	0.0188	0.0010	mg/Kg wet	0.02000		94.0	70-130				
trans-1,3-Dichloropropene	0.0185	0.0010	mg/Kg wet	0.02000		92.4	70-130				
Diethyl Ether	0.0180	0.020	mg/Kg wet	0.02000		90.0	70-130			U	
Diisopropyl Ether (DIPE)	0.0192	0.0010	mg/Kg wet	0.02000		96.1	70-130				
1,4-Dioxane	0.238	0.10	mg/Kg wet	0.2000		119	40-160				†
Ethylbenzene	0.0193	0.0020	mg/Kg wet	0.02000		96.4	70-130				
Hexachlorobutadiene	0.0174	0.0020	mg/Kg wet	0.02000		87.2	70-130				
2-Hexanone (MBK)	0.186	0.020	mg/Kg wet	0.2000		93.0	40-160				†
Isopropylbenzene (Cumene)	0.0192	0.0020	mg/Kg wet	0.02000		96.0	70-130				
p-Isopropyltoluene (p-Cymene)	0.0182	0.0020	mg/Kg wet	0.02000		91.0	70-130				
Methyl tert-Butyl Ether (MTBE)	0.0211	0.0040	mg/Kg wet	0.02000		106	70-130				
Methylene Chloride	0.0174	0.020	mg/Kg wet	0.02000		87.0	70-130			U	
4-Methyl-2-pentanone (MIBK)	0.195	0.020	mg/Kg wet	0.2000		97.3	40-160				†
Naphthalene	0.0195	0.0040	mg/Kg wet	0.02000		97.4	70-130				
n-Propylbenzene	0.0195	0.0020	mg/Kg wet	0.02000		97.4	70-130				
Styrene	0.0194	0.0020	mg/Kg wet	0.02000		96.8	70-130				
1,1,1,2-Tetrachloroethane	0.0193	0.0020	mg/Kg wet	0.02000		96.7	70-130				
1,1,2,2-Tetrachloroethane	0.0211	0.0010	mg/Kg wet	0.02000		106	70-130				
Tetrachloroethylene	0.0181	0.0020	mg/Kg wet	0.02000		90.5	70-130				
Tetrahydrofuran	0.0208	0.010	mg/Kg wet	0.02000		104	70-130				
Toluene	0.0173	0.0020	mg/Kg wet	0.02000		86.4	70-130				
1,2,3-Trichlorobenzene	0.0185	0.0020	mg/Kg wet	0.02000		92.7	70-130				
1,2,4-Trichlorobenzene	0.0175	0.0020	mg/Kg wet	0.02000		87.6	70-130				
1,1,1-Trichloroethane	0.0187	0.0020	mg/Kg wet	0.02000		93.5	70-130				
1,1,2-Trichloroethane	0.0187	0.0020	mg/Kg wet	0.02000		93.7	70-130				
Trichloroethylene	0.0180	0.0020	mg/Kg wet	0.02000		90.0	70-130				
Trichlorofluoromethane (Freon 11)	0.0186	0.010	mg/Kg wet	0.02000		92.9	70-130				
1,2,3-Trichloropropane	0.0209	0.0020	mg/Kg wet	0.02000		104	70-130				
1,2,4-Trimethylbenzene	0.0182	0.0020	mg/Kg wet	0.02000		90.9	70-130				
1,3,5-Trimethylbenzene	0.0190	0.0020	mg/Kg wet	0.02000		95.0	70-130				
Vinyl Chloride	0.0187	0.010	mg/Kg wet	0.02000		93.3	70-130				
m+p Xylene	0.0380	0.0040	mg/Kg wet	0.04000		95.1	70-130				
o-Xylene	0.0191	0.0020	mg/Kg wet	0.02000		95.6	70-130				
Surrogate: 1,2-Dichloroethane-d4	*0.0495*		mg/Kg wet	0.05000		99.0	70-130				
Surrogate: Toluene-d8	*0.0495*		mg/Kg wet	0.05000		99.1	70-130				
Surrogate: 4-Bromofluorobenzene	*0.0494*		mg/Kg wet	0.05000		98.8	70-130				

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QUALITY CONTROL

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes	
Batch B390471 - SW-846 5035											
LCS Dup (B390471-BSD1)				Prepared & Analyzed: 10/25/24							
Acetone	0.186	0.10	mg/Kg wet	0.2000		93.0	40-160	2.45	20		†
tert-Amyl Methyl Ether (TAME)	0.0214	0.0010	mg/Kg wet	0.02000		107	70-130	2.22	20		
Benzene	0.0193	0.0020	mg/Kg wet	0.02000		96.5	70-130	0.104	20		
Bromobenzene	0.0187	0.0020	mg/Kg wet	0.02000		93.4	70-130	0.427	20		
Bromochloromethane	0.0189	0.0020	mg/Kg wet	0.02000		94.3	70-130	1.05	20		
Bromodichloromethane	0.0186	0.0020	mg/Kg wet	0.02000		93.2	70-130	2.44	20		
Bromoform	0.0192	0.0020	mg/Kg wet	0.02000		95.9	70-130	4.49	20		
Bromomethane	0.0175	0.010	mg/Kg wet	0.02000		87.5	40-160	0.229	20	V-34	†
2-Butanone (MEK)	0.178	0.040	mg/Kg wet	0.2000		89.2	40-160	8.46	20		†
n-Butylbenzene	0.0170	0.0020	mg/Kg wet	0.02000		85.2	70-130	2.55	20		
sec-Butylbenzene	0.0181	0.0020	mg/Kg wet	0.02000		90.5	70-130	2.19	20		
tert-Butylbenzene	0.0189	0.0020	mg/Kg wet	0.02000		94.3	70-130	0.638	20		
tert-Butyl Ethyl Ether (TBEE)	0.0198	0.0010	mg/Kg wet	0.02000		98.9	70-130	1.80	20		
Carbon Disulfide	0.181	0.020	mg/Kg wet	0.2000		90.5	70-130	3.23	20	V-36	
Carbon Tetrachloride	0.0184	0.0020	mg/Kg wet	0.02000		91.9	70-130	1.42	20		
Chlorobenzene	0.0190	0.0020	mg/Kg wet	0.02000		94.9	70-130	0.316	20		
Chlorodibromomethane	0.0181	0.0010	mg/Kg wet	0.02000		90.5	70-130	1.10	20		
Chloroethane	0.0196	0.020	mg/Kg wet	0.02000		98.2	70-130	1.11	20	U	
Chloroform	0.0195	0.0040	mg/Kg wet	0.02000		97.3	70-130	1.24	20		
Chloromethane	0.0167	0.010	mg/Kg wet	0.02000		83.7	40-160	2.01	20		†
2-Chlorotoluene	0.0193	0.0020	mg/Kg wet	0.02000		96.4	70-130	0.826	20		
4-Chlorotoluene	0.0182	0.0020	mg/Kg wet	0.02000		91.0	70-130	3.24	20		
1,2-Dibromo-3-chloropropane (DBCP)	0.0172	0.0020	mg/Kg wet	0.02000		86.2	70-130	1.84	20		
1,2-Dibromoethane (EDB)	0.0194	0.0010	mg/Kg wet	0.02000		96.8	70-130	2.85	20		
Dibromomethane	0.0197	0.0020	mg/Kg wet	0.02000		98.3	70-130	0.817	20		
1,2-Dichlorobenzene	0.0189	0.0020	mg/Kg wet	0.02000		94.5	70-130	2.40	20		
1,3-Dichlorobenzene	0.0185	0.0020	mg/Kg wet	0.02000		92.4	70-130	1.29	20		
1,4-Dichlorobenzene	0.0181	0.0020	mg/Kg wet	0.02000		90.7	70-130	0.550	20		
Dichlorodifluoromethane (Freon 12)	0.0206	0.020	mg/Kg wet	0.02000		103	40-160	0.582	20	V-36	†
1,1-Dichloroethane	0.0184	0.0020	mg/Kg wet	0.02000		91.9	70-130	1.73	20		
1,2-Dichloroethane	0.0181	0.0020	mg/Kg wet	0.02000		90.4	70-130	4.12	20		
1,1-Dichloroethylene	0.0174	0.0040	mg/Kg wet	0.02000		86.9	70-130	0.916	20		
cis-1,2-Dichloroethylene	0.0183	0.0020	mg/Kg wet	0.02000		91.3	70-130	0.437	20		
trans-1,2-Dichloroethylene	0.0185	0.0020	mg/Kg wet	0.02000		92.7	70-130	0.645	20		
1,2-Dichloropropane	0.0179	0.0020	mg/Kg wet	0.02000		89.4	70-130	0.669	20		
1,3-Dichloropropane	0.0195	0.0010	mg/Kg wet	0.02000		97.5	70-130	2.23	20		
2,2-Dichloropropane	0.0184	0.0020	mg/Kg wet	0.02000		92.1	70-130	0.649	20		
1,1-Dichloropropene	0.0190	0.0020	mg/Kg wet	0.02000		95.2	70-130	2.39	20		
cis-1,3-Dichloropropene	0.0187	0.0010	mg/Kg wet	0.02000		93.6	70-130	0.426	20		
trans-1,3-Dichloropropene	0.0183	0.0010	mg/Kg wet	0.02000		91.7	70-130	0.760	20		
Diethyl Ether	0.0184	0.020	mg/Kg wet	0.02000		92.2	70-130	2.41	20	U	
Diisopropyl Ether (DIPE)	0.0188	0.0010	mg/Kg wet	0.02000		94.1	70-130	2.10	20		
1,4-Dioxane	0.234	0.10	mg/Kg wet	0.2000		117	40-160	1.71	20		†
Ethylbenzene	0.0190	0.0020	mg/Kg wet	0.02000		94.8	70-130	1.67	20		
Hexachlorobutadiene	0.0170	0.0020	mg/Kg wet	0.02000		85.1	70-130	2.44	20		
2-Hexanone (MBK)	0.173	0.020	mg/Kg wet	0.2000		86.5	40-160	7.22	20		†
Isopropylbenzene (Cumene)	0.0189	0.0020	mg/Kg wet	0.02000		94.3	70-130	1.79	20		
p-Isopropyltoluene (p-Cymene)	0.0181	0.0020	mg/Kg wet	0.02000		90.3	70-130	0.772	20		
Methyl tert-Butyl Ether (MTBE)	0.0209	0.0040	mg/Kg wet	0.02000		105	70-130	0.857	20		
Methylene Chloride	0.0177	0.020	mg/Kg wet	0.02000		88.6	70-130	1.82	20	U	
4-Methyl-2-pentanone (MIBK)	0.180	0.020	mg/Kg wet	0.2000		89.9	40-160	7.92	20		†
Naphthalene	0.0186	0.0040	mg/Kg wet	0.02000		92.8	70-130	4.84	20		

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QUALITY CONTROL

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B390471 - SW-846 5035										
LCS Dup (B390471-BSD1)				Prepared & Analyzed: 10/25/24						
n-Propylbenzene	0.0189	0.0020	mg/Kg wet	0.02000		94.4	70-130	3.13	20	
Styrene	0.0190	0.0020	mg/Kg wet	0.02000		94.8	70-130	2.09	20	
1,1,1,2-Tetrachloroethane	0.0188	0.0020	mg/Kg wet	0.02000		94.1	70-130	2.73	20	
1,1,2,2-Tetrachloroethane	0.0196	0.0010	mg/Kg wet	0.02000		98.2	70-130	7.26	20	
Tetrachloroethylene	0.0178	0.0020	mg/Kg wet	0.02000		88.8	70-130	1.90	20	
Tetrahydrofuran	0.0197	0.010	mg/Kg wet	0.02000		98.3	70-130	5.73	20	
Toluene	0.0170	0.0020	mg/Kg wet	0.02000		84.9	70-130	1.75	20	
1,2,3-Trichlorobenzene	0.0185	0.0020	mg/Kg wet	0.02000		92.7	70-130	0.00	20	
1,2,4-Trichlorobenzene	0.0172	0.0020	mg/Kg wet	0.02000		85.8	70-130	2.08	20	
1,1,1-Trichloroethane	0.0187	0.0020	mg/Kg wet	0.02000		93.4	70-130	0.107	20	
1,1,2-Trichloroethane	0.0184	0.0020	mg/Kg wet	0.02000		92.2	70-130	1.61	20	
Trichloroethylene	0.0175	0.0020	mg/Kg wet	0.02000		87.6	70-130	2.70	20	
Trichlorofluoromethane (Freon 11)	0.0182	0.010	mg/Kg wet	0.02000		91.0	70-130	2.07	20	
1,2,3-Trichloropropane	0.0193	0.0020	mg/Kg wet	0.02000		96.6	70-130	7.76	20	
1,2,4-Trimethylbenzene	0.0179	0.0020	mg/Kg wet	0.02000		89.5	70-130	1.55	20	
1,3,5-Trimethylbenzene	0.0187	0.0020	mg/Kg wet	0.02000		93.7	70-130	1.38	20	
Vinyl Chloride	0.0187	0.010	mg/Kg wet	0.02000		93.7	70-130	0.428	20	
m+p Xylene	0.0375	0.0040	mg/Kg wet	0.04000		93.8	70-130	1.38	20	
o-Xylene	0.0190	0.0020	mg/Kg wet	0.02000		94.8	70-130	0.840	20	
Surrogate: 1,2-Dichloroethane-d4	*0.0493*		mg/Kg wet	0.05000		98.6	70-130			
Surrogate: Toluene-d8	*0.0494*		mg/Kg wet	0.05000		98.8	70-130			
Surrogate: 4-Bromofluorobenzene	*0.0493*		mg/Kg wet	0.05000		98.6	70-130			

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QUALITY CONTROL

Petroleum Hydrocarbons Analyses - EPH - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B390464 - SW-846 3510C										
Blank (B390464-BLK1)				Prepared: 10/25/24 Analyzed: 10/28/24						
C9-C18 Aliphatics	ND	10	mg/Kg wet							U
C19-C36 Aliphatics	ND	10	mg/Kg wet							U
Unadjusted C11-C22 Aromatics	ND	10	mg/Kg wet							U
C11-C22 Aromatics	ND	10	mg/Kg wet							U
Acenaphthene	ND	0.10	mg/Kg wet							U
Acenaphthylene	ND	0.10	mg/Kg wet							U
Anthracene	ND	0.10	mg/Kg wet							U
Benzo(a)anthracene	ND	0.10	mg/Kg wet							U
Benzo(a)pyrene	ND	0.10	mg/Kg wet							U
Benzo(b)fluoranthene	ND	0.10	mg/Kg wet							U
Benzo(g,h,i)perylene	ND	0.10	mg/Kg wet							U
Benzo(k)fluoranthene	ND	0.10	mg/Kg wet							U
Chrysene	ND	0.10	mg/Kg wet							U
Dibenz(a,h)anthracene	ND	0.10	mg/Kg wet							U
Fluoranthene	ND	0.10	mg/Kg wet							U
Fluorene	ND	0.10	mg/Kg wet							U
Indeno(1,2,3-cd)pyrene	ND	0.10	mg/Kg wet							U
2-Methylnaphthalene	ND	0.10	mg/Kg wet							U
Naphthalene	ND	0.10	mg/Kg wet							U
Phenanthrene	ND	0.10	mg/Kg wet							U
Pyrene	ND	0.10	mg/Kg wet							U
Naphthalene-aliphatic fraction	ND	0.10	mg/Kg wet							U
2-Methylnaphthalene-aliphatic fraction	ND	0.10	mg/Kg wet							U
Surrogate: Chlorooctadecane (COD)	*2.74*		mg/Kg wet	4.990		54.9	40-140			
Surrogate: o-Terphenyl (OTP)	*2.61*		mg/Kg wet	4.990		52.2	40-140			
Surrogate: 2-Bromonaphthalene	*3.68*		mg/Kg wet	4.990		73.7	40-140			
Surrogate: 2-Fluorobiphenyl	*3.49*		mg/Kg wet	4.990		70.0	40-140			
LCS (B390464-BS1)				Prepared: 10/25/24 Analyzed: 10/28/24						
C9-C18 Aliphatics	19.5	10	mg/Kg wet	29.97		65.1	40-140			
C19-C36 Aliphatics	31.2	10	mg/Kg wet	39.96		78.0	40-140			
Unadjusted C11-C22 Aromatics	63.5	10	mg/Kg wet	84.92		74.7	40-140			
Acenaphthene	3.08	0.10	mg/Kg wet	4.995		61.6	40-140			
Acenaphthylene	2.80	0.10	mg/Kg wet	4.995		56.0	40-140			
Anthracene	3.47	0.10	mg/Kg wet	4.995		69.5	40-140			
Benzo(a)anthracene	3.62	0.10	mg/Kg wet	4.995		72.5	40-140			
Benzo(a)pyrene	3.49	0.10	mg/Kg wet	4.995		69.8	40-140			
Benzo(b)fluoranthene	3.50	0.10	mg/Kg wet	4.995		70.2	40-140			
Benzo(g,h,i)perylene	3.48	0.10	mg/Kg wet	4.995		69.6	40-140			
Benzo(k)fluoranthene	3.73	0.10	mg/Kg wet	4.995		74.6	40-140			
Chrysene	3.61	0.10	mg/Kg wet	4.995		72.4	40-140			
Dibenz(a,h)anthracene	3.55	0.10	mg/Kg wet	4.995		71.1	40-140			
Fluoranthene	3.55	0.10	mg/Kg wet	4.995		71.1	40-140			
Fluorene	3.26	0.10	mg/Kg wet	4.995		65.3	40-140			
Indeno(1,2,3-cd)pyrene	3.57	0.10	mg/Kg wet	4.995		71.5	40-140			
2-Methylnaphthalene	2.91	0.10	mg/Kg wet	4.995		58.2	40-140			
Naphthalene	2.75	0.10	mg/Kg wet	4.995		55.1	40-140			
Phenanthrene	3.43	0.10	mg/Kg wet	4.995		68.6	40-140			
Pyrene	3.59	0.10	mg/Kg wet	4.995		71.9	40-140			
Naphthalene-aliphatic fraction	ND	0.10	mg/Kg wet	4.995			0-5			U
2-Methylnaphthalene-aliphatic fraction	ND	0.10	mg/Kg wet	4.995			0-5			U
Surrogate: Chlorooctadecane (COD)	*2.84*		mg/Kg wet	4.995		56.9	40-140			

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QUALITY CONTROL

Petroleum Hydrocarbons Analyses - EPH - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B390464 - SW-846 3510C										
LCS (B390464-BS1)				Prepared: 10/25/24 Analyzed: 10/28/24						
Surrogate: o-Terphenyl (OTP)	*2.79*		mg/Kg wet	4.995		55.9	40-140			
Surrogate: 2-Bromonaphthalene	*4.69*		mg/Kg wet	4.995		94.0	40-140			
Surrogate: 2-Fluorobiphenyl	*4.62*		mg/Kg wet	4.995		92.5	40-140			
LCS Dup (B390464-BSD1)				Prepared: 10/25/24 Analyzed: 10/28/24						
C9-C18 Aliphatics	22.4	10	mg/Kg wet	29.96		74.8	40-140	13.9	25	
C19-C36 Aliphatics	34.2	10	mg/Kg wet	39.94		85.6	40-140	9.31	25	
Unadjusted C11-C22 Aromatics	70.8	10	mg/Kg wet	84.87		83.4	40-140	10.9	25	
Acenaphthene	3.54	0.10	mg/Kg wet	4.993		71.0	40-140	14.1	25	
Acenaphthylene	3.22	0.10	mg/Kg wet	4.993		64.5	40-140	14.2	25	
Anthracene	3.94	0.10	mg/Kg wet	4.993		79.0	40-140	12.7	25	
Benzo(a)anthracene	4.09	0.10	mg/Kg wet	4.993		81.9	40-140	12.1	25	
Benzo(a)pyrene	3.95	0.10	mg/Kg wet	4.993		79.0	40-140	12.3	25	
Benzo(b)fluoranthene	3.95	0.10	mg/Kg wet	4.993		79.1	40-140	12.0	25	
Benzo(g,h,i)perylene	3.91	0.10	mg/Kg wet	4.993		78.4	40-140	11.8	25	
Benzo(k)fluoranthene	4.23	0.10	mg/Kg wet	4.993		84.6	40-140	12.5	25	
Chrysene	4.08	0.10	mg/Kg wet	4.993		81.7	40-140	12.1	25	
Dibenz(a,h)anthracene	4.01	0.10	mg/Kg wet	4.993		80.4	40-140	12.1	25	
Fluoranthene	4.00	0.10	mg/Kg wet	4.993		80.1	40-140	11.9	25	
Fluorene	3.73	0.10	mg/Kg wet	4.993		74.8	40-140	13.4	25	
Indeno(1,2,3-cd)pyrene	4.05	0.10	mg/Kg wet	4.993		81.1	40-140	12.6	25	
2-Methylnaphthalene	3.40	0.10	mg/Kg wet	4.993		68.2	40-140	15.8	25	
Naphthalene	3.28	0.10	mg/Kg wet	4.993		65.7	40-140	17.6	25	
Phenanthrene	3.89	0.10	mg/Kg wet	4.993		77.9	40-140	12.7	25	
Pyrene	4.05	0.10	mg/Kg wet	4.993		81.0	40-140	11.9	25	
Naphthalene-aliphatic fraction	ND	0.10	mg/Kg wet	4.993			0-5			U
2-Methylnaphthalene-aliphatic fraction	ND	0.10	mg/Kg wet	4.993			0-5			U
Surrogate: Chlorooctadecane (COD)	*3.18*		mg/Kg wet	4.993		63.6	40-140			
Surrogate: o-Terphenyl (OTP)	*3.10*		mg/Kg wet	4.993		62.0	40-140			
Surrogate: 2-Bromonaphthalene	*4.82*		mg/Kg wet	4.993		96.5	40-140			
Surrogate: 2-Fluorobiphenyl	*4.70*		mg/Kg wet	4.993		94.2	40-140			

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

QUALITY CONTROL

Metals Analyses (Total) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B390661 - SW-846 3050B										
Blank (B390661-BLK1)				Prepared: 10/28/24 Analyzed: 10/30/24						
Lead	ND	0.49	mg/Kg wet							U
LCS (B390661-BS1)				Prepared: 10/28/24 Analyzed: 10/30/24						
Lead	172	1.4	mg/Kg wet	194.0		88.8	82-118.6			
LCS Dup (B390661-BSD1)				Prepared: 10/28/24 Analyzed: 10/30/24						
Lead	177	1.4	mg/Kg wet	194.0		91.4	82-118.6	2.87	30	
Dilution Check (B390661-SRL1)		**Source: 24J2890-01**		Prepared: 10/28/24 Analyzed: 10/30/24						
Lead	4.11	2.7	mg/Kg dry		3.41			18.9	20	

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FLAG/QUALIFIER SUMMARY

*	QC result is outside of established limits.
†	Wide recovery limits established for difficult compound.
‡	Wide RPD limits established for difficult compound.
#	Data exceeded client recommended or regulatory level
ND	Not Detected
RL	Reporting Limit is at the level of quantitation (LOQ)
DL	Detection Limit is the lower limit of detection determined by the MDL study
MCL	Maximum Contaminant Level
	Percent recoveries and relative percent differences (RPDs) are determined by the software using values in the calculation which have not been rounded.
	No results have been blank subtracted unless specified in the case narrative section.
U	Analyte included in the analysis, but not detected
V-16	Response factor is less than method specified minimum acceptable value. Reduced precision and accuracy may be associated with reported result.
V-34	Initial calibration verification (ICV) did not meet method specifications and was biased on the low side for this compound. Reported result is estimated.
V-36	Initial calibration verification (ICV) did not meet method specifications and was biased on the high side. Data validation is not affected since sample result was "not detected" for this compound.

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CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
MADEP EPH rev 2.1 in Soil	
C9-C18 Aliphatics	CT,NC,ME,NH-P
C19-C36 Aliphatics	CT,NC,ME,NH-P
Unadjusted C11-C22 Aromatics	CT,NC,ME,NH-P
C11-C22 Aromatics	CT,NC,ME,NH-P
Acenaphthene	CT,NC,ME,NH-P
Acenaphthylene	CT,NC,ME,NH-P
Anthracene	CT,NC,ME,NH-P
Benzo(a)anthracene	CT,NC,ME,NH-P
Benzo(a)pyrene	CT,NC,ME,NH-P
Benzo(b)fluoranthene	CT,NC,ME,NH-P
Benzo(g,h,i)perylene	CT,NC,ME,NH-P
Benzo(k)fluoranthene	CT,NC,ME,NH-P
Chrysene	CT,NC,ME,NH-P
Dibenz(a,h)anthracene	CT,NC,ME,NH-P
Fluoranthene	CT,NC,ME,NH-P
Fluorene	CT,NC,ME
Indeno(1,2,3-cd)pyrene	CT,NC,ME,NH-P
2-Methylnaphthalene	CT,NC
Naphthalene	CT,NC,ME,NH-P
Phenanthrene	CT,NC,ME,NH-P
Pyrene	CT,NC,ME,NH-P
MADEP EPH rev 2.1 in Water	
C9-C18 Aliphatics	CT,NC,ME,NH-P
C19-C36 Aliphatics	CT,NC,ME,NH-P
Unadjusted C11-C22 Aromatics	CT,NC,ME,NH-P
C11-C22 Aromatics	CT,NC,ME,NH-P
Acenaphthene	CT,NC,ME,NH-P
Acenaphthylene	CT,NC,ME,NH-P
Anthracene	CT,NC,ME,NH-P
Benzo(a)anthracene	CT,NC,ME,NH-P
Benzo(a)pyrene	CT,NC,ME,NH-P
Benzo(b)fluoranthene	CT,NC,ME,NH-P
Benzo(g,h,i)perylene	CT,NC,ME,NH-P
Benzo(k)fluoranthene	CT,NC,ME,NH-P
Chrysene	CT,NC,ME,NH-P
Dibenz(a,h)anthracene	CT,NC,ME,NH-P
Fluoranthene	CT,NC,ME,NH-P
Fluorene	CT,NC,ME
Indeno(1,2,3-cd)pyrene	CT,NC,ME,NH-P
2-Methylnaphthalene	CT,NC
Naphthalene	CT,NC,ME,NH-P
Phenanthrene	CT,NC,ME,NH-P
Pyrene	CT,NC,ME,NH-P
SW-846 6010D in Soil	
Lead	CT,NH,NY,ME,VA,NC
SW-846 6010D in Water	

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CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
SW-846 6010D in Water	
Lead	CT,NH,NY,ME,VA,NC
SW-846 8260D in Soil	
Acetone	CT,NH,NY,ME
Benzene	CT,NH,NY,ME
Bromobenzene	NH,NY,ME
Bromochloromethane	NH,NY,ME
Bromodichloromethane	CT,NH,NY,ME
Bromoform	CT,NH,NY,ME
Bromomethane	CT,NH,NY,ME
2-Butanone (MEK)	CT,NH,NY,ME
n-Butylbenzene	CT,NH,NY,ME
sec-Butylbenzene	CT,NH,NY,ME
tert-Butylbenzene	CT,NH,NY,ME
Carbon Disulfide	CT,NH,NY,ME
Carbon Tetrachloride	CT,NH,NY,ME
Chlorobenzene	CT,NH,NY,ME
Chlorodibromomethane	CT,NH,NY,ME
Chloroethane	CT,NH,NY,ME
Chloroform	CT,NH,NY,ME
Chloromethane	CT,NH,NY,ME
2-Chlorotoluene	CT,NH,NY,ME
4-Chlorotoluene	CT,NH,NY,ME
1,2-Dibromo-3-chloropropane (DBCP)	NY
1,2-Dibromoethane (EDB)	NY
Dibromomethane	NH,NY,ME
1,2-Dichlorobenzene	CT,NH,NY,ME
1,3-Dichlorobenzene	CT,NH,NY,ME
1,4-Dichlorobenzene	CT,NH,NY,ME
Dichlorodifluoromethane (Freon 12)	NY,ME
1,1-Dichloroethane	CT,NH,NY,ME
1,2-Dichloroethane	CT,NH,NY,ME
1,1-Dichloroethylene	CT,NH,NY,ME
cis-1,2-Dichloroethylene	CT,NH,NY,ME
trans-1,2-Dichloroethylene	CT,NH,NY,ME
1,2-Dichloropropane	CT,NH,NY,ME
1,3-Dichloropropane	NH,NY,ME
2,2-Dichloropropane	NH,NY,ME
1,1-Dichloropropene	NH,NY,ME
cis-1,3-Dichloropropene	CT,NH,NY,ME
trans-1,3-Dichloropropene	CT,NH,NY,ME
1,4-Dioxane	NY
Ethylbenzene	CT,NH,NY,ME
Hexachlorobutadiene	NH,NY,ME
2-Hexanone (MBK)	CT,NH,NY,ME
Isopropylbenzene (Cumene)	CT,NH,NY,ME
p-Isopropyltoluene (p-Cymene)	NH,NY

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CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
SW-846 8260D in Soil	
Methyl tert-Butyl Ether (MTBE)	NH,NY
Methylene Chloride	CT,NH,NY,ME
4-Methyl-2-pentanone (MIBK)	CT,NH,NY
Naphthalene	NH,NY,ME
n-Propylbenzene	NH,NY
Styrene	CT,NH,NY,ME
1,1,1,2-Tetrachloroethane	CT,NH,NY,ME
1,1,2,2-Tetrachloroethane	CT,NH,NY,ME
Tetrachloroethylene	CT,NH,NY,ME
Toluene	CT,NH,NY,ME
1,2,3-Trichlorobenzene	NY
1,2,4-Trichlorobenzene	NH,NY,ME
1,1,1-Trichloroethane	CT,NH,NY,ME
1,1,2-Trichloroethane	CT,NH,NY,ME
Trichloroethylene	CT,NH,NY,ME
Trichlorofluoromethane (Freon 11)	CT,NH,NY,ME
1,2,3-Trichloropropane	NH,NY,ME
1,2,4-Trimethylbenzene	CT,NH,NY,ME
1,3,5-Trimethylbenzene	CT,NH,NY,ME
Vinyl Chloride	CT,NH,NY,ME
m+p Xylene	CT,NH,NY,ME
o-Xylene	CT,NH,NY,ME

Con-Test, a Pace Environmental Laboratory, operates under the following certifications and accreditations:

Code	Description	Number	Expires
CT	Connecticut Department of Public Health	PH-0821	12/31/2024
NY	New York State Department of Health	10899 NELAP	04/1/2025
NH	New Hampshire Environmental Lab	2516 NELAP	02/5/2025
NC	North Carolina Div. of Water Quality	652	12/31/2024
ME	State of Maine	MA00100	06/9/2025
VA	Commonwealth of Virginia	460217	12/14/2024
NH-P	New Hampshire Environmental Lab	2557 NELAP	09/6/2025

24J3550

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Doc # 381 Rev 5_07/13/2021

CHAIN OF CUSTODY RECORD

39 Spruce Street
East Longmeadow, MA 01028

Company Name: Wilcox Burton Inc.
Address: 2 Home Ave. Concord, NH
Phone: 603-369-4190
Project Name: BHA Cover
Project Location: Reading, MA
Project Number:
Project Manager: A. Midgley
Pace Quote Name/Number:
Invoice Recipient:
Sampled By: ELD

Requested Turnaround Time			
7-Day	☐	10-Day	☐
PFAS 10-Day (std)	☐	Due Date:	

Rush-Approval Required			
1-Day	☐	3-Day	☐
2-Day	☐	4-Day	☒

Data Delivery	
Format: PDF	☒ EXCEL ☒
Other:	
CLP Like Data Pkg Required:	☐
Email To:	AMedgley@wilcox
Fax To #:	@wilcoxburton.com

Dissolved Metals Samples	
○	Field Filtered
○	Lab to Filter

Orthophosphate Samples	
○	Field Filtered
○	Lab to Filter

PCB ONLY
SOXHLET ☐
NON SOXHLET ☐

ANALYSIS REQUESTED

Pace Work Order#	Client Sample ID / Description	Beginning Date/Time	Ending Date/Time	COMP/GRAB	[1]Matrix Code	Conc Code	VIALS	GLASS	PLASTIC	BACTERIA	ENCORE	Lead 6010
1	HA-1(0-1')	10/23/24	0850	C	S	U		1				X
2	HA-2(0-1')		0858					1				X
3	HA-3(0-1')		0905					1				X
4	HA-4(0-1')		1010					1				X
5	HA-5(0-1')		1043					1				X
6	HA-6(0-1')		1052					1				X
7	HA-7(0-1')		1139					1				X
8	HA-8(0-1')		1207					1				X
9	HA-9(0-1')		1214					1				X
10	HA-10(0-1')		1219					1				X

[2] Preservation Code

Courier Use Only
Total Number Of:
VIALS_____
GLASS_____
PLASTIC_____
BACTERIA_____
ENCORE_____

Glassware in the fridge? Y / N
Glassware in freezer? Y / N
Prepackaged Cooler? Y / N

*Pace Analytical is not responsible for missing samples from prepacked coolers

[1] Matrix Codes:
GW = Ground Water
WW = Waste Water
DW = Drinking Water
A = Air
S = Soil
SL = Sludge
SOL = Solid
O = Other (please define)

[2] Preservation Codes:
I = Iced
H = HCL
M = Methanol
N = Nitric Acid
S = Sulfuric Acid
B = Sodium Bisulfate
X = Sodium Hydroxide
T = Sodium Thiosulfate
O = Other (please define)

Relinquished by: (signature)	Date/Time: 10/24/24 0532	Client Comments:
Received by: (signature)	Date/Time: 10/24/24 1110	
Relinquished by: (signature)	Date/Time: OCT 24 2024	
Received by: (signature)	Date/Time: 10-24 1840	
Relinquished by: (signature)	Date/Time: 10-24 2050	
Received by: (signature)	Date/Time: 10/24/24 2031	
Relinquished by: (signature)	Date/Time:	
Received by: (signature)	Date/Time:	

Detection Limit Requirements	
MA	S-1
CT	
Other:	

Special Requirements	
☒	MA MCP Required
	MCP Certification Form Required
☐	CT RCP Required
	RCP Certification Form Required
☐	MA State DW Required
PWSID #	

Please use the following codes to indicate possible sample concentration within the Conc Code column above:
H - High; M - Medium; L - Low; C - Clean; U - Unknown

NELAC and AIHA-LAP, LLC Accredited

Project Entity
Government ☐ Municipality ☐ MWRA ☐ WRTA ☐
Federal ☐ 21 J ☐ School ☐
City ☐ Brownfield ☐ MBTA ☐

Other
☐ Chromatogram
☐ AIHA-LAP,LLC

Comments:

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

Table of Contents

24J3550

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http://www.pacelabs.com

CHAIN OF CUSTODY RECORD

39 Spruce Street
East Longmeadow, MA 01028

Doc # 381 Rev 5_07/13/2021

Company Name: Wilcox & Barton, Inc.
Address: 2 Henry Ave. Concord, NH
Phone: 603-369-4190
Project Name: BHA10002
Project Location: Reading, MA
Project Number:
Project Manager: A. Midgley
Pace Quote Name/Number:
Invoice Recipient:
Sampled By: BD

Requested Turnaround Time: 7-Day ☐ 10-Day ☐ PFAS 10-Day (std) ☐ Due Date:
Rush-Approval Required: 1-Day ☐ 3-Day ☐ 2-Day ☐ 4-Day ☒
Data Delivery: Format: PDF ☒ EXCEL ☒ Other: CLP Like Data Pkg Required: ☐ Email To: AMidgley@WilcoxBarton.com Fax To #: emilBarton.com
Dissolved Metals Samples: ○ Field Filtered ○ Lab to Filter
Orthophosphate Samples: ○ Field Filtered ○ Lab to Filter
PCB ONLY: SOXHLET ☐ NON SOXHLET ☐

ANALYSIS REQUESTED

Pace Work Order#	Client Sample ID / Description	Beginning Date/Time	Ending Date/Time	COMP/GRAB	[1]Matrix Code	Conc Code	VIALS	GLASS	PLASTIC	BACTERIA	ENCORE	PCB	VOCs
11	B(MW)-201(7-7.5)	10/23/24	0930	C	S	U	3	1				X	X
12	B(MW)-202(10-10.5)	"	1033	"	"	"	3	1				X	X
13	B(MW)-203(15.5-16.5)	"	1120	"	"	"	3	1				X	X
14	B(MW)-204(6-6.5)	"	1155	"	"	"	3	1				X	X

[2] Preservation Code
Courier Use Only
Total Number Of:
VIALS
GLASS
PLASTIC
BACTERIA
ENCORE

Glassware in the fridge? Y / N
Glassware in freezer? Y / N
Prepackaged Cooler? Y / N
*Pace Analytical is not responsible for missing samples from prepacked coolers

[1] Matrix Codes:
GW = Ground Water
WW = Waste Water
DW = Drinking Water
A = Air
S = Soil
SL = Sludge
SOL = Solid
O = Other (please define)

[2] Preservation Codes:
I = Iced
H = HCL
M = Methanol
N = Nitric Acid
S = Sulfuric Acid
B = Sodium Bisulfate
X = Sodium Hydroxide
T = Sodium Thiosulfate
O = Other (please define)

Relinquished by: (signature)	Date/Time: 1530 10/24/24	Client Comments: (A)
Received by: (signature)	Date/Time: 10/24/24 1115	
Relinquished by: (signature) PACE OC	Date/Time: 2024	
Received by: (signature)	Date/Time: 10-24 1840	
Relinquished by: (signature)	Date/Time: 10-24 2030	
Received by: (signature) 4.2	Date/Time: 10/24/24 2030	
Relinquished by: (signature)	Date/Time:	
Received by: (signature)	Date/Time:	

Detection Limit Requirements: MA 5-1
Special Requirements: ☒ MA MCP Required; ☐ MCP Certification Form Required; ☐ CT RCP Required; ☐ RCP Certification Form Required; ☐ MA State DW Required
Other: PWSID #
NELAC and AIHA-LAP, LLC Accredited

Please use the following codes to indicate possible sample concentration within the Conc Code column above:
H - High; M - Medium; L - Low; C - Clean; U - Unknown

Project Entity: Government ☐ Municipality ☐ MWRA ☐ WRTA ☐ Federal ☐ 21 J ☐ School ☐ City ☐ Brownfield ☐ MBTA ☐

Other: ☐ Chromatogram ☐ AIHA-LAP,LLC

Comments:

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

Table of Contents

Pace ANALYTICAL SERVICES	DC#_Title: ENV-FRM-ELON-0001 v08_Sample Receiving Checklist
	Effective Date: 06/11/2024

Log In Back-Sheet

Client W+B

Project BHAI00002

MCP/RCP Required MCP

Deliverable Package Requirement S-1

Location Reading, MA

PWSID# (When Applicable) N/A

Arrival Method:

Courier ☒ Fed Ex ☐ Walk In ☐ Other ☐ _____

Received By / Date / Time DWW 10/24 2030

Back-Sheet By / Date / Time DWW 10/24 2151

Temperature Method GUN # 6

WV samples: Yes (see note*) / (No) (follow normal procedure)

Temp X < 6° C Actual Temperature 4.2

Rush Samples: (Yes) / No Notify Teams Mess.

Short Hold: Yes / (No) Notify _____

Notes regarding Samples/COC outside of SOP:

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

	True	False
Received on Ice	☒	☐
Received in Cooler	☒	☐
Custody Seal: DATE TIME	☐	☒
COC Relinquished	☒	☐
COC/Samples Labels Agree	☒	☐
All Samples in Good Condition	☒	☐
Samples Received within Holding Time	☒	☐
Is there enough Volume	☒	☐
Proper Media/Container Used	☒	☐
Splitting Samples Required	☐	☒
MS/MSD	☐	☒
Trip Blanks	☐	☒
Lab to Filters	☐	☒
COC Legible	☒	☐

COC Included: (Check all included)

Client ☒ Analysis ☒ Sampler Name ☒

Project ☒ IDs ☒ Collection Date/Time ☒

All Samples Proper pH: (N/A) ☐ ☐

Additional Container Notes

Note: West Virginia requires all samples to have their temperature taken. Note any outliers.

Qualtrax ID: 120836

Pace ANALYTICAL SERVICES	DC#_Title: ENV-FRM-ELON-0001 v08_Sample Receiving Checklist
	Effective Date: 06/11/2024

Qualtrax ID: 120836

Sample	Soils Jars (Circle Amb/Clear)				Ambers						Plastics												VOA Vials					Other / Fill in					
	16oz Amb/Clear	8oz Amb/Clear	4oz Amb/Clear	2oz Amb/Clear	1 Liter			250mL			1 Liter	500mL		250mL																		
					Unpreserved	HCL	Sulfuric	Sulfuric	Phosphoric	HCl	Unpreserved	Unpreserved	Sulfuric	Unpreserved	Trizma	Sulfuric	Nitric	NaOH	Ammonium Acetate	NaOH/Zinc	Unpreserved	HCl	MeOH	D.I. Water	Bisulfate	Col/Bact						
1	1																															
2		1																														
3																																
4																																
5																																
6																																
7																																
8																																
9																																
10																																
11																							1	1	2							
12																							1	1	1							
13																							1	1	1							
14	1																						1	1	2							
15																																
16																																
17																																
18																																
19																																
20																																

MADEP MCP Analytical Method Report Certification Form

Laboratory Name: Pace New England	Project #: 24J3550
Project Location: Reading, MA	RTN:

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

24J3550-01 thru 24J3550-14

Matrices: Soil

CAM Protocol (check all that below)

8260 VOC CAM II A (X)	7470/7471 Hg CAM IIIB ( )	MassDEP VPH (GC/PID/FID) CAM IV A ( )	8082 PCB CAM V A ( )	9014 Total Cyanide/PAC CAM VI A ( )	6860 Perchlorate CAM VIII B ( )
8270 SVOC CAM II B ( )	7010 Metals CAM III C ( )	MassDEP VPH (GC/MS) CAM IV C ( )	8081 Pesticides CAM V B ( )	7196 Hex Cr CAM VI B ( )	MassDEP APH CAM IX A ( )
6010 Metals CAM III A (X)	6020 Metals CAM III D ( )	MassDEP EPH CAM IV B (X)	8151 Herbicides CAM V C ( )	8330 Explosives CAM VIII A ( )	TO-15 VOC CAM IX B ( )

Affirmative response to Questions A throughF is required for "Presumptive Certainty" status

A	Were all samples received in a condition consistent with those described on the Chain-of-Custody, properly preserved (including temperature) in the field or laboratory, and prepared/analyzed within method holding times?	☑ Yes	☐ No[1]
B	Were the analytical method(s) and all associated QC requirements specificed in the selected CAM protocol(s) followed?	☑ Yes	☐ No[1]
C	Were all required corrective actions and analytical response actions specified in the selected CAM protocol(s) implemented for all identified performance standard non-conformances?	☑ Yes	☐ No[1]
D	Does the laboratory report comply with all the reporting requirements specified in CAM VII A, Quality Assurance and Quality Control Guidlines for the Acquisition and Reporting of Analytical Data?	☑ Yes	☐ No[1]
E a	VPH, EPH, and APH Methods only: Was each method conducted without significant modification(s)? (Refer to the individual method(s) for a list of significant modifications).	☐ Yes	☐ No[1]
E b	APH and TO-15 Methods only: Was the complete analyte list reported for each method?	☐ Yes	☐ No[1]
F	Were all applicable CAM protocol QC and performance standard non-conformances identified and evaluated in a laboratory narrative (including all No responses to Qestions A through E)?	☑ Yes	☐ No[1]

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

G	Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocol(s)?	☑ Yes	☐ No[1]

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

H	Were all QC perfomance standards specified in the CAM protocol(s) achieved?	☐ Yes	☑ No[1]
I	Were results reported for the complete analyte list specified in the selected CAM protocol(s)?	☐ Yes	☑ No[1]

[1] *All Negative responses must be addressed in an attached Environmental Laboratory case narrative.*

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

Signature: Lisa Worthington Position: Technical Representative

Printed Name: Lisa A. Worthington Date: 10/30/24