ARM Group LLC
Engineers and Scientists

April 18, 2024

Ms. Barbara Brown
Project Coordinator
Maryland Department of the Environment
1800 Washington Boulevard
Baltimore, MD 21230

Re: Lead Excavation Letter
Area B: Parcel B18
Tradepoint Atlantic
Sparrows Point, MD 21219

Dear Ms. Brown:

ARM Group LLC (ARM), on behalf of Tradepoint Atlantic (TPA), has prepared this letter summarizing the most recent removal activities associated with the lead impacted soils at Parcel B18 (the Site) on the Tradepoint Atlantic (TPA) property located in Sparrows Point, Maryland. Following review and approval of the Lead Excavation Work Plan (ARM, January 20, 2022) by the Maryland Department of the Environment (MDE) and the United States Environmental Protection Agency (USEPA) (hereafter referred to as the Agencies), the excavation was performed in various phases between May 2022 and March 2024 to address known areas of lead impacted soil, specifically soil with lead results above 10,000 milligrams per kilogram (mg/kg), the Adult Lead Model (ALM) value threshold of 2,517 mg/kg or Toxicity Characteristic Leaching Procedure (TCLP) lead results above 5 milligrams per liter (mg/L). This letter builds on the *Parcel B18 Lead Excavation Completion Report* (Revision 2 dated August 1, 2023).

B18 Excavation

Since submission of the *Parcel B18 Lead Excavation Completion Report*, four additional removal activities were performed extending the area of the original excavation (October 25, 2023, November 21, 2023, January 12, 2024, and March 20, 2024). These removal activities were performed to address the residual elevated lead concentrations in the northeastern / eastern portions of the initial excavation. During the most recent March 20, 2024 removal event, a handheld Thermo Scientific Niton XL3t X-ray Fluorescence Analyzer (XRF) was used to take field screening measurements of lead concentrations in the soil along the eastern boundary of the excavation where elevated lead concentrations were found to persist and to guide additional removal of impacted soils. The XRF was calibrated prior to and after measurement collection, with the results showing no significant instrument drift. XRF measurements were collected from across

the eastern sidewall at varying depths, until the results were generally less than 2,000 parts per million (ppm) (below the ALM value threshold of 2,517 mg/kg). The final XRF results are included in **Table 1**. At that point, the excavation was halted, and three sidewall confirmation samples were collected with analysis for total lead and TCLP lead. Refer to **Figure 1** and **Table 2** for the results from the sidewall confirmation sampling.

The final extent of the B18 lead excavation area (approximately 1,618 square feet) is shown in **Figure 1**. **Figure 1** and **Table 2** also summarize the previous confirmation sample results. The confirmation samples include:

- Base confirmation samples:
    - B18-043C-SB (5 feet and 9 feet) and B18-084-SB (5 feet) for the southwest portion of the excavation.
    - B18-043-B2 (8 feet) for the northeast portion of the excavation.
    - Note: B18-043-B4 (8 feet) location was excavated, no additional sample was able to be collected due to the concrete wall.
- Sidewall confirmation samples:
    - West / northwest sidewall: no samples were able to be collected due to the retaining wall and I-beam support structure.
    - Southern sidewall: B18-043-S10 (2.5 feet).
        - Note B18-043-S2 (1.5 feet) location was excavated, no additional sample was able to be collected due to the concrete wall.
    - Eastern sidewall: B18-043-S9 (2.5 feet), B18-043-S13 (4 feet), B18-043-S14 (4 feet), and B18-043-S15 (4 feet).

All TCLP lead results are below the characteristically hazardous threshold of 5 mg/L. All total lead results are below the ALM value threshold of 2,517 mg/kg. Based on the confirmation sample results, the lead impacts at the Site have been delineated and removed. Laboratory reports for the October 2023 and March 2024 samples are included as **Appendix A** (previous results were included in the *Parcel B18 Lead Excavation Completion Report* (Revision 2 dated August 1, 2023).

Proposed Waste Characterization Sampling

There are three stockpiles of lead - impacted soil that were generated from the last three rounds of soil removal. The three soil piles have estimated quantities of ~150 cubic yards (CY) for the northern stockpile, ~60 CY for the southwest stockpile, and ~40 CY for the southeast stockpile (refer to **Appendix B** for an aerial photograph of the stockpile layout). One grab sample and one 3-point composite sample will be collected for waste characterization purposes from each stockpile. Laboratory analysis of the grab samples will be conducted for TCLP volatile organic compounds (VOCs). Laboratory analysis of the composite samples will be conducted for TCLP semivolatile organic compounds (SVOCs), TCLP Metals, and total polychlorinated biphenyls (PCBs).

It is anticipated that the stockpiled soil will be disposed of at Greys Landfill; no material will be moved offsite without Agency approval.

If you have questions regarding any information covered in this document, please feel free to contact Peter Haid at Tradepoint Atlantic: 443-649-5055.

Respectfully Submitted,
ARM Group LLC

Joshua M. Barna, P.G.
Project Geologist II

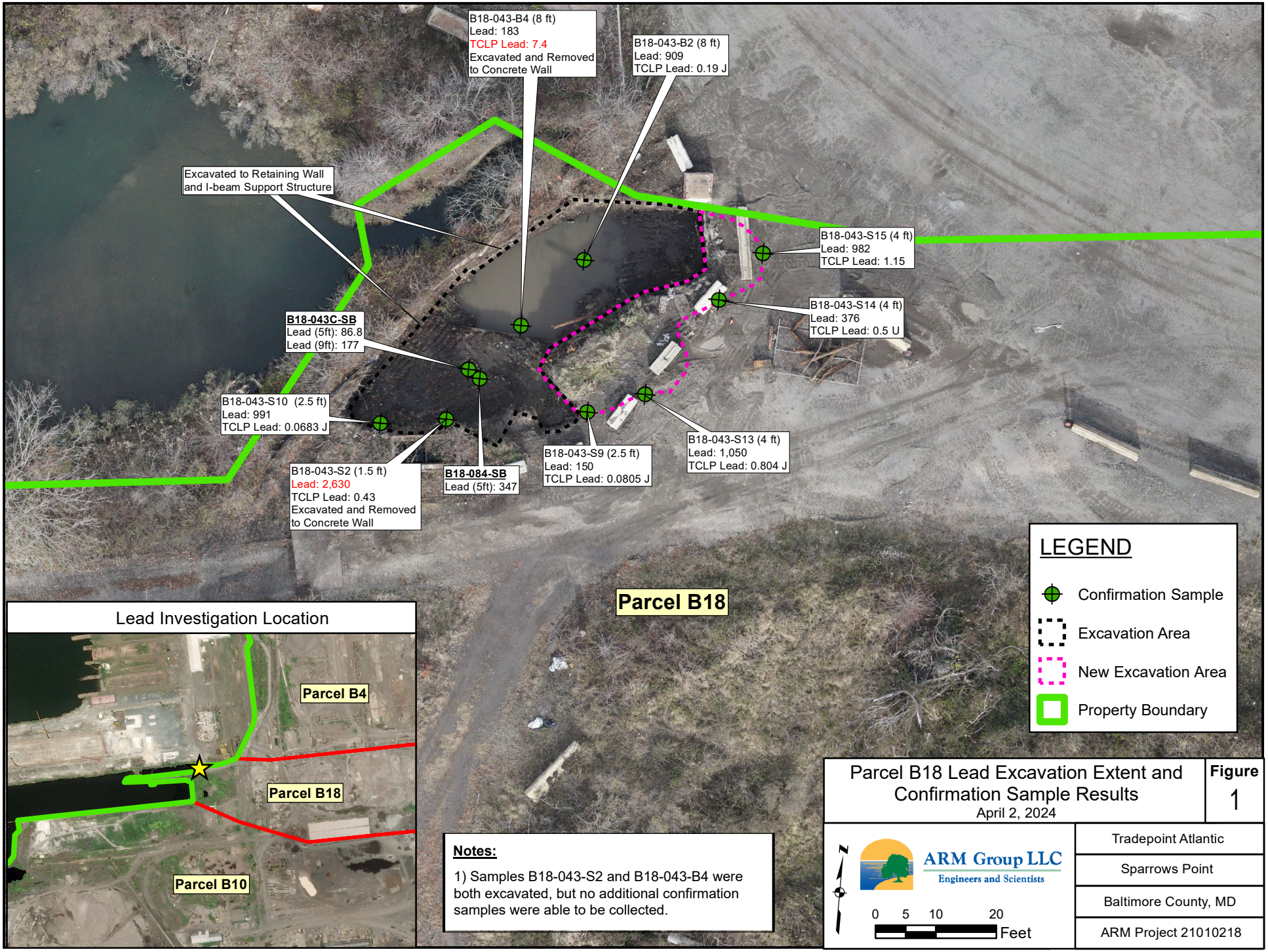
Kaye Guille, P.E., PMP
Senior Engineer

Attachments:
Figure 1: Parcel B18 Lead Excavation Extent and Confirmation Sample Results

Table 1: XRF Analysis Results
Table 2: Soil Excavation Confirmation Samples

Appendix A: Laboratory Reports
Appendix B: Propeller Aerial

FIGURES



P:\EnviroAnalytics Group\150300M EAG_Sparrows Point Area BGIS\Parcel B18 Lead Characterization - 02-23-24.mxd

Parcel B18 Lead Excavation Extent and Confirmation Sample Results

April 2, 2024

Figure 1

ARM Group LLC
Engineers and Scientists

Tradepoint Atlantic
Sparrows Point
Baltimore County, MD
ARM Project 21010218

TABLES

Table 1 - Parcel B18
XRF Analysis Results
Sparrows Point, Maryland

Sampling Depth	XRF Result (parts per million)					
Shallow (~1-2 feet bgs)	284	1,160	456	630	423	2,516
Middle (~3-5 feet bgs)	59	1,546	550	167	194	1,340
Deep (~6-7 feet bgs)	203	1,000	299	84	440	852
Sidewall Location	Southwest <----------> Northeast					
Corresponding Laboratory Sample (~4 feet bgs)		B18-043-S13		B18-043-S14		B18-043-S15

Table 2 - Parcel B18
Soil Excavation Confirmation Samples
Sparrows Point, Maryland

Sample Date	Location ID	Sample Location	Lead (mg/kg)	TCLP Lead (mg/L)
5/4/2018	B18-043C-SB-5	SW base (5 ft)	86.8	N/A
6/4/2020	B18-084-SB-5	SW base (5 ft)	347	N/A
5/10/2022	B18-043-B2	Base (8 ft)	909	0.19 J
5/10/2022	B18-043-S1	Sidewall (1.5 ft)	1,380	0.21 J
10/25/2023	B18-043-S9	Sidewall, SE expansion (2.5 ft)	150	0.0805 J
10/25/2023	B18-043-S10	Sidewall, SW expansion (2.5 ft)	991	0.0683 J
3/20/2024	B18-043-S13	Sidewall, NE corner (4 ft)	1,050	0.804 J
3/20/2024	B18-043-S14	Sidewall, east (4 ft)	376	0.5 U
3/20/2024	B18-043-S15	Sidewall, east (4 ft)	982	1.15

Value in red exceeds the TCLP Lead threshold of 5 mg/L

TCLP = Toxicity Characteristic Leaching Procedure
J: Estimated value. Concentration is below the quantitation limit but above the method detection limit.
U: Not detected at the method detection limit

APPENDIX A

ANALYTICAL REPORT

Lab Number:	L2363512
Client:	Tradepoint Atlantic 1600 Sparrows Point Boulevard Baltimore, MD 21219
ATTN:	Robert Tworkowski
Phone:	(443) 649-5073
Project Name:	B18 LEAD EXCAVATION
Project Number:	21010218
Report Date:	11/01/23

Certifications & Approvals: MA (M-MA086), NH NELAP (2064), CT (PH-0826), IL (200077), IN (C-MA-03), KY (KY98045), ME (MA00086), MD (348), NJ (MA935), NY (11148), NC (25700/666), OH (CL108), OR (MA-1316), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #525-23-122-91930).

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

Project Name: B18 LEAD EXCAVATION
Project Number: 21010218

Lab Number: L2363512
Report Date: 11/01/23

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2363512-01	B18-043-S8	SOIL	B18	10/25/23 08:50	10/25/23
L2363512-02	B18-043-S9	SOIL	B18	10/25/23 09:00	10/25/23
L2363512-03	B18-043-B4	SOIL	B18	10/25/23 09:10	10/25/23
L2363512-04	B18-043-S10	SOIL	B18	10/25/23 09:20	10/25/23

Project Name:	B18 LEAD EXCAVATION	**Lab Number:**	L2363512
Project Number:	21010218	**Report Date:**	11/01/23

Case Narrative

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

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

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

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

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

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

Project Name:	B18 LEAD EXCAVATION	**Lab Number:**	L2363512
Project Number:	21010218	**Report Date:**	11/01/23

Case Narrative (continued)

Report Submission

All non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the MDL column.

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

Authorized Signature: Michelle M. Morris

Title: Technical Director/Representative Date: 11/01/23

METALS

Project Name: B18 LEAD EXCAVATION
Lab Number: L2363512
Project Number: 21010218
Report Date: 11/01/23

SAMPLE RESULTS

Lab ID: L2363512-01
Client ID: B18-043-S8
Sample Location: B18
Date Collected: 10/25/23 08:50
Date Received: 10/25/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 80%
TCLP/SPLP Ext. Date: 10/27/23 14:58

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
TCLP Metals by EPA 1311 - Mansfield Lab											
Lead, TCLP	4.90		mg/l	0.500	0.0270	1	10/31/23 18:23	11/01/23 10:57	EPA 3015	1,6010D	DMB

Project Name: B18 LEAD EXCAVATION
Lab Number: L2363512
Project Number: 21010218
Report Date: 11/01/23

SAMPLE RESULTS

Lab ID: L2363512-01
Client ID: B18-043-S8
Sample Location: B18
Date Collected: 10/25/23 08:50
Date Received: 10/25/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 80%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	3310		mg/kg	2.46	0.132	1	10/31/23 00:40	10/31/23 21:07	EPA 3050B	1,6010D	MAM

Project Name: B18 LEAD EXCAVATION
Lab Number: L2363512
Project Number: 21010218
Report Date: 11/01/23

SAMPLE RESULTS

Lab ID: L2363512-02
Client ID: B18-043-S9
Sample Location: B18
Date Collected: 10/25/23 09:00
Date Received: 10/25/23
Field Prep: Not Specified
Sample Depth:
TCLP/SPLP Ext. Date: 10/27/23 14:58
Matrix: Soil
Percent Solids: 83%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
TCLP Metals by EPA 1311 - Mansfield Lab											
Lead, TCLP	0.0805	J	mg/l	0.500	0.0270	1	10/31/23 18:23	11/01/23 11:01	EPA 3015	1,6010D	DMB

Project Name: B18 LEAD EXCAVATION
Lab Number: L2363512
Project Number: 21010218
Report Date: 11/01/23

SAMPLE RESULTS

Lab ID: L2363512-02
Client ID: B18-043-S9
Sample Location: B18
Date Collected: 10/25/23 09:00
Date Received: 10/25/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 83%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	150		mg/kg	2.37	0.127	1	10/31/23 00:40	10/31/23 21:11	EPA 3050B	1,6010D	MAM

Project Name: B18 LEAD EXCAVATION
Lab Number: L2363512
Project Number: 21010218
Report Date: 11/01/23

SAMPLE RESULTS

Lab ID: L2363512-03
Client ID: B18-043-B4
Sample Location: B18
Date Collected: 10/25/23 09:10
Date Received: 10/25/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 54%
TCLP/SPLP Ext. Date: 10/27/23 14:58

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
TCLP Metals by EPA 1311 - Mansfield Lab											
Lead, TCLP	7.40		mg/l	0.500	0.0270	1	10/31/23 18:23	11/01/23 11:06	EPA 3015	1,6010D	DMB

Project Name: B18 LEAD EXCAVATION
Lab Number: L2363512
Project Number: 21010218
Report Date: 11/01/23

SAMPLE RESULTS

Lab ID: L2363512-03
Client ID: B18-043-B4
Sample Location: B18
Date Collected: 10/25/23 09:10
Date Received: 10/25/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 54%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	183		mg/kg	3.60	0.193	1	10/31/23 00:40	10/31/23 21:16	EPA 3050B	1,6010D	MAM

Project Name: B18 LEAD EXCAVATION
Lab Number: L2363512
Project Number: 21010218
Report Date: 11/01/23

SAMPLE RESULTS

Lab ID: L2363512-04
Client ID: B18-043-S10
Sample Location: B18
Date Collected: 10/25/23 09:20
Date Received: 10/25/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 86%
TCLP/SPLP Ext. Date: 10/27/23 14:58

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
TCLP Metals by EPA 1311 - Mansfield Lab											
Lead, TCLP	0.0683	J	mg/l	0.500	0.0270	1	10/31/23 18:23	11/01/23 11:10	EPA 3015	1,6010D	DMB

Project Name: B18 LEAD EXCAVATION
Lab Number: L2363512
Project Number: 21010218
Report Date: 11/01/23

SAMPLE RESULTS

Lab ID: L2363512-04
Client ID: B18-043-S10
Sample Location: B18
Date Collected: 10/25/23 09:20
Date Received: 10/25/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 86%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	991		mg/kg	2.27	0.121	1	10/31/23 00:40	10/31/23 21:20	EPA 3050B	1,6010D	MAM

Project Name: B18 LEAD EXCAVATION
Project Number: 21010218
Lab Number: L2363512
Report Date: 11/01/23

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01-04 Batch: WG1845174-1										
Lead, Total	ND		mg/kg	2.00	0.107	1	10/31/23 00:40	10/31/23 19:27	1,6010D	MAM

Prep Information

Digestion Method: EPA 3050B

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
TCLP Metals by EPA 1311 - Mansfield Lab for sample(s): 01-04 Batch: WG1845983-1										
Lead, TCLP	ND		mg/l	0.500	0.0270	1	10/31/23 18:23	11/01/23 09:47	1,6010D	DMB

Prep Information

Digestion Method: EPA 3015
TCLP/SPLP Extraction Date: 10/27/23 05:37

Lab Control Sample Analysis

Batch Quality Control

Project Name: B18 LEAD EXCAVATION

Project Number: 21010218

Lab Number: L2363512

Report Date: 11/01/23

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-04 Batch: WG1845174-2 SRM Lot Number: D119-540								
Lead, Total	97		-		82-118	-		
TCLP Metals by EPA 1311 - Mansfield Lab Associated sample(s): 01-04 Batch: WG1845983-2								
Lead, TCLP	100		-		75-125	-		20

Matrix Spike Analysis
Batch Quality Control

Project Name: B18 LEAD EXCAVATION
Project Number: 21010218

Lab Number: L2363512
Report Date: 11/01/23

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-04 QC Batch ID: WG1845174-3 QC Sample: L2363799-01 Client ID: MS Sample												
Lead, Total	41.8	46.5	100	125		-	-		75-125	-		20
TCLP Metals by EPA 1311 - Mansfield Lab Associated sample(s): 01-04 QC Batch ID: WG1845983-3 QC Sample: L2363774-06 Client ID: MS Sample												
Lead, TCLP	ND	5.3	5.25	99		-	-		75-125	-		20

Lab Duplicate Analysis

Batch Quality Control

Project Name: B18 LEAD EXCAVATION

Project Number: 21010218

Lab Number: L2363512

Report Date: 11/01/23

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-04 QC Batch ID: WG1845174-4 QC Sample: L2363799-01 Client ID: DUP Sample						
Lead, Total	41.8	52.7	mg/kg	**23**	Q	20
TCLP Metals by EPA 1311 - Mansfield Lab Associated sample(s): 01-04 QC Batch ID: WG1845983-4 QC Sample: L2363774-06 Client ID: DUP Sample						
Lead, TCLP	ND	ND	mg/l	NC		20

INORGANICS
&
MISCELLANEOUS

Project Name: B18 LEAD EXCAVATION
Project Number: 21010218
Lab Number: L2363512
Report Date: 11/01/23

SAMPLE RESULTS

Lab ID: L2363512-01
Client ID: B18-043-S8
Sample Location: B18
Sample Depth:
Matrix: Soil

Date Collected: 10/25/23 08:50
Date Received: 10/25/23
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	79.8		%	0.100	NA	1	-	10/27/23 11:21	121,2540G	ROI

Project Name: B18 LEAD EXCAVATION
Project Number: 21010218
Lab Number: L2363512
Report Date: 11/01/23

SAMPLE RESULTS

Lab ID: L2363512-02
Client ID: B18-043-S9
Sample Location: B18
Sample Depth:
Matrix: Soil

Date Collected: 10/25/23 09:00
Date Received: 10/25/23
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	83.0		%	0.100	NA	1	-	10/27/23 11:21	121,2540G	ROI

Project Name: B18 LEAD EXCAVATION
Project Number: 21010218
Lab Number: L2363512
Report Date: 11/01/23

SAMPLE RESULTS

Lab ID: L2363512-03
Client ID: B18-043-B4
Sample Location: B18
Sample Depth:
Matrix: Soil

Date Collected: 10/25/23 09:10
Date Received: 10/25/23
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	54.0		%	0.100	NA	1	-	10/27/23 11:21	121,2540G	ROI

Project Name: B18 LEAD EXCAVATION
Project Number: 21010218

Lab Number: L2363512
Report Date: 11/01/23

SAMPLE RESULTS

Lab ID: L2363512-04
Client ID: B18-043-S10
Sample Location: B18

Date Collected: 10/25/23 09:20
Date Received: 10/25/23
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	86.3		%	0.100	NA	1	-	10/27/23 11:21	121,2540G	ROI

Lab Duplicate Analysis

Batch Quality Control

Project Name: B18 LEAD EXCAVATION

Project Number: 21010218

Lab Number: L2363512

Report Date: 11/01/23

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01-04 QC Batch ID: WG1845101-1 QC Sample: L2363512-01 Client ID: B18-043-S8						
Solids, Total	79.8	80.0	%	0		20

Project Name: B18 LEAD EXCAVATION
Project Number: 21010218

Lab Number: L2363512
Report Date: 11/01/23

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2363512-01A	Glass 120ml/4oz unpreserved	A	NA		4.7	Y	Absent		PB-TI(180)
L2363512-01B	Glass 500ml/16oz unpreserved	A	NA		4.7	Y	Absent		TS(7)
L2363512-01X	Plastic 120ml HNO3 preserved Extracts	A	NA		4.7	Y	Absent		PB-CI(180)
L2363512-01X9	Tumble Vessel	A	NA		4.7	Y	Absent		-
L2363512-02A	Glass 120ml/4oz unpreserved	A	NA		4.7	Y	Absent		PB-TI(180)
L2363512-02B	Glass 500ml/16oz unpreserved	A	NA		4.7	Y	Absent		TS(7)
L2363512-02X	Plastic 120ml HNO3 preserved Extracts	A	NA		4.7	Y	Absent		PB-CI(180)
L2363512-02X9	Tumble Vessel	A	NA		4.7	Y	Absent		-
L2363512-03A	Glass 120ml/4oz unpreserved	A	NA		4.7	Y	Absent		PB-TI(180)
L2363512-03B	Glass 500ml/16oz unpreserved	A	NA		4.7	Y	Absent		TS(7)
L2363512-03X	Plastic 120ml HNO3 preserved Extracts	A	NA		4.7	Y	Absent		PB-CI(180)
L2363512-03X9	Tumble Vessel	A	NA		4.7	Y	Absent		-
L2363512-04A	Glass 120ml/4oz unpreserved	A	NA		4.7	Y	Absent		PB-TI(180)
L2363512-04B	Glass 500ml/16oz unpreserved	A	NA		4.7	Y	Absent		TS(7)
L2363512-04X	Plastic 120ml HNO3 preserved Extracts	A	NA		4.7	Y	Absent		PB-CI(180)
L2363512-04X9	Tumble Vessel	A	NA		4.7	Y	Absent		-

*Values in parentheses indicate holding time in days

Project Name:	B18 LEAD EXCAVATION	**Lab Number:**	L2363512
Project Number:	21010218	**Report Date:**	11/01/23

GLOSSARY

Acronyms

DL	- Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
EDL	- Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).
EMPC	- Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.
EPA	- Environmental Protection Agency.
LCS	- Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCSD	- Laboratory Control Sample Duplicate: Refer to LCS.
LFB	- Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LOD	- Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
LOQ	- Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.) Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
MDL	- Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
MS	- Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.
MSD	- Matrix Spike Sample Duplicate: Refer to MS.
NA	- Not Applicable.
NC	- Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
NDPA/DPA	- N-Nitrosodiphenylamine/Diphenylamine.
NI	- Not Ignitable.
NP	- Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.
NR	- No Results: Term is utilized when 'No Target Compounds Requested' is reported for the analysis of Volatile or Semivolatile Organic TIC only requests.
RL	- Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
RPD	- Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.
SRM	- Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.
STLP	- Semi-dynamic Tank Leaching Procedure per EPA Method 1315.
TEF	- Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.
TEQ	- Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.
TIC	- Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Report Format: DU Report with 'J' Qualifiers

Project Name:	B18 LEAD EXCAVATION	**Lab Number:**	L2363512
Project Number:	21010218	**Report Date:**	11/01/23

Footnotes

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

Terms

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

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

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

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

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

Gasoline Range Organics (GRO): Gasoline Range Organics (GRO) results include all chromatographic peaks eluting from Methyl tert butyl ether through Naphthalene, with the exception of GRO analysis in support of State of Ohio programs, which includes all chromatographic peaks eluting from Hexane through Dodecane.

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

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

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

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

Data Qualifiers

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

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

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

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

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

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

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

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

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

J - Estimated value. The Target analyte concentration is below the quantitation limit (RL), but above the Method Detection Limit (MDL) or Estimated Detection Limit (EDL) for SPME-related analyses. This represents an estimated concentration for Tentatively

Report Format: DU Report with 'J' Qualifiers

Project Name:	B18 LEAD EXCAVATION	**Lab Number:**	L2363512
Project Number:	21010218	**Report Date:**	11/01/23

Data Qualifiers

Identified Compounds (TICs). For calculated parameters, this represents that one or more values used in the calculation were estimated.

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

ND - Not detected at the method detection limit (MDL) for the sample, or estimated detection limit (EDL) for SPME-related analyses.

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

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

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

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

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

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

Project Name:	B18 LEAD EXCAVATION	**Lab Number:**	L2363512
Project Number:	21010218	**Report Date:**	11/01/23

REFERENCES

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

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

LIMITATION OF LIABILITIES

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

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

Certification Information

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

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

Mansfield Facility
SM 2540D: TSS.
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
Biological Tissue Matrix: EPA 3050B

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

Westborough Facility:

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

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

Mansfield Facility:

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

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

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

CHAIN OF CUSTODY

PAGE 1 OF 1

Date Rec'd in Lab: 10/26/23

ALPHA Job #: L2363512

ALPHA ANALYTICAL
WESTBORO, MA TEL: 508-898-9220 FAX: 508-898-9193
MANSFIELD, MA TEL: 508-822-9300 FAX: 508-822-3288

Client Information

Client: Tradepoint Atlantic
Address: 0995 Bethlehem Blvd
Sparrows Point, MD
Phone:
Fax:
Email: JBarna@armgroup.net
hguille@armgroup.net
☐ These samples have been previously analyzed by Alpha

Project Information

Project Name: B18 Lead Excavation
Project Location: B18
Project #: 21010218
Project Manager:
ALPHA Quote #:

Turn-Around Time

☐ Standard ☐ RUSH (only confirmed if pre-approved!)
Date Due: Time:

Report Information - Data Deliverables

☐ FAX ☐ EMAIL
☐ ADEx ☐ Add'l Deliverables

Billing Information

☐ Same as Client info PO #:

Regulatory Requirements/Report Limits

State /Fed Program	Criteria

Other Project Specific Requirements/Comments/Detection Limits:

~~B18-043-S8~~ SVL

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	ANALYSIS: Total Lead	ANALYSIS: TCLP Lead	Sample Specific Comments	TOTAL # BOTTLES
63512-01	B18-043-S8	10/25/23	0850	Soil	SVL	X	X		2
02	B18-043-S9	10/25/23	0900	Soil	SVL	X	X		2
03	B18-043-B4	10/25/23	0910	Soil	SVL	X	X	~~B18-043-S8~~ SVL	2
04	B18-043-S10	10/25/23	0920	Soil	SVL	X	X		2

SAMPLE HANDLING

Filtration
☐ Done
☐ Not needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

Container Type	A	A
Preservative	A	A

10/26/23 0300
10/26/23 0300

Relinquished By:	Date/Time	Received By:	Date/Time
Sarah Lowe ARM	10/25/23 1600		10/25/23 1645
	10/25/23 1800		10/25/23 1800
	10/25/23 2100	Anthony Green	OCT 25 2023 2100

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.

ANALYTICAL REPORT

Lab Number:	L2415161
Client:	Tradepoint Atlantic 1600 Sparrows Point Boulevard Baltimore, MD 21219
ATTN:	Robert Tworkowski
Phone:	(443) 649-5073
Project Name:	B18 LEAD EXCAVATION
Project Number:	21010218
Report Date:	03/28/24

Certifications & Approvals: MA (M-MA086), NH NELAP (2064), CT (PH-0826), IL (200077), IN (C-MA-03), KY (KY98045), ME (MA00086), MD (348), NJ (MA935), NY (11148), NC (25700/666), OH (CL108), OR (MA-1316), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #525-23-122-91930).

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

Project Name: B18 LEAD EXCAVATION
Project Number: 21010218

Lab Number: L2415161
Report Date: 03/28/24

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2415161-01	B18-043-S13	SOIL	B18	03/20/24 09:00	03/20/24
L2415161-02	B18-043-S14	SOIL	B18	03/20/24 09:30	03/20/24
L2415161-03	B18-043-S15	SOIL	B18	03/20/24 10:00	03/20/24

Project Name:	B18 LEAD EXCAVATION	**Lab Number:**	L2415161
Project Number:	21010218	**Report Date:**	03/28/24

Case Narrative

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

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

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

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

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

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

Project Name:	B18 LEAD EXCAVATION	**Lab Number:**	L2415161
Project Number:	21010218	**Report Date:**	03/28/24

Case Narrative (continued)

Report Submission

All non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the MDL column.

Total Metals

L2415161-01, -02, and -03: The sample has an elevated detection limit due to the dilution required by the sample matrix.

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

Authorized Signature: Melissa Sturgis Melissa Sturgis

Title: Technical Director/Representative Date: 03/28/24

METALS

Project Name: B18 LEAD EXCAVATION
Lab Number: L2415161
Project Number: 21010218
Report Date: 03/28/24

SAMPLE RESULTS

Lab ID: L2415161-01
Client ID: B18-043-S13
Sample Location: B18
Date Collected: 03/20/24 09:00
Date Received: 03/20/24
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 70%
TCLP/SPLP Ext. Date: 03/23/24 13:47

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
TCLP Metals by EPA 1311 - Mansfield Lab											
Lead, TCLP	0.0804	J	mg/l	0.500	0.0270	1	03/25/24 19:36	03/26/24 18:07	EPA 3015	1,6010D	DHL

Project Name: B18 LEAD EXCAVATION
Lab Number: L2415161
Project Number: 21010218
Report Date: 03/28/24

SAMPLE RESULTS

Lab ID: L2415161-01
Client ID: B18-043-S13
Sample Location: B18
Date Collected: 03/20/24 09:00
Date Received: 03/20/24
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 70%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	1050		mg/kg	10.8	0.580	4	03/25/24 19:42	03/27/24 21:00	EPA 3050B	1,6010D	DMC

Project Name: B18 LEAD EXCAVATION
Lab Number: L2415161
Project Number: 21010218
Report Date: 03/28/24

SAMPLE RESULTS

Lab ID: L2415161-02
Client ID: B18-043-S14
Sample Location: B18
Date Collected: 03/20/24 09:30
Date Received: 03/20/24
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 79%
TCLP/SPLP Ext. Date: 03/23/24 13:47

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
TCLP Metals by EPA 1311 - Mansfield Lab											
Lead, TCLP	ND		mg/l	0.500	0.0270	1	03/25/24 19:36	03/26/24 18:13	EPA 3015	1,6010D	DHL

Project Name: B18 LEAD EXCAVATION
Lab Number: L2415161
Project Number: 21010218
Report Date: 03/28/24

SAMPLE RESULTS

Lab ID: L2415161-02
Client ID: B18-043-S14
Sample Location: B18
Date Collected: 03/20/24 09:30
Date Received: 03/20/24
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 79%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	376		mg/kg	10.0	0.537	4	03/25/24 19:42	03/27/24 21:06	EPA 3050B	1,6010D	DMC

Project Name: B18 LEAD EXCAVATION
Lab Number: L2415161
Project Number: 21010218
Report Date: 03/28/24

SAMPLE RESULTS

Lab ID: L2415161-03
Client ID: B18-043-S15
Sample Location: B18
Date Collected: 03/20/24 10:00
Date Received: 03/20/24
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 86%
TCLP/SPLP Ext. Date: 03/23/24 13:47

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
TCLP Metals by EPA 1311 - Mansfield Lab											
Lead, TCLP	1.15		mg/l	0.500	0.0270	1	03/25/24 23:25	03/26/24 15:26	EPA 3015	1,6010D	DHL

Project Name: B18 LEAD EXCAVATION
Lab Number: L2415161
Project Number: 21010218
Report Date: 03/28/24

SAMPLE RESULTS

Lab ID: L2415161-03
Client ID: B18-043-S15
Sample Location: B18
Date Collected: 03/20/24 10:00
Date Received: 03/20/24
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 86%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Lead, Total	982		mg/kg	8.98	0.481	4	03/25/24 19:42	03/27/24 21:13	EPA 3050B	1,6010D	DMC

Project Name: B18 LEAD EXCAVATION **Lab Number:** L2415161

Project Number: 21010218 **Report Date:** 03/28/24

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
TCLP Metals by EPA 1311 - Mansfield Lab for sample(s): 01-02 Batch: WG1900500-1										
Lead, TCLP	ND		mg/l	0.500	0.0270	1	03/25/24 19:36	03/26/24 12:01	1,6010D	DMC

Prep Information

Digestion Method: EPA 3015

TCLP/SPLP Extraction Date: 03/22/24 17:43

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
TCLP Metals by EPA 1311 - Mansfield Lab for sample(s): 03 Batch: WG1900553-1										
Lead, TCLP	ND		mg/l	0.500	0.0270	1	03/25/24 23:25	03/26/24 10:25	1,6010D	DHL

Prep Information

Digestion Method: EPA 3015

TCLP/SPLP Extraction Date: 03/22/24 04:33

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01-03 Batch: WG1900627-1										
Lead, Total	ND		mg/kg	2.00	0.107	1	03/25/24 19:42	03/27/24 15:11	1,6010D	DMC

Prep Information

Digestion Method: EPA 3050B

Lab Control Sample Analysis

Batch Quality Control

Project Name: B18 LEAD EXCAVATION

Project Number: 21010218

Lab Number: L2415161

Report Date: 03/28/24

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
TCLP Metals by EPA 1311 - Mansfield Lab Associated sample(s): 01-02 Batch: WG1900500-2								
Lead, TCLP	95		-		75-125	-		20
TCLP Metals by EPA 1311 - Mansfield Lab Associated sample(s): 03 Batch: WG1900553-2								
Lead, TCLP	95		-		75-125	-		20
Total Metals - Mansfield Lab Associated sample(s): 01-03 Batch: WG1900627-2								
Lead, Total	106		-		81-117	-		

Matrix Spike Analysis
Batch Quality Control

Project Name: B18 LEAD EXCAVATION
Project Number: 21010218

Lab Number: L2415161
Report Date: 03/28/24

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
TCLP Metals by EPA 1311 - Mansfield Lab Associated sample(s): 01-02 QC Batch ID: WG1900500-3 QC Sample: L2415940-13 Client ID: MS Sample												
Lead, TCLP	0.449J	5.3	5.40	102		-	-		75-125	-		20
TCLP Metals by EPA 1311 - Mansfield Lab Associated sample(s): 03 QC Batch ID: WG1900553-3 QC Sample: L2414921-01 Client ID: MS Sample												
Lead, TCLP	ND	5.3	5.20	98		-	-		75-125	-		20
Total Metals - Mansfield Lab Associated sample(s): 01-03 QC Batch ID: WG1900627-3 QC Sample: L2415099-01 Client ID: MS Sample												
Lead, Total	3.86J	43.9	49.4	112		-	-		75-125	-		20

Lab Duplicate Analysis

Batch Quality Control

Project Name: B18 LEAD EXCAVATION
Project Number: 21010218

Lab Number: L2415161
Report Date: 03/28/24

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
TCLP Metals by EPA 1311 - Mansfield Lab Associated sample(s): 01-02 QC Batch ID: WG1900500-4 QC Sample: L2415940-13 Client ID: DUP Sample						
Lead, TCLP	0.449J	0.422J	mg/l	NC		20
TCLP Metals by EPA 1311 - Mansfield Lab Associated sample(s): 03 QC Batch ID: WG1900553-4 QC Sample: L2414921-01 Client ID: DUP Sample						
Lead, TCLP	ND	ND	mg/l	NC		20
Total Metals - Mansfield Lab Associated sample(s): 01-03 QC Batch ID: WG1900627-4 QC Sample: L2415099-01 Client ID: DUP Sample						
Lead, Total	3.86J	3.84J	mg/kg	NC		20

INORGANICS
&
MISCELLANEOUS

Project Name: B18 LEAD EXCAVATION
Project Number: 21010218
Lab Number: L2415161
Report Date: 03/28/24

SAMPLE RESULTS

Lab ID: L2415161-01
Client ID: B18-043-S13
Sample Location: B18
Sample Depth:
Matrix: Soil

Date Collected: 03/20/24 09:00
Date Received: 03/20/24
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	69.8		%	0.100	NA	1	-	03/22/24 18:35	121,2540G	SJB

Project Name: B18 LEAD EXCAVATION
Project Number: 21010218
Lab Number: L2415161
Report Date: 03/28/24

SAMPLE RESULTS

Lab ID: L2415161-02
Client ID: B18-043-S14
Sample Location: B18
Sample Depth:
Matrix: Soil

Date Collected: 03/20/24 09:30
Date Received: 03/20/24
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	78.7		%	0.100	NA	1	-	03/22/24 18:35	121,2540G	SJB

Project Name: B18 LEAD EXCAVATION
Project Number: 21010218
Lab Number: L2415161
Report Date: 03/28/24

SAMPLE RESULTS

Lab ID: L2415161-03
Client ID: B18-043-S15
Sample Location: B18
Sample Depth:
Matrix: Soil

Date Collected: 03/20/24 10:00
Date Received: 03/20/24
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	85.5		%	0.100	NA	1	-	03/22/24 18:35	121,2540G	SJB

Lab Duplicate Analysis

Batch Quality Control

Project Name: B18 LEAD EXCAVATION

Project Number: 21010218

Lab Number: L2415161

Report Date: 03/28/24

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01-03 QC Batch ID: WG1899756-1 QC Sample: L2415161-01 Client ID: B18-043-S13						
Solids, Total	69.8	70.3	%	1		20

Project Name: B18 LEAD EXCAVATION
Project Number: 21010218

Lab Number: L2415161
Report Date: 03/28/24

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2415161-01A	Glass 120ml/4oz unpreserved	A	NA		2.3	Y	Absent		PB-TI(180)
L2415161-01B	Glass 500ml/16oz unpreserved	A	NA		2.3	Y	Absent		TS(7)
L2415161-01X	Plastic 120ml HNO3 preserved Extracts	A	NA		2.3	Y	Absent		PB-CI(180)
L2415161-01X9	Tumble Vessel	A	NA		2.3	Y	Absent		-
L2415161-02A	Glass 120ml/4oz unpreserved	A	NA		2.3	Y	Absent		PB-TI(180)
L2415161-02B	Glass 500ml/16oz unpreserved	A	NA		2.3	Y	Absent		TS(7)
L2415161-02X	Plastic 120ml HNO3 preserved Extracts	A	NA		2.3	Y	Absent		PB-CI(180)
L2415161-02X9	Tumble Vessel	A	NA		2.3	Y	Absent		-
L2415161-03A	Glass 120ml/4oz unpreserved	A	NA		2.3	Y	Absent		PB-TI(180)
L2415161-03B	Glass 500ml/16oz unpreserved	A	NA		2.3	Y	Absent		TS(7)
L2415161-03X	Plastic 120ml HNO3 preserved Extracts	A	NA		2.3	Y	Absent		PB-CI(180)
L2415161-03X9	Tumble Vessel	A	NA		2.3	Y	Absent		-

*Values in parentheses indicate holding time in days

Project Name:	B18 LEAD EXCAVATION	**Lab Number:**	L2415161
Project Number:	21010218	**Report Date:**	03/28/24

GLOSSARY

Acronyms

DL	- Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
EDL	- Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).
EMPC	- Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.
EPA	- Environmental Protection Agency.
LCS	- Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCSD	- Laboratory Control Sample Duplicate: Refer to LCS.
LFB	- Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LOD	- Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
LOQ	- Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.) Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
MDL	- Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
MS	- Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.
MSD	- Matrix Spike Sample Duplicate: Refer to MS.
NA	- Not Applicable.
NC	- Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
NDPA/DPA	- N-Nitrosodiphenylamine/Diphenylamine.
NI	- Not Ignitable.
NP	- Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.
NR	- No Results: Term is utilized when 'No Target Compounds Requested' is reported for the analysis of Volatile or Semivolatile Organic TIC only requests.
RL	- Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
RPD	- Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.
SRM	- Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.
STLP	- Semi-dynamic Tank Leaching Procedure per EPA Method 1315.
TEF	- Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.
TEQ	- Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.
TIC	- Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Report Format: DU Report with 'J' Qualifiers

Project Name:	B18 LEAD EXCAVATION	**Lab Number:**	L2415161
Project Number:	21010218	**Report Date:**	03/28/24

Footnotes

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

Terms

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

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

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

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

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

Gasoline Range Organics (GRO): Gasoline Range Organics (GRO) results include all chromatographic peaks eluting from Methyl tert butyl ether through Naphthalene, with the exception of GRO analysis in support of State of Ohio programs, which includes all chromatographic peaks eluting from Hexane through Dodecane.

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

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

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

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

Data Qualifiers

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

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

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

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

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

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

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

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

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

J - Estimated value. The Target analyte concentration is below the quantitation limit (RL), but above the Method Detection Limit (MDL) or Estimated Detection Limit (EDL) for SPME-related analyses. This represents an estimated concentration for Tentatively

Report Format: DU Report with 'J' Qualifiers

Project Name:	B18 LEAD EXCAVATION	**Lab Number:**	L2415161
Project Number:	21010218	**Report Date:**	03/28/24

Data Qualifiers

Identified Compounds (TICs). For calculated parameters, this represents that one or more values used in the calculation were estimated.

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

ND - Not detected at the method detection limit (MDL) for the sample, or estimated detection limit (EDL) for SPME-related analyses.

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

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

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

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

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

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

Project Name:	B18 LEAD EXCAVATION	**Lab Number:**	L2415161
Project Number:	21010218	**Report Date:**	03/28/24

REFERENCES

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

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

LIMITATION OF LIABILITIES

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

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

Certification Information

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

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

Mansfield Facility
SM 2540D: TSS.
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
Biological Tissue Matrix: EPA 3050B

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

Westborough Facility:

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

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

Mansfield Facility:

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

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

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

CHAIN OF CUSTODY

PAGE 1 OF 1

ALPHA ANALYTICAL
WESTBORO, MA TEL: 508-898-9220 FAX: 508-898-9193
MANSFIELD, MA TEL: 508-822-9300 FAX: 508-822-3288

Date Rec'd in Lab: 3/21/24

ALPHA Job #: L2415161

Client Information

Client: Tradepoint Atlantic
Address: 6995 Bethlehem Blvd
Sparrows Point MD
Phone:
Fax:
Email: JBarna@armygroup.net
KSmith@armygroup.net

☐ These samples have been previously analyzed by Alpha

Project Information

Project Name: B18 lead excavation
Project Location: B18
Project #: 21010218
Project Manager:
ALPHA Quote #:

Turn-Around Time

☑ Standard ☐ RUSH (only confirmed if pre-approved!)
Date Due: 5 day Time:

Report Information - Data Deliverables

☐ FAX ☐ EMAIL
☐ ADEx ☐ Add'l Deliverables

Billing Information

☐ Same as Client info PO #:

Regulatory Requirements/Report Limits

State /Fed Program	Criteria

Other Project Specific Requirements/Comments/Detection Limits:

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	ANALYSIS: lead	ANALYSIS: tclp lead	SAMPLE HANDLING	Sample Specific Comments	TOTAL # BOTTLES
415161	B18-043-S13	3/20/24	0900	Soil	JMB	x	x			2
-02	B18-043-S14	3/20/24	0930	Soil	JMB	x	x			2
-03	B18-043-S15	3/20/24	1000	Soil	JMB	x	x			2

SAMPLE HANDLING
Filtration
☐ Done ☐ Not needed ☐ Lab to do
Preservation
☐ Lab to do (Please specify below)

Container Type																			
Preservative																			

Relinquished By:	Date/Time	Received By:	Date/Time
JMB Barna ARM	3/20/24 1400	Rachel PACE	3/20/24 1403
Rachel PACE	3/20/24 1800		3/20/24 1800
Anthony Green	3/20/24 2100	Anthony Green	MAR 20 2024 2114
	3/21/24 0020		3/21/24 0020

3/21/24 0230
3/21/24 0230

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.

FORM NO: 01-01 (rev. 14-OCT-07)

APPENDIX B

LEGEND

100ftus

TRADEPOINT ATLANTIC

Site: TPA Quad 02-NW

Survey: 08 Apr 2024 - SW Coke Point

File created: Apr 10, 2024

propeller