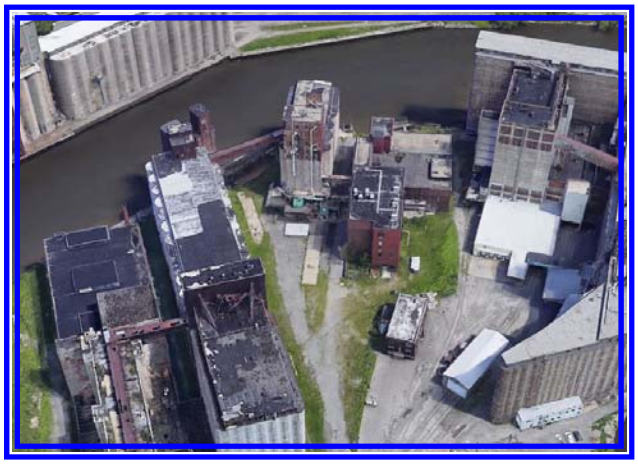
Phase II Environmental Investigation

145 BUFFALO RIVER SITE
BUFFALO, NEW YORK

October 2019 B0474-019-001

Prepared For:

Generation Development Group



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PHASE II ENVIRONMENTAL INVESTIGATION REPORT

145 BUFFALO RIVER SITE

BUFFALO, NEW YORK

October 2019 B0474-019-001

Prepared for:

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PHASE II ENVIRONMENTAL INVESTIGATION REPORT

145 BUFFALO RIVER
BUFFALO, NEW YORK

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

APPENDICES

1.0 INTRODUCTION

1.1 Background and Site Description

Benchmark Environmental Engineering & Science, PLLC (Benchmark) performed a Phase II Environmental Investigation on behalf of Generation Development Group at 145 Buffalo River in the City of Buffalo, Erie County, New York (Site).

The Site is located in a highly developed industrial and commercial area of the City of Buffalo (see Figure 1). The Site is supplied with municipal sanitary sewer, electric, natural-gas and public water.

The Site consists of one parcel totaling 3.24-acres. The Site is currently developed with two vacant buildings. Building 1 is a historic grain silo/elevator and Building 2 is a historic grain processing and warehouse facility.

Information relative to the specific parcel subject to this investigation is further described in the table below (see Figure 2):

Parcel Address	Size (acres)	Tax ID No.	Current Use
145 Buffalo River	3.24	122.14-3-3	Vacant industrial

As further detailed below, Benchmark completed a Phase I Environmental Site Assessment (ESA) for the Site.

1.2 Previous Study

Benchmark completed a Phase I ESA for the Site dated August 2019. The following provides a summary of historic Site uses identified through Benchmark's review of historic sources including Sanborn maps, city directories, regulatory documents, municipal records and a previous Phase I by others.

Approximate Years	Reported or Suspected Use	Owner/Occupant
At least 1900 through prior to 1998	Industrial. Historic operations include flour/grain storage, and warehousing within Building 1 and malting and grain germination processes and warehousing within Building 2. Additional operations historically included shipment and transportation of materials, railroad tracks, and a coal house. Municipal records dated 1941 and 1952 identified one 2,700-gallon fuel oil tank (apparently an aboveground storage tank, AST) located on the first floor, encased in a	Past owners/occupants: Riverwright LLC, Conagra Inc., Conagra/Maple Leaf Milling, Peavey Co., Peavey Mills, Peavey Milling Co., F.R. Peavey & Co., Perot Malting Co. Inc., Perot Milling Co., Francis Perot Malting Co., Francis Perot Sons Co., American Malting

	brick wall and covered with sand on the west side of the malt house of the Perot Malting facility; Benchmark suspects, but could not confirm, that this tank was located on-Site. However, Benchmark observed no visual evidence of a tank on-Site at the time of the site reconnaissance. Additional municipal records presumably associated with the greater property/operation indicate use of a dip tank for washing of machine parts with kerosene in 1941 and the installation of a 550-gallon gasoline underground storage tank (UST) in 1955. Such may have been located off-site; however, due to the lack of information in municipal records, the locations of the dip tank and UST are unknown.	Co., Genesee Brewery, Russell Miller, Russell Miller Milling Co., Russel Miller Co., and American Elevator.
Prior to 1998 to current	Vacant industrial.	Current owner: Riversullivan Inc.

Benchmark's assessment revealed the following recognized environmental conditions (RECs) in connection with the Site:

- The long history of on-Site industrial operations including grain silos/elevators and grain milling/malting with various associated equipment/materials, including electrical equipment and transformers (most of which have been removed), floor drains, sumps/pits (at least one equipment pit currently contains liquid), unknown piping, railroad tracks (spurs remain on-Site) and the reasonably anticipated historic use and storage of hazardous/regulated materials.
- Various regulatory listings were identified for the greater property/operation of which the Site was a part.
- Municipal records associated with the greater property/operation indicate environmental concerns. Specifically, records dated 1941 and 1952 associated with a 2,700-gallon fuel oil tank (apparently an AST) encased in brick and covered with sand were identified for the Perot Malting facility (suspected site) on the west side of the malt house. Additional records associated with a dip tank for washing of machine parts with kerosene in 1941 and installation of a 550-gallon gasoline UST in 1955 were identified; due to the lack of information in municipal records, the locations of the dip tank and UST are unknown and Benchmark is unsure if these records involve the Site.
- Apparent fill material from unknown origins was observed during the site reconnaissance.

In consideration of the RECs detailed above, this Phase II was completed to assess subsurface soil/fill and groundwater conditions at the Site.

2.0 SITE INVESTIGATION ACTIVITIES

2.1 Soil Boring Investigation

Benchmark's subcontractor, TREC Environmental, Inc. (TREC), mobilized a 6620 DT Geoprobe direct-push drill rig equipped with a two-inch diameter, 48-inch long macro-core sampler to assess subsurface exterior conditions. Figure 2 shows 13 exterior soil borings designated as SB-1 through SB-13 completed across the Site on September 11, 2019. Soil borings were advance to target depths between 8 feet below ground surface (fbgs) and 12 fbgs.

The physical characteristics of all soil borings were classified using the ASTM D2488 Visual-Manual Procedure Description. Soil/fill from each soil boring was screened via headspace screening using a MiniRae 2000 Photoionization Detector (PID). Visual and/or olfactory observations, if any, were noted. All field observations, including lithology, depths, PID scan results, etc., at each investigation location are summarized on the soil boring logs included in Appendix A. Photographs taken during the work are included in Appendix B.

A total of ten soil/fill samples (SB-1, SB-2, SB-3/3W, SB-4, SB-5, SB-6/6W, SB-7 though SB-9, and SB-10/10W) were selected during the Phase II activities for laboratory analysis of polycyclic aromatic hydrocarbons (PAHs), Resource Conservation and Recovery Act (RCRA) metals, cyanide, and/or polychlorinated biphenyls (PCBs). Based on initial analytical results, additional laboratory analyses such as Toxicity Characteristic Leaching Procedure (TCLP) arsenic and cyanide reactivity were performed on certain soil/fill samples, as further detailed in Section 3.3. The soil/fill samples collected as part of the investigation were transported under chain-of custody command for analysis to Alpha Analytical (Alpha) in Westborough, MA. Samples were collected in laboratory provided sample jars and cooled to 4 °C prior to transport.

2.2 Groundwater Sampling

Three soil borings (SB-3/3W, SB-6/6W, and SB-10/10W) were converted into temporary one-inch diameter monitoring wells. The temporary wells were installed using one-inch diameter Schedule 40 PVC well screen and riser. Groundwater grab samples were collected from the temporary wells using a dedicated and disposable 0.5" polyethylene bailer subsequent to purging a minimum of three well volumes from each well. The temporary

wells were manually decommissioned (pulled) following groundwater sampling activities. The resulting open annulus was backfilled with Site soils.

One water grab sample identified as MP-1 was taken from machine pits located within the southern portion of Building 1. The grab sample was collected from the machine pits using a dedicated and disposable 0.5" polyethylene bailer.

The groundwater samples and water grab sample from the machine pits were placed in pre-cleaned laboratory provided sample bottles, cooled to 4 °C in the field, and transported under chain-of-custody to Alpha for analysis of Target Compound List (TCL) plus New York State Department of Environmental Conservation (NYSDEC) Commissioner Policy-51 (CP-51) volatile organic compounds (VOCs).

3.0 INVESTIGATION FINDINGS

3.1 Site Geology/Hydrogeology

The overburden geology observed during the soil boring investigation is generally described as non-native fill materials or sands at depths ranging between 1.3 fbgs and 6.5 fbgs overlying native sandy lean clay and/or fine sands with clay up to 12 fbgs (see the Soil Boring Logs provided in Appendix A). Fill materials encountered during this investigation generally consisted of gravel and/or sand with black granular material mixed with cinders, brick, concrete, coal, and/or ash. Fill materials encountered in certain investigation locations (i.e., SB-6/6W, SB-8, SB-11, and SB-13) consisted of medium grained light-brown and white sands with blue staining. The source of the blue staining is unknown; however, in Benchmark's experience, blue staining may be indicative of cyanide-containing materials. As further detailed below, laboratory analysis was expanded to include cyanide analysis at certain borings where field observations indicated blue stained soil/fill.

Groundwater was encountered during the drilling work at all soil boring investigation locations at depths ranging from 5 fbgs to 8 fbgs.

Groundwater flow is likely to the north toward the Buffalo River, which is located adjacent to the Site. Local groundwater flow, however, may be influenced by subsurface features, such as excavations, utilities, and localized fill-conditions.

3.2 Field Observations

Soil samples from the soil boring investigation were observed and scanned via headspace screening for volatile organics using a PID. A description of the field observations during the soil boring investigation is presented below:

Investigation Location ID	Environmental Concern Assessed	Highest PID reading (parts per million, ppm) and depth (fbgs)	Other Observations
SB-1	Former railroad tracks.	No PID readings above background (0.0 ppm) were identified during the work.	Fill to 1.3 fbgs.
SB-2	Former adjacent transformer house.		Fill to 3.3 fbgs. Black granular fill observed.
SB-3/3W	Existing switch house on east adjacent property.		Fill to 4.8 fbgs. Black granular fill observed.
SB-4	Former on-Site building location.		Fill to 6 fbgs. Black granular fill observed.
SB-5	Location of metal pipe of unknown nature.		Fill to 6.5 fbgs. Black granular fill observed.
SB-6/6W	Former transformer house on the west adjacent property.		Fill to 3 fbgs.
SB-7	Existing railroad tracks and fill material.		Fill to 3.5 fbgs.
SB-8			Fill to 6 fbgs. Blue staining and waxy texture observed from 3-5 fbgs.
SB-9			Fill to 3.5 fbgs. Black granular fill observed.
SB-10/10W	General Site conditions on down-gradient side of Site.		Fill to 4 fbgs.
SB-11	Delineation of SB-8 area (due to blue stained soils observed in the field).		Fill to 6 fbgs. Blue staining and waxy texture observed from 2-4 fbgs.
SB-12			Fill to 6 fbgs.
SB-13			Fill to 6 fbgs. Minor blue staining observed.

3.3 Soil Analytical Results

Table 1 presents a summary of the Phase II laboratory analytical results. For comparative purposes, Table 1 includes 6NYCRR Part 375 Unrestricted Use Soil Cleanup Objectives (USCOs), Commercial SCOs (CSCOs), and Industrial SCOs (ISCOs).

As summarized on Table 1, PAHs were identified at concentrations exceeding USCOs, CSCOs and ISCOs at SB-6 and SB-9.

Metals exceeding USCOs, CSCOs and/or ISCOs were identified in five of six soil/fill samples from across the Site. Specifically, arsenic was identified at concentrations exceeding its ISCO at SB-2 (112 milligrams per kilogram, mg/kg), SB-3/3W (57.4 mg/kg), SB-6/6W (55.4 mg/kg), SB-8 (19.3 mg/kg), and SB-9 (60 mg/kg). Mercury was identified at a concentration exceeding its CSCO at SB-3/3W (3.48 mg/kg). Cyanide was detected in both fill samples where blue staining was observed during the fieldwork at SB-6/6W and SB-8; the highest concentration of 98 mg/kg, identified at SB-8, exceeds its respective CSCO (27

mg/kg) but is below its ISCO (10,000 mg/kg). The cyanide concentration of 24 mg/kg at SB-6 was below its respective USCO.

PCBs were detected at concentrations above laboratory detection limits in all ten soil/fill samples collected across the Site. The highest PCB concentration of 1.09 mg/kg at SB-9 slightly exceeds its respective CSCO (1 mg/kg) but is well below its respective ISCO (25 mg/kg). PCB concentrations at SB-4, SB-6/6W, and SB-10/10W exceed their respective USCO but not its respective CSCO. The remaining PCB concentrations did not exceed their respective USCO.

Due to the high total arsenic concentrations, further analysis of arsenic by TCLP was completed on the two highest total arsenic concentrations from SB-2 and SB-9. Table 2 presents a summary of the TCLP arsenic analytical results with comparison to 40 CFR 261 TCLP Regulatory Levels. As summarized on Table 2, TCLP arsenic concentrations are significantly below the Characteristic Hazardous Waste Threshold of 5 milligrams per liter (mg/L) at SB-2 (0.114 mg/L) and SB-9 (non-detect). Therefore, fill material at SB-2 and SB-9 is not characteristically hazardous for arsenic.

Due to the elevated cyanide concentration at SB-8 above its CSCO, this sample was further analyzed for cyanide reactivity; based on the laboratory analytical report, as summarized on Table 3, cyanide reactivity was not identified at a concentration above the laboratory detection limit; therefore, the fill at SB-8 is not characteristically hazardous for cyanide. The laboratory also ran the SB-8 soil/fill sample for sulfide reactivity and identified an estimated concentration of 11 mg/kg (see Table 3). There is no clear regulatory comparison criteria/maximum concentration for a sulfide reactivity concentration that deems a material characteristically hazardous[1]; however, Benchmark consulted a local disposal facility, Waste Management, and they indicated that the sulfide results are within the limits for non-hazardous disposal at their Chaffee Landfill.

Appendix C contains a copy of the laboratory analytical data packages.

[1] Part 371 Hazardous Waste regulations indicate a sulfide-bearing waste is considered hazardous when it can generate toxic gases, vapors or fumes in a quantity sufficient to present a danger to human health or the environment.

3.4 Groundwater Analytical Results

Groundwater sample analytical results are summarized on Table 4 with comparison to Class GA Groundwater Quality Standards (GWQS) per NYSDEC Technical and Operational Guidance Series (TOGS 1.1.1). A copy of the complete laboratory analytical data package is included in Appendix C.

As indicated on Table 4, VOCs were not detected at concentrations above laboratory detection limits except for acetone, which slightly exceeds its GWQS of 50 micrograms per liter (ug/L) at SB-10/10W with a concentration of 120 ug/L. Acetone concentrations at the machine pit and other well locations were below GWQS. Acetone is a common laboratory artifact; therefore, the acetone concentrations identified are likely not indicative of Site conditions.

4.0 CONCLUSIONS AND RECOMMENDATIONS

Based on the results of the Phase II Environmental Investigation at the Site, Benchmark offers the following conclusions and recommendations:

- No olfactory concerns or PID readings above background (0.0 ppm) were identified during the work.
- Fill materials were noted at all borings generally to depths ranging between 1.3 fbgs and 6.5 fbgs. Fill materials generally consisted of gravel and/or sand with black granular material mixed with cinders, brick, concrete, coal, and/or ash. In addition, fill materials at certain investigation locations (SB-8, SB-11 and SB-13) consisted of sands with blue staining. The source of the staining is unknown; however, in Benchmark's experience, blue staining may be indicative of cyanide-containing materials; therefore, as further detailed below, laboratory analysis was expanded to include cyanide at certain borings where field observations indicated blue stained soil.
- The following provides a summary of soil/fill laboratory analytical results:
    - One individual PAH, benzo(a)pyrene, exceeded its ISCOs in soil/fill at two borings (SB-6/6W and SB-9). Several additional PAHs at SB-6/6W and SB-9 exceed their respective USCOs but not CSCOs. The individual PAH concentrations are elevated but total PAH concentrations generally fall within levels that are typical of an urban environment.
    - PCBs were detected at concentrations above laboratory detection limits in all ten soil/fill samples collected across the Site. The highest PCB concentration of 1.09 mg/kg at SB-9 slightly exceeds its respective CSCO (1 mg/kg) but is well below its respective ISCO (25 mg/kg). PCB concentrations at SB-4, SB-6/6W, and SB-10/10W exceed their respective USCO but not their respective CSCO. The remaining PCB concentrations did not exceed their respective USCO.
    - Regarding metals, concentrations exceeding USCOs, CSCOs and/or ISCOs were identified in five of six soil/fill samples from across the Site. Specifically, arsenic was identified at concentrations exceeding its ISCO at SB-2 (112 milligrams/kilograms), SB-3/3W (57.4 mg/kg), SB-6/6W (55.4 mg/kg), SB-8 (19.3 mg/kg), and SB-9 (60 mg/kg). Mercury was identified at a concentration exceeding its CSCO at SB-3/3W (3.48 mg/kg). Cyanide was detected in both fill samples where blue staining was observed during the fieldwork at SB-6/6W and SB-8; the highest concentration of 98 mg/kg, which exceeds its respective CSCO (27 mg/kg) but is below its ISCO (10,000 mg/kg), was identified at SB-8. The cyanide concentration of 24 mg/kg at SB-6 was below its respective USCO.

- Due to the elevated arsenic concentrations of 112 mg/kg at SB-2 and 60 mg/kg at SB-9, concentrations that are well above the Industrial SCOs and outside of those typically found in urban fill, these fill samples were also analyzed for arsenic by TCLP. Laboratory analytical results indicate that fill material at SB-2 and SB-9 is not characteristically hazardous for arsenic as TCLP arsenic concentrations are either non-detect or at concentrations significantly below the Characteristic Hazardous Waste Threshold of 5 mg/L at SB-2 (0.114 mg/L and SB-9 (non-detect).
- Due to the elevated cyanide concentration at SB-8 above its CSCO, this fill sample was further analyzed for cyanide reactivity; based on the laboratory analytical report, cyanide reactivity was not identified at a concentration above the laboratory detection limit; therefore, the fill at SB-8 is not characteristically hazardous for cyanide. The laboratory also ran the SB-8 soil/fill sample for sulfide reactivity and they identified an estimated concentration of 11 mg/kg. There is no clear regulatory comparison criteria/maximum concentration for a sulfide reactivity concentration that deems a material characteristically hazardous; however, Benchmark consulted a local disposal facility, Waste Management, and they indicated that the sulfide results are within the limits for non-hazardous disposal at their Chaffee Landfill.

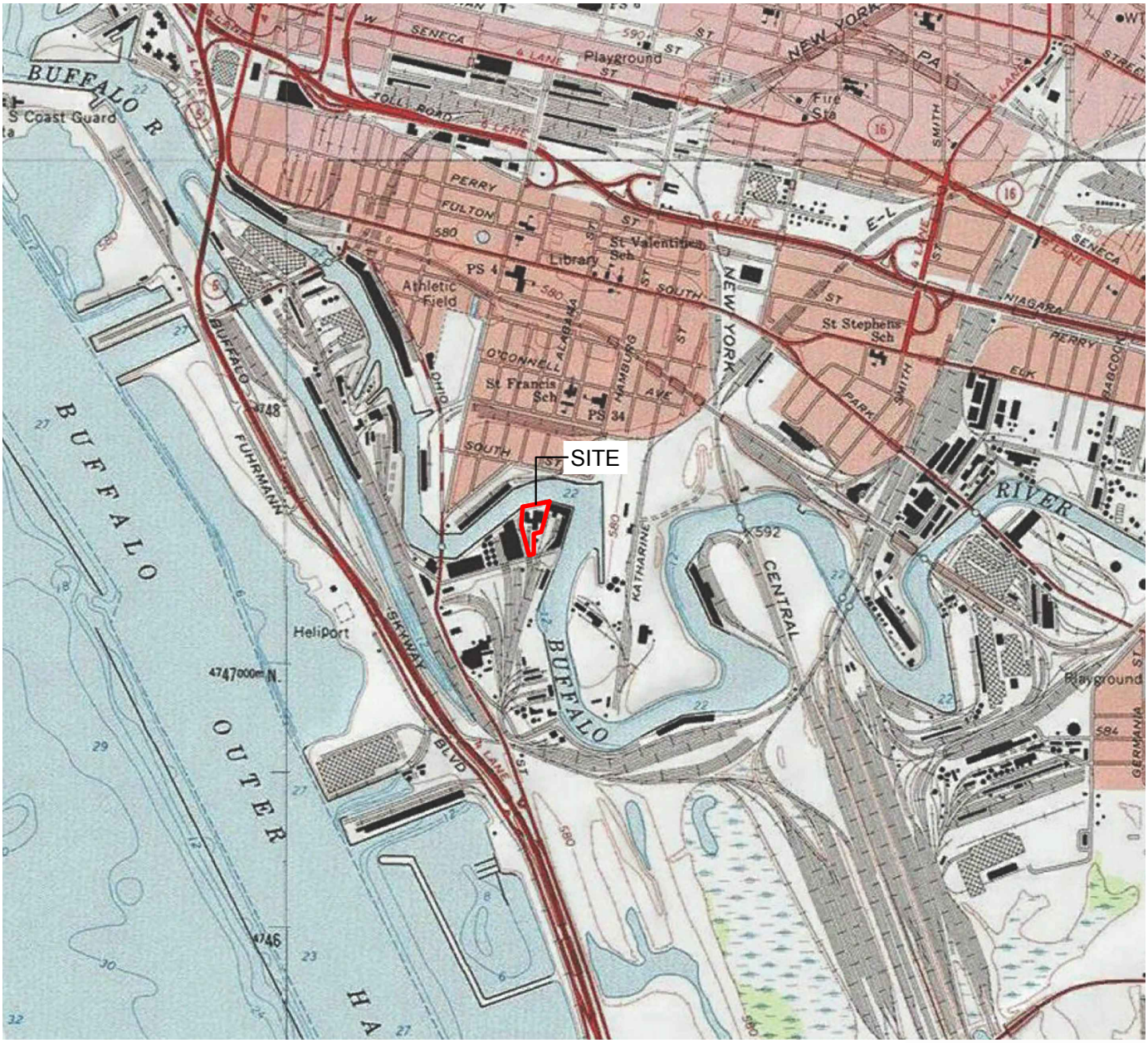
- The following provides a summary of groundwater laboratory analytical results:
  - VOCs in groundwater from three temporary monitoring wells and a machine pit were not detected at concentrations above laboratory detection limits except for acetone, which slightly exceeds its GWQS of 50 ug/L at SB-10/10W with a concentration of 120 ug/L. Acetone concentrations at the machine pit and the other well locations were below GWQS. Acetone is a common laboratory artifact; therefore, the acetone concentrations identified in groundwater are likely not indicative of Site conditions.
- We understand the property is being considered for redevelopment. Based on the findings detailed above, the Site is a potential candidate for the New York Brownfield Cleanup Program (BCP). At a minimum, regardless of whether the BCP is pursued, remediation work appears warranted in the SB-2 Arsenic Area due to the elevated total arsenic concentration identified. Further, impacted fill present on other portions of the Site will require exposure control, remediation and/or proper soil management either prior to or during the redevelopment project.

5.0 LIMITATIONS

This report has been prepared for the exclusive use of Generation Development Group. The contents of this report are limited to information available at the time of the Site investigation activities and to data referenced herein, and assume all referenced historic information sources to be true and accurate. The findings herein may be relied upon only at the discretion of Generation Development Group. Use of or reliance on this report or its findings by any other person or entity is prohibited without written permission of Benchmark Environmental Engineering & Science, PLLC.

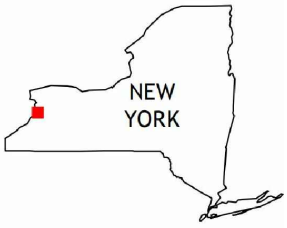
FIGURES

FIGURE 1



2000' 0' 2000' 4000'

SCALE: 1 INCH = 2000 FEET
SCALE IN FEET
(approximate)



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DRAFTED BY: CMS

SITE LOCATION AND VICINITY MAP

PHASE II ENVIRONMENTAL SITE INVESTIGATION

145 BUFFALO RIVER
BUFFALO, NEW YORK

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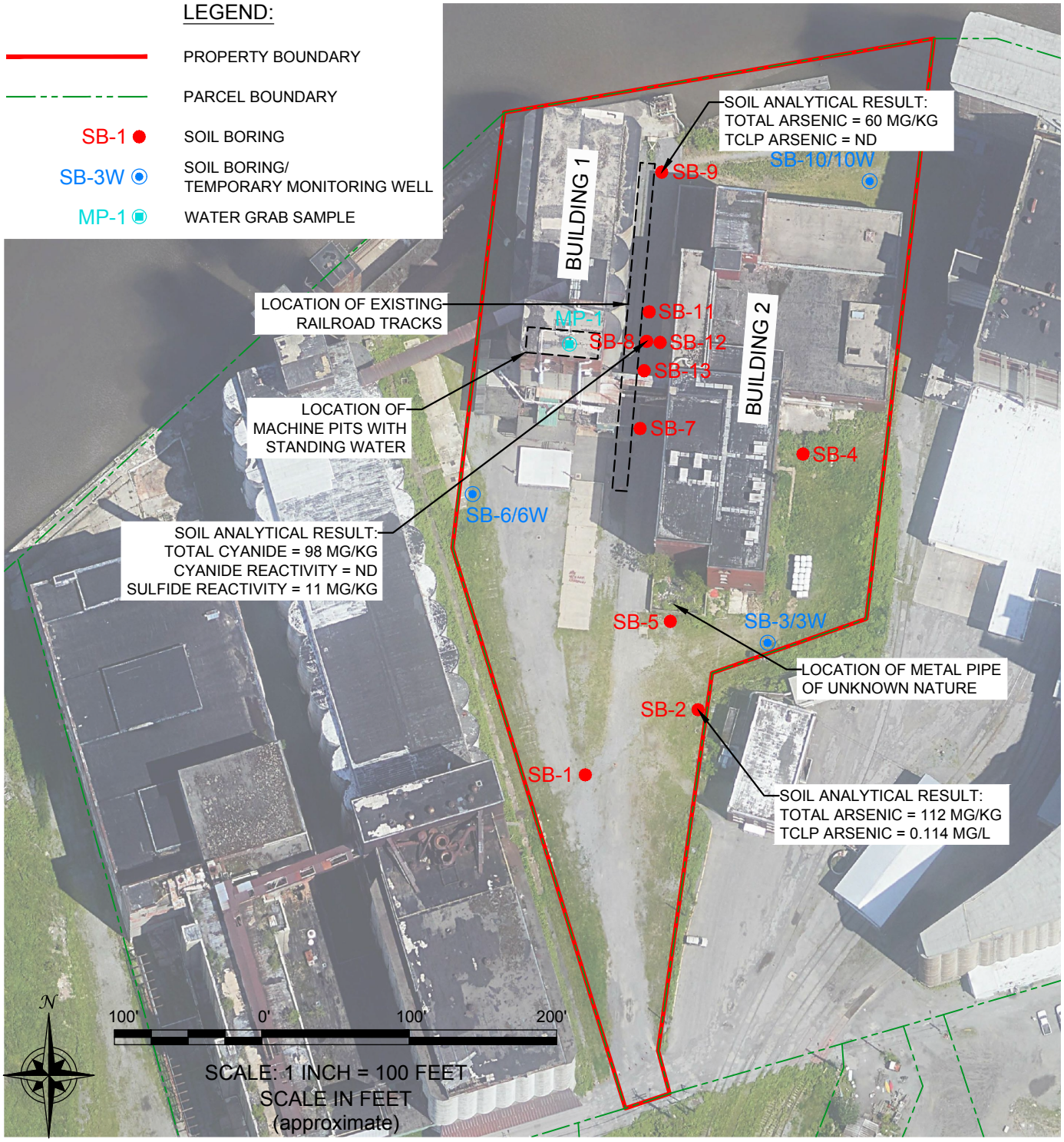
FIGURE 2



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INVESTIGATION LOCATIONS

PHASE II ENVIRONMENTAL SITE INVESTIGATION

145 BUFFALO RIVER
BUFFALO, NEW YORK

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TABLES

BENCHMARK ENVIRONMENTAL ENGINEERING & SCIENCE, PLLC

TABLE 1

SUMMARY OF SUBSURFACE SOIL/FILL SAMPLE ANALYTICAL RESULTS

PHASE II ENVIRONMENTAL INVESTIGATION REPORT

145 BUFFALO RIVER

BUFFALO, NEW YORK

PARAMETER[1]	Unrestricted Use SCOs [2]	Commercial Use SCOs [2]	Industrial Use SCOs [2]	Sample Location (Depth - ft)									
				SB-1 (2-4')	SB-2 (1-3')	SB-3/3W (2-4)	SB-4 (2-5')	SB-5 (3-5')	SB-6/6W (1-4')	SB-7 (2-4')	SB-8 (3-6')	SB-9 (1-3')	SB-10/10W (2-4')
				2/5/2019									
Polycyclic Aromatic Hydrocarbons (PAHs) - mg/Kg [3]													
Acenaphthene	**20**	**500**	**1000**	--	0.022 J	0.21	0.2	--	0.75	--	ND	0.24	--
Acenaphthylene	**100**	**500**	**1000**	--	ND	ND	ND	--	0.14 J	--	ND	0.065 J	--
Anthracene	**100**	**500**	**1000**	--	0.062 J	0.35	0.35	--	1.6	--	ND	0.54	--
Benzo(a)anthracene	**1**	**5.6**	**11**	--	0.19	0.72	0.7	--	**3.7**	--	0.084 J	**1.3**	--
Benzo(a)pyrene	**1**	**1**	**1.1**	--	0.16	0.65	0.64	--	**2.9**	--	0.083 J	**1.2**	--
Benzo(b)fluoranthene	**1**	**5.6**	**11**	--	0.21	0.8	0.79	--	**4.1**	--	0.14 J	**1.6**	--
Benzo(ghi)perylene	**100**	**500**	**1000**	--	0.091 J	0.34	0.32	--	1.3	--	0.061 J	0.72	--
Benzo(k)fluoranthene	**0.8**	**56**	**110**	--	0.073 J	0.3	0.29	--	**1.4**	--	ND	0.47	--
Chrysene	**1**	**56**	**110**	--	0.17	0.67	0.67	--	**3.4**	--	0.12 J	**1.3**	--
Dibenzo(a,h)anthracene	**0.33**	**0.56**	**1.1**	--	0.024 J	0.088 J	0.089 J	--	**0.46**	--	ND	0.18	--
Fluoranthene	**100**	**500**	**1000**	--	0.36	1.6	1.5	--	6.8	--	0.18 J	3.2	--
Fluorene	**30**	**500**	**1000**	--	0.022 J	0.23	0.22	--	0.93	--	ND	0.26	--
Indeno(1,2,3-cd)pyrene	**0.5**	**5.6**	**11**	--	0.1 J	0.36	0.35	--	**1.6**	--	0.055 J	**0.76**	--
Phenanthrene	**100**	**500**	**1000**	--	0.26	1.5	1.5	--	5.7	--	0.11 J	2.4	--
Pyrene	**100**	**500**	**1000**	--	0.29	1.3	1.2	--	5.3	--	0.14 J	2.5	--
Total PAHs	**--**	**--**	**--**	--	2.034 J	9.118 J	8.819 J	--	40.08 J	--	0.973 J	16.735 J	--
Metals - mg/Kg													
Arsenic	**13**	**16**	**16**	--	**112**	**57.4**	1.68	--	**55.4**	--	**19.3**	**60**	--
Barium	**350**	**400**	**10000**	--	114	216	39.7	--	166	--	101	215	--
Cadmium	**2.5**	**9.3**	**60**	--	1.64	1.05	0.291 J	--	**2.83**	--	ND	0.558	--
Chromium	**30**	**1500**	**6800**	--	12.4	17.1	4.04	--	6.24	--	1.74	8.21	--
Lead	**63**	**1000**	**3900**	--	**271**	**932**	17.5	--	**163**	--	1.55 J	**190**	--
Mercury	**0.18**	**2.8**	**5.7**	--	**1.78**	**3.48**	0.167	--	**0.237**	--	ND	**0.398**	--
Selenium	**3.9**	**1500**	**6800**	--	0.848	0.63 J	0.136 J	--	1.32	--	3.57	1.61	--
Silver	**2**	**1500**	**6800**	--	0.319	0.536	ND	--	ND	--	0.222 J	0.281 J	--
Cyanide - Total	**27**	**27**	**10000**	--	--	--	--	--	24	--	**98**	--	--
Polychlorinated biphenyls (PCBs) - mg/Kg												D	
Aroclor 1248	**0.1**	**1**	**25**	ND	ND	ND	**0.181**	ND	ND	ND	ND	ND	ND
Aroclor 1254	**0.1**	**1**	**25**	ND	ND	ND	0.0732	ND	ND	ND	ND	ND	0.0346 J
Aroclor 1260	**0.1**	**1**	**25**	ND	0.0188 J	ND	**0.128**	ND	ND	ND	ND	ND	0.061
Aroclor 1268	**0.1**	**1**	**25**	0.016 J	0.0217 J	0.0112 J	0.0474	0.0197 J	**0.211**	0.0103 J	0.00713 J	**1.09**	**0.111**
Total PCBs	**0.1**	**1**	**25**	0.016 J	0.0405 J	0.0112 J	**0.4296**	0.0197 J	**0.211**	0.0103 J	0.00713 J	**1.09**	**0.2066**

Notes:

1. Only those parameters detected at a minimum of one sample location are presented in this table; other compounds were reported as non-detect.
2. Values per NYSDEC Part 375 Soil Cleanup Objectives (SCOs).
3. Sample results were reported by the laboratory in ug/kg and converted to mg/kg for comparisons to SCOs.

Definitions:

ND = Parameter not detected above laboratory detection limit.
"--" = No value available for the parameter; Parameter not analyzed for.
J = Estimated value; result is less than the sample quantitation limit but greater than zero.
D = Compounds were identified in an analysis at the secondary dilution factor.

Bold	= Result exceeds Unrestricted Use SCOs.
Bold	= Result exceeds Commercial Use SCOs.
Bold	= Result exceeds Industrial use SCOs.

BENCHMARK ENVIRONMENTAL ENGINEERING & SCIENCE, PLLC

TABLE 2

SUMMARY OF TOTAL AND TOXICITY CHARACTERISTIC LEACHING PROCEDURE (TCLP) ARSENIC ANALYTICAL RESULTS
PHASE II ENVIRONMENTAL INVESTIGATION REPORT

145 BUFFALO RIVER
BUFFALO, NEW YORK

PARAMETER	Industrial Use SCOs[1] (mg/kg)	Characteristic Hazardous Waste Threshold[2] (mg/L)	Sample Location (Depth - ft)	
			SB-2 (1-3')	SB-9 (1-3')
			9/11/2019	
Total Arsenic - mg/Kg				
Arsenic	**16**	**--**	**112**	**60**
TCLP Arsenic - mg/L				
Arsenic	**--**	**5**	0.114 J	ND

Notes:

1. Values per 6NYCRR Part 375 Soil Cleanup Objectives (SCOs).
2. Values per 40 CFR 261, Appendix II, 1993 ed., as amended by 71 FR 40259, July 14, 2006.

Definitions:

J = Estimated value; result is less than the sample quantitation limit but greater than zero.

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TABLE 3

SUMMARY OF TOTAL CYANIDE
AND REACTIVITY ANALYTICAL RESULTS
PHASE II ENVIRONMENTAL INVESTIGATION REPORT

145 BUFFALO RIVER
BUFFALO, NEW YORK

PARAMETER	Commercial Use SCOs[1]	Sample Location (Depth - ft)
		SB-8 (3-6')
		9/11/2019
Total Cyanide - mg/Kg		
Cyanide	**27**	**98**
Reactivity - mg/Kg		
Cyanide	**--**	ND
Sulfide	**--**	11 J

Notes:

1. Values per 6NYCRR Part 375 Soil Cleanup Objectives (SCOs).
2. Values per 40 CFR 261, Appendix II, 1993 ed., as amended by 71 FR 40259, July 14, 2006.

Definitions:

J = Estimated value; result is less than the sample quantitation limit but greater than zero.

Bold = Result exceeds Commercial Use SCO.

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TABLE 4

SUMMARY OF GROUNDWATER ANALYTICAL RESULTS
PHASE II ENVIRONMENTAL INVESTIGATION REPORT
145 BUFFALO RIVER
BUFFALO, NEW YORK

PARAMETER[1]	GWQS[2]	Sample Location			
		MP-1	SB-3/3W	SB-6/6W	SB-10/10W
		9/11/2019			
Volatile Organic Compounds (VOCs) - ug/L					
Acetone	**50**	12	3.8 J	8.9	**120**

Notes:
1. Only those parameters detected at a minimum of one sample location are presented in this table; all other compounds were reported as non-detect.
2. Values per NYSDEC Division of Water Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations - Class GA (TOGS 1.1.1)

Definitions:
J = Estimated Value - Below calibration range.

APPENDIX A

SOIL BORING LOGS

Project No: B0474-019-001

Borehole Number: SB-1

Project: Phase II

A.K.A.:

Client: Generation Development Group

Logged By: CMS

Site Location: 145 Buffalo River

Checked By: BWM

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Buffalo, NY 14218
(716) 856-0599

SUBSURFACE PROFILE			SAMPLE						
Depth (fbgs)	Elev. /Depth	Description (ASTM D2488: Visual-Manual Procedure)	Sample No.	SPT N-Value	Recovery (%)	Symbol	PID VOCs ppm (0 / 12.5 / 25)	Lab Sample	Well Completion Details or Remarks
0.0	0.0	Ground Surface							
	0.0	***Gravel*** Black, moist, most sub-angular gravel, some fine sand, no odor.					0.0		
	-1.3 / 1.3	***Native - Well Graded Sand*** Light brown, moist, mostly medium grained sand, some silt, no odor.	1		48%		0.0	Sample Location	
	-3.3 / 3.3	White to grey, moist to wet at 6 fbgs, mostly medium grained sand, some silt, no odor					0.0		
5.0			2		10%		0.0		Water Level
							0.0		
							0.0		
							0.0		
10.0			3		10%		0.0		
							0.0		
							0.0		
	-12.0 / 12.0	End of Borehole					0.0		

Drilled By: Trec Environmental
Drill Rig Type: 6620 DT
Drill Method: Direct Push
Comments:
Drill Date(s): 9/11/19

Hole Size: 2"
Stick-up:
Datum:

Sheet: 1 of 1

Project No: B0474-019-001

Borehole Number: SB-2

Project: Phase II

A.K.A.:

Client: Generation Development Group

Logged By: CMS

Site Location: 145 Buffalo River

Checked By: BWM

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Buffalo, NY 14218
(716) 856-0599

SUBSURFACE PROFILE			SAMPLE						
Depth (fbgs)	Elev. /Depth	Description (ASTM D2488: Visual-Manual Procedure)	Sample No.	SPT N-Value	Recovery (%)	Symbol	PID VOCs ppm (0 / 12.5 / 25)	Lab Sample	Well Completion Details or Remarks
0.0	0.0	Ground Surface							
	0.0	***Gravel***							
		Fill - Black Granular Black, moist, mostly granular fines,some brick, some white sand, trace coal, no odor.	1		42%		0.0 / 0.0 / 0.0	Sample Location	
	-3.3 / 3.3	***Native - Sandy Lean Clay*** Brown, moist, mostly medium plastic fines, some fine sand, medium toughness, medium density, no odor.					0.0		
	-4.0 / 4.0	***Native - Well Graded Sand with Clay*** Brown to dark brown, moist to wet at 5 fbgs, mostly fine sand, some medium plastic fines, no odor.	2		19%		0.0 / 0.0 / 0.0		Water Level
5.0									
			3		100%		0.0 / 0.0 / 0.0 / 0.0		
10.0									
	-12.0 / 12.0	End of Borehole					0.0		

Drilled By: Trec Environmental
Drill Rig Type: 6620 DT
Drill Method: Direct Push
Comments:
Drill Date(s): 9/11/19

Hole Size: 2"
Stick-up:
Datum:

Sheet: 1 of 1

Project No: B0474-019-001

Borehole Number: SB-3

Project: Phase II

A.K.A.: SB-3W

Client: Generation Development Group

Logged By: CMS

Site Location: 145 Buffalo River

Checked By: BWM

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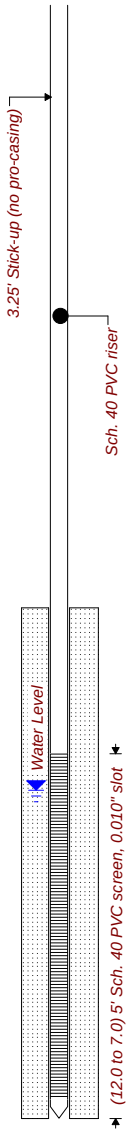
SUBSURFACE PROFILE			SAMPLE						
Depth (fbgs)	Elev. /Depth	Description (ASTM D2488: Visual-Manual Procedure)	Sample No.	SPT N-Value	Recovery (%)	Symbol	PID VOCs ppm (0 / 12.5 / 25)	Lab Sample	Well Completion Details or Remarks
-3.0									
	0.0	Ground Surface							
	0.0	***Gravel***							
		Fill - Black Granular Black, moist, mostly granular fines, trace brick, some medium plastic fines, some coal, no odor.							
2.0			1		67%		0.0 / 0.0 / 0.0 / 0.0	Sample Location	
	-2.5 / 2.5	White powdery lens from 2.5 to 2.8 fbgs.							
	-4.8 / 4.8	***Native - Well Graded Sand*** Brown, moist to wet at 7.5 fbgs, mostly fine sand, some medium plastic fines, no odor.							
7.0			2		48%		0.0 / 0.0 / 0.0 / 0.0		
			3		88%		0.0 / 0.0 / 0.0 / 0.0		
12.0	-12.0 / 12.0	End of Borehole							



Drilled By: Trec Environmental
Drill Rig Type: 6620 DT
Drill Method: Direct Push
Comments:
Drill Date(s): 9/11/19

Hole Size: 2"
Stick-up: 38.5"
Datum:

Sheet: 1 of 1

Project No: B0474-019-001

Borehole Number: SB-4

Project: Phase II

A.K.A.:

Client: Generation Development Group

Logged By: CMS

Site Location: 145 Buffalo River

Checked By: BWM

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SUBSURFACE PROFILE			SAMPLE						
Depth (fbgs)	Elev. /Depth	Description (ASTM D2488: Visual-Manual Procedure)	Sample No.	SPT N-Value	Recovery (%)	Symbol	PID VOCs ppm (0 / 12.5 / 25)	Lab Sample	Well Completion Details or Remarks
0.0	0.0	Ground Surface							
	0.0	***Topsoil***					0.0		
	-1.0 / 1.0	***Fill - Black Granular*** Black, moist, mostly granular fines and white ash, some brick, some white sand, trace coal, no odor.	1		46%		0.0	Sample Location	
	-4.0 / 4.0	***Fill - Well Graded Sand*** Dark brown, moist, mostly fine sand, trace medium plastic fines, some non-descript material in soil matrix, no odor.					0.0		
5.0							0.0		
	-6.0 / 6.0	***Native - Well Graded Sand with Clay*** Brown to dark brown, moist to wet at 8 fbgs, mostly fine sand, some medium plastic fines, no odor.	2		46%		0.0		Water Level
							0.0		
							0.0		
10.0			3		88%		0.0		
							0.0		
	-12.0 / 12.0	End of Borehole					0.0		

Drilled By: Trec Environmental
Drill Rig Type: 6620 DT
Drill Method: Direct Push
Comments:
Drill Date(s): 9/11/19

Hole Size: 2"
Stick-up:
Datum:

Sheet: 1 of 1

Project No: B0474-019-001

Borehole Number: SB-5

Project: Phase II

A.K.A.:

Client: Generation Development Group

Logged By: CMS

Site Location: 145 Buffalo River

Checked By: BWM

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SUBSURFACE PROFILE			SAMPLE						
Depth (fbgs)	Elev. /Depth	Description (ASTM D2488: Visual-Manual Procedure)	Sample No.	SPT N-Value	Recovery (%)	Symbol	PID VOCs ppm (0 / 12.5 / 25)	Lab Sample	Well Completion Details or Remarks
0.0	0.0	Ground Surface							
	0.0	***Gravel and Topsoil***							
	-1.0 / 1.0	***Fill - Black Granular*** Black, moist, mostly granular fines, some white ash, some red fine sand, no odor.	1		38%		0.0 / 0.0 / 0.0 / 0.0	Sample Location	
5.0	-5.5 / 5.5	***Fill - Well Graded Sand*** Red, moist, mostly fine sand, no odor.	2		67%		0.0 / 0.0 / 0.0 / 0.0		Water Level
	-6.5 / 6.5	***Native - Sandy Lean Clay*** Dark brown, moist to wet at 8 fbgs, mostly medium plastic fines, some fine sand, medium toughness, medium density, no odor.	3		25%		0.0 / 0.0 / 0.0 / 0.0		
10.0	-12.0 / 12.0	End of Borehole							

Drilled By: Trec Environmental
Drill Rig Type: 6620 DT
Drill Method: Direct Push
Comments:
Drill Date(s): 9/11/19

Hole Size: 2"
Stick-up:
Datum:

Sheet: 1 of 1

Project No: B0474-019-001

Borehole Number: SB-6

Project: Phase II

A.K.A.: SB-6W

Client: Generation Development Group

Logged By: CMS

Site Location: 145 Buffalo River

Checked By: BWM

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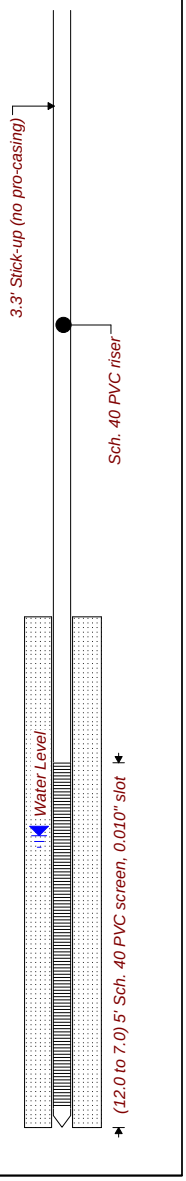
SUBSURFACE PROFILE			SAMPLE						
Depth (fbgs)	Elev. /Depth	Description (ASTM D2488: Visual-Manual Procedure)	Sample No.	SPT N-Value	Recovery (%)	Symbol	PID VOCs ppm (0 / 12.5 / 25)	Lab Sample	Well Completion Details or Remarks
-3.0									
	0.0	Ground Surface							
	0.0	***Topsoil***							
		Fill - Well Graded Sand Black to white and tan, moist, mostly medium grained sand, no odor.							
2.0			1		60%		0.0 / 0.0 / 0.0 / 0.0	Sample Location	
	-2.5								
	2.5	Blue and white, moist, mostly medium grained sand, no odor.							
	-3.0								
	3.0	***Native - Well Graded Sand with Clay*** Greyish brown to reddish brown, moist to wet at 8 fbgs, mostly fine sand, some medium plastic fines, no odor.							
7.0			2		91%		0.0 / 0.0 / 0.0 / 0.0		
			3		96%		0.0 / 0.0 / 0.0 / 0.0		
12.0	-12.0								
	12.0	End of Borehole							



Drilled By: Trec Environmental
Drill Rig Type: 6620 DT
Drill Method: Direct Push
Comments:
Drill Date(s): 9/11/19

Hole Size: 2"
Stick-up: 39.5"
Datum:

Sheet: 1 of 1

Project No: B0474-019-001

Borehole Number: SB-7

Project: Phase II

A.K.A.:

Client: Generation Development Group

Logged By: CMS

Site Location: 145 Buffalo River

Checked By: BWM

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SUBSURFACE PROFILE			SAMPLE						
Depth (fbgs)	Elev. /Depth	Description (ASTM D2488: Visual-Manual Procedure)	Sample No.	SPT N-Value	Recovery (%)	Symbol	PID VOCs ppm (0 – 12.5 – 25)	Lab Sample	Well Completion Details or Remarks
0.0	0.0	Ground Surface							
	0.0	***Asphalt and Subbase***							
	-0.8 / 0.8	***Fill - Poorly Graded Sand*** Dark brown, moist, mostly medium grained sand, some angular gravel, some coal, pocket of well graded sand from 3-4 fbgs, no odor.	1		65%		0.0 / 0.0 / 0.0 / 0.0	Sample Location	
	-3.5 / 3.5	***Native - Well Graded Sand*** Light brown, moist, mostly fine sand, no odor.							
5.0	-5.0 / 5.0	***Native - Sandy Lean Clay*** Brown to dark brown, moist to wet at 8 fbgs, mostly medium plastic fines, some fine sand, medium density, medium toughness, no odor.	2		48%		0.0 / 0.0 / 0.0 / 0.0		▼ Water Level
10.0			3		25%		0.0 / 0.0 / 0.0 / 0.0		
	-12.0 / 12.0	End of Borehole							

Drilled By: Trec Environmental
Drill Rig Type: 6620 DT
Drill Method: Direct Push
Comments:
Drill Date(s): 9/11/19

Hole Size: 2"
Stick-up:
Datum:

Sheet: 1 of 1

Project No: B0474-019-001

Borehole Number: SB-8

Project: Phase II

A.K.A.:

Client: Generation Development Group

Logged By: CMS

Site Location: 145 Buffalo River

Checked By: BWM

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SUBSURFACE PROFILE			SAMPLE						
Depth (fbgs)	Elev. /Depth	Description (ASTM D2488: Visual-Manual Procedure)	Sample No.	SPT N-Value	Recovery (%)	Symbol	PID VOCs ppm (0 / 12.5 / 25)	Lab Sample	Well Completion Details or Remarks
0.0	0.0	Ground Surface							
	0.0	***Asphalt and Subbase***							
	-0.5 / 0.5	***Fill - Poorly Graded Sand*** Black, moist, mostly medium grained sand, no odor.					0.0		
	-1.5 / 1.5	***Fill - Poorly Graded Sand*** Reddish brown to light brown/white, moist, mostly medium and fine grained sand, no odor.	1		92%		0.0		
							0.0		
	-4.0 / 4.0	Blue stained sand, waxy texture from 3 to 5 fbgs					0.0	Sample Location	
5.0							0.0		
	-6.0 / 6.0	***Native - Well Graded Sand with Clay*** Brown, moist to wet at 7 fbgs, mostly fine sand, some medium plastic fines, no odor.	2		58%		0.0		Water Level
							0.0		
							0.0		
10.0			3		69%		0.0		
							0.0		
	-12.0 / 12.0	End of Borehole					0.0		

Drilled By: Trec Environmental
Drill Rig Type: 6620 DT
Drill Method: Direct Push
Comments:
Drill Date(s): 9/11/19

Hole Size: 2"
Stick-up:
Datum:

Sheet: 1 of 1

Project No: B0474-019-001

Borehole Number: SB-9

Project: Phase II

A.K.A.:

Client: Generation Development Group

Logged By: CMS

Site Location: 145 Buffalo River

Checked By: BWM

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SUBSURFACE PROFILE			SAMPLE						
Depth (fbgs)	Elev. /Depth	Description (ASTM D2488: Visual-Manual Procedure)	Sample No.	SPT N-Value	Recovery (%)	Symbol	PID VOCs ppm (0 / 12.5 / 25)	Lab Sample	Well Completion Details or Remarks
0.0	0.0	Ground Surface							
	0.0	***Asphalt and Subbase***							
	-0.8 / 0.8	***Fill - Black Granular*** Black, moist, mostly medium grained fines, some coal, no odor. White powdery lens from 1 to 1.5 fbgs.	1		48%		0.0 / 0.0 / 0.0	Sample Location	
	-3.5 / 3.5	***Native - Poorly Graded Sand with Clay*** Dark brown, moist to wet at 6 fbgs, mostly fine sand, some medium plastic fines, no odor.	2		71%		0.0 / 0.0 / 0.0		Water Level
5.0			3		83%		0.0 / 0.0 / 0.0		
10.0	-12.0 / 12.0	End of Borehole							

Drilled By: Trec Environmental
Drill Rig Type: 6620 DT
Drill Method: Direct Push
Comments:
Drill Date(s): 9/11/19

Hole Size: 2"
Stick-up:
Datum:

Sheet: 1 of 1

Project No: B0474-019-001

Borehole Number: SB-10

Project: Phase II

A.K.A.: SB-10W

Client: Generation Development Group

Logged By: CMS

Site Location: 145 Buffalo River

Checked By: BWM

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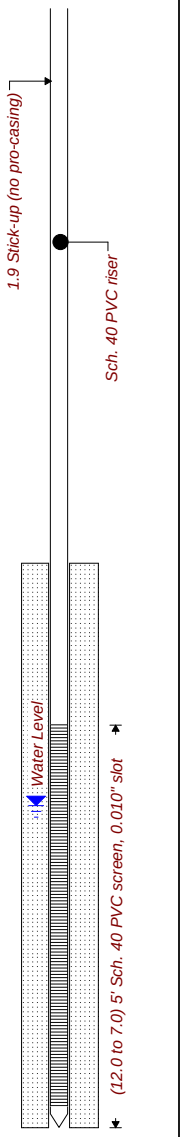
SUBSURFACE PROFILE			SAMPLE						
Depth (fbgs)	Elev. /Depth	Description (ASTM D2488: Visual-Manual Procedure)	Sample No.	SPT N-Value	Recovery (%)	Symbol	PID VOCs ppm (0 / 12.5 / 25)	Lab Sample	Well Completion Details or Remarks
-2.0									
	0.0	Ground Surface							
	0.0	***Mulch and Topsoil***					0.0		
	-1.5								
	1.5	***Fill - Well Graded Sand*** Black, moist, mostly fine sand, some granular fines, some white granular fines, no odor.	1		35%		0.0	Sample Location	
3.0							0.0		
	-4.0						0.0		
	4.0	***Native - Sandy Lean Clay*** Brown, moist to wet at 8 fbgs, medium density, medium toughness to soft when wet, no odor. No return from 4 to 8 fbgs.	2		0%		0.0		
8.0							0.0		
			3		35%		0.0		
							0.0		
	-12.0						0.0		
	12.0	End of Borehole							



Drilled By: Trec Environmental
Drill Rig Type: 6620 DT
Drill Method: Direct Push
Comments:
Drill Date(s): 9/11/19

Hole Size: 2"
Stick-up: 39.5"
Datum:

Sheet: 1 of 1

Project No: B0474-019-001

Borehole Number: SB-11

Project: Phase II

A.K.A.:

Client: Generation Development Group

Logged By: CMS

Site Location: 145 Buffalo River

Checked By: BWM

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SUBSURFACE PROFILE			SAMPLE						
Depth (fbgs)	Elev. /Depth	Description (ASTM D2488: Visual-Manual Procedure)	Sample No.	SPT N-Value	Recovery (%)	Symbol	PID VOCs ppm (0 / 12.5 / 25)	Lab Sample	Well Completion Details or Remarks
0.0	0.0	Ground Surface							
	0.0	***Asphalt and Subbase***					0.0		
	-0.5 / 0.5	***Fill - Poorly Graded Sand*** Black, moist, mostly medium grained sand, no odor.							
	-1.5 / 1.5	***Fill - Poorly Graded Sand*** Reddish brown to light brown/white, moist, mostly medium and fine grained sand, no odor.	1		88%		0.0	Sample Location	
	-4.0 / 4.0	Some blue stained sand, waxy texture from 2 to 4 fbgs					0.0		
5.0							0.0		
	-6.0 / 6.0	***Native - Well Graded Sand with Clay*** Brown, moist to wet at 7 fbgs, mostly fine sand, some medium plastic fines, no odor.	2		69%		0.0		Water Level
							0.0		
	-8.0 / 8.0	End of Borehole					0.0		

Drilled By: Trec Environmental
Drill Rig Type: 6620 DT
Drill Method: Direct Push
Comments:
Drill Date(s): 9/11/19

Hole Size: 2"
Stick-up:
Datum:

Sheet: 1 of 1

Project No: B0474-019-001

Borehole Number: SB-12

Project: Phase II

A.K.A.:

Client: Generation Development Group

Logged By: CMS

Site Location: 145 Buffalo River

Checked By: BWM

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SUBSURFACE PROFILE			SAMPLE						
Depth (fbgs)	Elev. /Depth	Description (ASTM D2488: Visual-Manual Procedure)	Sample No.	SPT N-Value	Recovery (%)	Symbol	PID VOCs ppm (0 / 12.5 / 25)	Lab Sample	Well Completion Details or Remarks
0.0	0.0	Ground Surface							
	0.0	***Asphalt and Subbase***							
	-0.5 / 0.5	***Fill - Poorly Graded Sand*** Black, moist, mostly medium grained sand, no odor.					0.0		
	-1.5 / 1.5	***Fill - Poorly Graded Sand*** Reddish brown to light brown/white, moist, mostly medium and fine grained sand, no odor.	1		77%		0.0		
							0.0		
							0.0		
5.0			2		56%		0.0		
	-6.0 / 6.0	***Native - Well Graded Sand with Clay*** Brown, moist to wet at 7 fbgs, mostly fine sand, some medium plastic fines, no odor.					0.0		Water Level
							0.0		
	-8.0 / 8.0	End of Borehole					0.0		

Drilled By: Trec Environmental
Drill Rig Type: 6620 DT
Drill Method: Direct Push
Comments:
Drill Date(s): 9/11/19

Hole Size: 2"
Stick-up:
Datum:

Sheet: 1 of 1

Project No: B0474-019-001

Borehole Number: SB-13

Project: Phase II

A.K.A.:

Client: Generation Development Group

Logged By: CMS

Site Location: 145 Buffalo River

Checked By: BWM

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SUBSURFACE PROFILE			SAMPLE						
Depth (fbgs)	Elev. /Depth	Description (ASTM D2488: Visual-Manual Procedure)	Sample No.	SPT N-Value	Recovery (%)	Symbol	PID VOCs ppm (0 / 12.5 / 25)	Lab Sample	Well Completion Details or Remarks
0.0	0.0	Ground Surface							
	0.0	***Asphalt and Subbase***							
	-0.5 / 0.5	***Fill - Poorly Graded Sand*** Black, moist, mostly medium grained sand, no odor.					0.0		
	-1.5 / 1.5	***Fill - Poorly Graded Sand*** Reddish brown to light brown/white, moist, mostly medium and fine grained sand, some blue staining, some white ash, no odor.	1		58%		0.0 0.0 0.0		
5.0							0.0		
	-6.0 / 6.0	***Native - Well Graded Sand with Clay*** Brown, moist to wet at 7 fbgs, mostly fine sand, some medium plastic fines, no odor.	2		71%		0.0 0.0 0.0		*Water Level*
	-8.0 / 8.0	End of Borehole					0.0		

Drilled By: Trec Environmental
Drill Rig Type: 6620 DT
Drill Method: Direct Push
Comments:
Drill Date(s): 9/11/19

Hole Size: 2"
Stick-up:
Datum:

Sheet: 1 of 1

APPENDIX B

PHOTO LOG

SITE PHOTOGRAPHS

Photo 1:

Photo 2:

Photo 3:

Photo 4:

Photo 1: View of the location of SB-2 – facing southeast

Photo 2: View of typical fill material encountered at SB-2.

Photo 3: View of the location of SB-3/3W – facing south

Photo 4: View of typical fill material encountered at SB-3/3W.

SITE PHOTOGRAPHS

Photo 5:

Photo 6:

Photo 7:

Photo 8:

Photo 5: View of the location of SB-6/6W – facing northwest

Photo 6: View of blue stained fill material encountered at SB-6/6W.

Photo 7: View of the location of SB-8 – facing north

Photo 8: View of blue stained fill material encountered at SB-8.

SITE PHOTOGRAPHS

Photo 9:

Photo 10:

Photo 9: View of the location of SB-9 – facing west

Photo 10: View of typical fill material encountered at SB-9.

APPENDIX C

LABORATORY ANALYTICAL DATA SUMMARY PACKAGE

ANALYTICAL REPORT

Lab Number:	L1941761
Client:	Benchmark & Turnkey Companies 2558 Hamburg Turnpike Suite 300 Buffalo, NY 14218
ATTN:	Bryan Mayback
Phone:	(716) 856-0599
Project Name:	145 BUFFALO RIVER SITE
Project Number:	T0474-019-001
Report Date:	09/19/19

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

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

Project Name: 145 BUFFALO RIVER SITE
Project Number: T0474-019-001

Lab Number: L1941761
Report Date: 09/19/19

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L1941761-01	SB-1	SOIL	145 BUFFALO RIVER	09/11/19 09:00	09/12/19
L1941761-02	SB-2	SOIL	145 BUFFALO RIVER	09/11/19 09:30	09/12/19
L1941761-03	SB-3	SOIL	145 BUFFALO RIVER	09/11/19 10:00	09/12/19
L1941761-04	SB-4	SOIL	145 BUFFALO RIVER	09/11/19 10:30	09/12/19
L1941761-05	SB-5	SOIL	145 BUFFALO RIVER	09/11/19 11:00	09/12/19
L1941761-06	SB-6	SOIL	145 BUFFALO RIVER	09/11/19 11:30	09/12/19
L1941761-07	SB-7	SOIL	145 BUFFALO RIVER	09/11/19 12:00	09/12/19
L1941761-08	SB-8	SOIL	145 BUFFALO RIVER	09/11/19 12:30	09/12/19
L1941761-09	SB-9	SOIL	145 BUFFALO RIVER	09/11/19 13:00	09/12/19
L1941761-10	SB-10	SOIL	145 BUFFALO RIVER	09/11/19 13:30	09/12/19
L1941761-11	SB-11 2-4FT	SOIL	145 BUFFALO RIVER	09/11/19 14:00	09/12/19
L1941761-12	SB-12 2-4FT	SOIL	145 BUFFALO RIVER	09/11/19 14:15	09/12/19
L1941761-13	SB-13 2-4FT	SOIL	145 BUFFALO RIVER	09/11/19 14:30	09/12/19

Project Name:	145 BUFFALO RIVER SITE	**Lab Number:**	L1941761
Project Number:	T0474-019-001	**Report Date:**	09/19/19

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:	145 BUFFALO RIVER SITE	**Lab Number:**	L1941761
Project Number:	T0474-019-001	**Report Date:**	09/19/19

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.

Cyanide, Total

The WG1283846-2/-3 LCS/LCSD recoveries (73%/67%), associated with L1941761-06 and -08, are outside our in-house acceptance criteria, but within the vendor-certified acceptance limits. The results of the original analyses are reported.

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

Authorized Signature:  Kelly Stenstrom

Title: Technical Director/Representative Date: 09/19/19

ORGANICS

SEMIVOLATILES

Project Name: 145 BUFFALO RIVER SITE
Project Number: T0474-019-001
Lab Number: L1941761
Report Date: 09/19/19

SAMPLE RESULTS

Lab ID: L1941761-02
Client ID: SB-2
Sample Location: 145 BUFFALO RIVER

Date Collected: 09/11/19 09:30
Date Received: 09/12/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 09/19/19 01:34
Analyst: SZ
Percent Solids: 84%

Extraction Method: EPA 3546
Extraction Date: 09/16/19 18:48

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Acenaphthene	22	J	ug/kg	150	20.	1
Fluoranthene	360		ug/kg	120	22.	1
Benzo(a)anthracene	190		ug/kg	120	22.	1
Benzo(a)pyrene	160		ug/kg	150	47.	1
Benzo(b)fluoranthene	210		ug/kg	120	32.	1
Benzo(k)fluoranthene	73	J	ug/kg	120	31.	1
Chrysene	170		ug/kg	120	20.	1
Acenaphthylene	ND		ug/kg	150	30.	1
Anthracene	62	J	ug/kg	120	37.	1
Benzo(ghi)perylene	91	J	ug/kg	150	23.	1
Fluorene	22	J	ug/kg	190	19.	1
Phenanthrene	260		ug/kg	120	23.	1
Dibenzo(a,h)anthracene	24	J	ug/kg	120	22.	1
Indeno(1,2,3-cd)pyrene	100	J	ug/kg	150	27.	1
Pyrene	290		ug/kg	120	19.	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	56		23-120
2-Fluorobiphenyl	60		30-120
4-Terphenyl-d14	44		18-120

Project Name: 145 BUFFALO RIVER SITE
Project Number: T0474-019-001
Lab Number: L1941761
Report Date: 09/19/19

SAMPLE RESULTS

Lab ID: L1941761-03
Client ID: SB-3
Sample Location: 145 BUFFALO RIVER

Date Collected: 09/11/19 10:00
Date Received: 09/12/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 09/19/19 02:52
Analyst: SZ
Percent Solids: 81%

Extraction Method: EPA 3546
Extraction Date: 09/16/19 18:48

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Acenaphthene	210		ug/kg	160	21.	1
Fluoranthene	1600		ug/kg	120	24.	1
Benzo(a)anthracene	720		ug/kg	120	23.	1
Benzo(a)pyrene	650		ug/kg	160	50.	1
Benzo(b)fluoranthene	800		ug/kg	120	35.	1
Benzo(k)fluoranthene	300		ug/kg	120	33.	1
Chrysene	670		ug/kg	120	21.	1
Acenaphthylene	ND		ug/kg	160	32.	1
Anthracene	350		ug/kg	120	40.	1
Benzo(ghi)perylene	340		ug/kg	160	24.	1
Fluorene	230		ug/kg	200	20.	1
Phenanthrene	1500		ug/kg	120	25.	1
Dibenzo(a,h)anthracene	88	J	ug/kg	120	24.	1
Indeno(1,2,3-cd)pyrene	360		ug/kg	160	29.	1
Pyrene	1300		ug/kg	120	20.	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	64		23-120
2-Fluorobiphenyl	70		30-120
4-Terphenyl-d14	43		18-120

Project Name: 145 BUFFALO RIVER SITE
Project Number: T0474-019-001
Lab Number: L1941761
Report Date: 09/19/19

SAMPLE RESULTS

Lab ID: L1941761-04
Client ID: SB-4
Sample Location: 145 BUFFALO RIVER

Date Collected: 09/11/19 10:30
Date Received: 09/12/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 09/19/19 02:26
Analyst: SZ
Percent Solids: 82%

Extraction Method: EPA 3546
Extraction Date: 09/16/19 18:48

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Acenaphthene	200		ug/kg	160	21.	1
Fluoranthene	1500		ug/kg	120	23.	1
Benzo(a)anthracene	700		ug/kg	120	23.	1
Benzo(a)pyrene	640		ug/kg	160	49.	1
Benzo(b)fluoranthene	790		ug/kg	120	34.	1
Benzo(k)fluoranthene	290		ug/kg	120	32.	1
Chrysene	670		ug/kg	120	21.	1
Acenaphthylene	ND		ug/kg	160	31.	1
Anthracene	350		ug/kg	120	39.	1
Benzo(ghi)perylene	320		ug/kg	160	24.	1
Fluorene	220		ug/kg	200	20.	1
Phenanthrene	1500		ug/kg	120	24.	1
Dibenzo(a,h)anthracene	89	J	ug/kg	120	23.	1
Indeno(1,2,3-cd)pyrene	350		ug/kg	160	28.	1
Pyrene	1200		ug/kg	120	20.	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	64		23-120
2-Fluorobiphenyl	70		30-120
4-Terphenyl-d14	42		18-120

Project Name: 145 BUFFALO RIVER SITE
Project Number: T0474-019-001
Lab Number: L1941761
Report Date: 09/19/19

SAMPLE RESULTS

Lab ID: L1941761-06
Client ID: SB-6
Sample Location: 145 BUFFALO RIVER

Date Collected: 09/11/19 11:30
Date Received: 09/12/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 09/19/19 07:42
Analyst: SZ
Percent Solids: 75%

Extraction Method: EPA 3546
Extraction Date: 09/16/19 18:48

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Acenaphthene	750		ug/kg	170	22.	1
Fluoranthene	6800		ug/kg	130	25.	1
Benzo(a)anthracene	3700		ug/kg	130	24.	1
Benzo(a)pyrene	2900		ug/kg	170	52.	1
Benzo(b)fluoranthene	4100		ug/kg	130	36.	1
Benzo(k)fluoranthene	1400		ug/kg	130	34.	1
Chrysene	3400		ug/kg	130	22.	1
Acenaphthylene	140	J	ug/kg	170	33.	1
Anthracene	1600		ug/kg	130	42.	1
Benzo(ghi)perylene	1300		ug/kg	170	25.	1
Fluorene	930		ug/kg	210	21.	1
Phenanthrene	5700		ug/kg	130	26.	1
Dibenzo(a,h)anthracene	460		ug/kg	130	25.	1
Indeno(1,2,3-cd)pyrene	1600		ug/kg	170	30.	1
Pyrene	5300		ug/kg	130	21.	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	59		23-120
2-Fluorobiphenyl	65		30-120
4-Terphenyl-d14	47		18-120

Project Name: 145 BUFFALO RIVER SITE
Project Number: T0474-019-001
Lab Number: L1941761
Report Date: 09/19/19

SAMPLE RESULTS

Lab ID: L1941761-08
Client ID: SB-8
Sample Location: 145 BUFFALO RIVER

Date Collected: 09/11/19 12:30
Date Received: 09/12/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 09/19/19 08:08
Analyst: SZ
Percent Solids: 53%

Extraction Method: EPA 3546
Extraction Date: 09/16/19 18:48

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Acenaphthene	ND		ug/kg	250	32.	1
Fluoranthene	180	J	ug/kg	190	36.	1
Benzo(a)anthracene	84	J	ug/kg	190	35.	1
Benzo(a)pyrene	83	J	ug/kg	250	76.	1
Benzo(b)fluoranthene	140	J	ug/kg	190	52.	1
Benzo(k)fluoranthene	ND		ug/kg	190	50.	1
Chrysene	120	J	ug/kg	190	32.	1
Acenaphthylene	ND		ug/kg	250	48.	1
Anthracene	ND		ug/kg	190	60.	1
Benzo(ghi)perylene	61	J	ug/kg	250	36.	1
Fluorene	ND		ug/kg	310	30.	1
Phenanthrene	110	J	ug/kg	190	38.	1
Dibenzo(a,h)anthracene	ND		ug/kg	190	36.	1
Indeno(1,2,3-cd)pyrene	55	J	ug/kg	250	43.	1
Pyrene	140	J	ug/kg	190	31.	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	43		23-120
2-Fluorobiphenyl	52		30-120
4-Terphenyl-d14	40		18-120

Project Name: 145 BUFFALO RIVER SITE
Project Number: T0474-019-001
Lab Number: L1941761
Report Date: 09/19/19

SAMPLE RESULTS

Lab ID: L1941761-09
Client ID: SB-9
Sample Location: 145 BUFFALO RIVER

Date Collected: 09/11/19 13:00
Date Received: 09/12/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 09/19/19 08:37
Analyst: IM
Percent Solids: 83%

Extraction Method: EPA 3546
Extraction Date: 09/16/19 18:48

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Acenaphthene	240		ug/kg	160	20.	1
Fluoranthene	3200		ug/kg	120	23.	1
Benzo(a)anthracene	1300		ug/kg	120	22.	1
Benzo(a)pyrene	1200		ug/kg	160	48.	1
Benzo(b)fluoranthene	1600		ug/kg	120	33.	1
Benzo(k)fluoranthene	470		ug/kg	120	32.	1
Chrysene	1300		ug/kg	120	20.	1
Acenaphthylene	65	J	ug/kg	160	30.	1
Anthracene	540		ug/kg	120	38.	1
Benzo(ghi)perylene	720		ug/kg	160	23.	1
Fluorene	260		ug/kg	200	19.	1
Phenanthrene	2400		ug/kg	120	24.	1
Dibenzo(a,h)anthracene	180		ug/kg	120	23.	1
Indeno(1,2,3-cd)pyrene	760		ug/kg	160	27.	1
Pyrene	2500		ug/kg	120	20.	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	61		23-120
2-Fluorobiphenyl	68		30-120
4-Terphenyl-d14	50		18-120

Project Name: 145 BUFFALO RIVER SITE
Project Number: T0474-019-001
Lab Number: L1941761
Report Date: 09/19/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D
Analytical Date: 09/16/19 22:52
Analyst: RC

Extraction Method: EPA 3546
Extraction Date: 09/16/19 02:39

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 02-04,06,08-09 Batch: WG1284419-1					
Acenaphthene	ND		ug/kg	130	17.
Fluoranthene	ND		ug/kg	97	18.
Benzo(a)anthracene	ND		ug/kg	97	18.
Benzo(a)pyrene	ND		ug/kg	130	39.
Benzo(b)fluoranthene	ND		ug/kg	97	27.
Benzo(k)fluoranthene	ND		ug/kg	97	26.
Chrysene	ND		ug/kg	97	17.
Acenaphthylene	ND		ug/kg	130	25.
Anthracene	ND		ug/kg	97	31.
Benzo(ghi)perylene	ND		ug/kg	130	19.
Fluorene	ND		ug/kg	160	16.
Phenanthrene	ND		ug/kg	97	20.
Dibenzo(a,h)anthracene	ND		ug/kg	97	19.
Indeno(1,2,3-cd)pyrene	ND		ug/kg	130	22.
Pyrene	ND		ug/kg	97	16.

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	75		25-120
Phenol-d6	78		10-120
Nitrobenzene-d5	87		23-120
2-Fluorobiphenyl	85		30-120
2,4,6-Tribromophenol	85		10-136
4-Terphenyl-d14	88		18-120

Lab Control Sample Analysis

Batch Quality Control

Project Name: 145 BUFFALO RIVER SITE

Project Number: T0474-019-001

Lab Number: L1941761

Report Date: 09/19/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 02-04,06,08-09 Batch: WG1284419-2 WG1284419-3								
Acenaphthene	84		73		31-137	14		50
Fluoranthene	92		79		40-140	15		50
Benzo(a)anthracene	89		80		40-140	11		50
Benzo(a)pyrene	88		78		40-140	12		50
Benzo(b)fluoranthene	92		82		40-140	11		50
Benzo(k)fluoranthene	90		78		40-140	14		50
Chrysene	85		76		40-140	11		50
Acenaphthylene	93		84		40-140	10		50
Anthracene	90		78		40-140	14		50
Benzo(ghi)perylene	92		80		40-140	14		50
Fluorene	90		79		40-140	13		50
Phenanthrene	87		75		40-140	15		50
Dibenzo(a,h)anthracene	89		75		40-140	17		50
Indeno(1,2,3-cd)pyrene	92		81		40-140	13		50
Pyrene	92		78		35-142	16		50

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2-Fluorophenol	81		72		25-120
Phenol-d6	85		76		10-120
Nitrobenzene-d5	92		81		23-120
2-Fluorobiphenyl	88		80		30-120
2,4,6-Tribromophenol	92		79		10-136
4-Terphenyl-d14	88		75		18-120

PCBS

Project Name: 145 BUFFALO RIVER SITE
Project Number: T0474-019-001
Lab Number: L1941761
Report Date: 09/19/19

SAMPLE RESULTS

Lab ID: L1941761-01
Client ID: SB-1
Sample Location: 145 BUFFALO RIVER

Date Collected: 09/11/19 09:00
Date Received: 09/12/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8082A
Analytical Date: 09/17/19 20:15
Analyst: HT
Percent Solids: 59%

Extraction Method: EPA 3546
Extraction Date: 09/15/19 21:42
Cleanup Method: EPA 3665A
Cleanup Date: 09/17/19
Cleanup Method: EPA 3660B
Cleanup Date: 09/17/19

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Polychlorinated Biphenyls by GC - Westborough Lab							
Aroclor 1016	ND		ug/kg	55.0	4.89	1	A
Aroclor 1221	ND		ug/kg	55.0	5.52	1	A
Aroclor 1232	ND		ug/kg	55.0	11.7	1	A
Aroclor 1242	ND		ug/kg	55.0	7.42	1	A
Aroclor 1248	ND		ug/kg	55.0	8.26	1	A
Aroclor 1254	ND		ug/kg	55.0	6.02	1	A
Aroclor 1260	ND		ug/kg	55.0	10.2	1	A
Aroclor 1262	ND		ug/kg	55.0	6.99	1	A
Aroclor 1268	16.6	J	ug/kg	55.0	5.70	1	B
PCBs, Total	16.6	J	ug/kg	55.0	4.89	1	B

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	74		30-150	A
Decachlorobiphenyl	63		30-150	A
2,4,5,6-Tetrachloro-m-xylene	72		30-150	B
Decachlorobiphenyl	64		30-150	B

Project Name: 145 BUFFALO RIVER SITE
Project Number: T0474-019-001
Lab Number: L1941761
Report Date: 09/19/19

SAMPLE RESULTS

Lab ID: L1941761-02
Client ID: SB-2
Sample Location: 145 BUFFALO RIVER

Date Collected: 09/11/19 09:30
Date Received: 09/12/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8082A
Analytical Date: 09/17/19 19:38
Analyst: WR
Percent Solids: 84%

Extraction Method: EPA 3546
Extraction Date: 09/16/19 03:48
Cleanup Method: EPA 3665A
Cleanup Date: 09/16/19
Cleanup Method: EPA 3660B
Cleanup Date: 09/17/19

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Polychlorinated Biphenyls by GC - Westborough Lab							
Aroclor 1016	ND		ug/kg	38.6	3.43	1	A
Aroclor 1221	ND		ug/kg	38.6	3.87	1	A
Aroclor 1232	ND		ug/kg	38.6	8.18	1	A
Aroclor 1242	ND		ug/kg	38.6	5.20	1	A
Aroclor 1248	ND		ug/kg	38.6	5.79	1	A
Aroclor 1254	ND		ug/kg	38.6	4.22	1	A
Aroclor 1260	18.8	J	ug/kg	38.6	7.13	1	A
Aroclor 1262	ND		ug/kg	38.6	4.90	1	A
Aroclor 1268	21.7	J	ug/kg	38.6	4.00	1	B
PCBs, Total	40.5	J	ug/kg	38.6	3.43	1	B

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	54		30-150	A
Decachlorobiphenyl	59		30-150	A
2,4,5,6-Tetrachloro-m-xylene	54		30-150	B
Decachlorobiphenyl	69		30-150	B

Project Name: 145 BUFFALO RIVER SITE
Project Number: T0474-019-001
Lab Number: L1941761
Report Date: 09/19/19

SAMPLE RESULTS

Lab ID: L1941761-03
Client ID: SB-3
Sample Location: 145 BUFFALO RIVER

Date Collected: 09/11/19 10:00
Date Received: 09/12/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8082A
Analytical Date: 09/17/19 19:50
Analyst: WR
Percent Solids: 81%

Extraction Method: EPA 3546
Extraction Date: 09/16/19 03:48
Cleanup Method: EPA 3665A
Cleanup Date: 09/16/19
Cleanup Method: EPA 3660B
Cleanup Date: 09/17/19

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Polychlorinated Biphenyls by GC - Westborough Lab							
Aroclor 1016	ND		ug/kg	39.0	3.47	1	A
Aroclor 1221	ND		ug/kg	39.0	3.91	1	A
Aroclor 1232	ND		ug/kg	39.0	8.28	1	A
Aroclor 1242	ND		ug/kg	39.0	5.26	1	A
Aroclor 1248	ND		ug/kg	39.0	5.86	1	A
Aroclor 1254	ND		ug/kg	39.0	4.27	1	A
Aroclor 1260	ND		ug/kg	39.0	7.21	1	A
Aroclor 1262	ND		ug/kg	39.0	4.96	1	A
Aroclor 1268	11.2	J	ug/kg	39.0	4.04	1	B
PCBs, Total	11.2	J	ug/kg	39.0	3.47	1	B

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	49		30-150	A
Decachlorobiphenyl	52		30-150	A
2,4,5,6-Tetrachloro-m-xylene	48		30-150	B
Decachlorobiphenyl	59		30-150	B

Project Name: 145 BUFFALO RIVER SITE
Project Number: T0474-019-001
Lab Number: L1941761
Report Date: 09/19/19

SAMPLE RESULTS

Lab ID: L1941761-04
Client ID: SB-4
Sample Location: 145 BUFFALO RIVER

Date Collected: 09/11/19 10:30
Date Received: 09/12/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8082A
Analytical Date: 09/17/19 20:02
Analyst: WR
Percent Solids: 82%

Extraction Method: EPA 3546
Extraction Date: 09/16/19 03:48
Cleanup Method: EPA 3665A
Cleanup Date: 09/16/19
Cleanup Method: EPA 3660B
Cleanup Date: 09/17/19

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Polychlorinated Biphenyls by GC - Westborough Lab							
Aroclor 1016	ND		ug/kg	40.4	3.58	1	A
Aroclor 1221	ND		ug/kg	40.4	4.04	1	A
Aroclor 1232	ND		ug/kg	40.4	8.56	1	A
Aroclor 1242	ND		ug/kg	40.4	5.44	1	A
Aroclor 1248	181		ug/kg	40.4	6.05	1	B
Aroclor 1254	73.2		ug/kg	40.4	4.41	1	B
Aroclor 1260	128		ug/kg	40.4	7.46	1	B
Aroclor 1262	ND		ug/kg	40.4	5.12	1	A
Aroclor 1268	47.4		ug/kg	40.4	4.18	1	A
PCBs, Total	430		ug/kg	40.4	3.58	1	B

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	52		30-150	A
Decachlorobiphenyl	71		30-150	A
2,4,5,6-Tetrachloro-m-xylene	54		30-150	B
Decachlorobiphenyl	78		30-150	B

Project Name: 145 BUFFALO RIVER SITE
Project Number: T0474-019-001
Lab Number: L1941761
Report Date: 09/19/19

SAMPLE RESULTS

Lab ID: L1941761-05
Client ID: SB-5
Sample Location: 145 BUFFALO RIVER

Date Collected: 09/11/19 11:00
Date Received: 09/12/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8082A
Analytical Date: 09/17/19 20:27
Analyst: HT
Percent Solids: 86%

Extraction Method: EPA 3546
Extraction Date: 09/15/19 21:42
Cleanup Method: EPA 3665A
Cleanup Date: 09/17/19
Cleanup Method: EPA 3660B
Cleanup Date: 09/17/19

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Polychlorinated Biphenyls by GC - Westborough Lab							
Aroclor 1016	ND		ug/kg	37.5	3.33	1	A
Aroclor 1221	ND		ug/kg	37.5	3.76	1	A
Aroclor 1232	ND		ug/kg	37.5	7.96	1	A
Aroclor 1242	ND		ug/kg	37.5	5.06	1	A
Aroclor 1248	ND		ug/kg	37.5	5.63	1	A
Aroclor 1254	ND		ug/kg	37.5	4.11	1	A
Aroclor 1260	ND		ug/kg	37.5	6.94	1	A
Aroclor 1262	ND		ug/kg	37.5	4.77	1	A
Aroclor 1268	19.7	J	ug/kg	37.5	3.89	1	B
PCBs, Total	19.7	J	ug/kg	37.5	3.33	1	B

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	65		30-150	A
Decachlorobiphenyl	62		30-150	A
2,4,5,6-Tetrachloro-m-xylene	66		30-150	B
Decachlorobiphenyl	62		30-150	B

Project Name: 145 BUFFALO RIVER SITE
Project Number: T0474-019-001
Lab Number: L1941761
Report Date: 09/19/19

SAMPLE RESULTS

Lab ID: L1941761-06
Client ID: SB-6
Sample Location: 145 BUFFALO RIVER

Date Collected: 09/11/19 11:30
Date Received: 09/12/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8082A
Analytical Date: 09/17/19 20:14
Analyst: WR
Percent Solids: 75%

Extraction Method: EPA 3546
Extraction Date: 09/16/19 03:48
Cleanup Method: EPA 3665A
Cleanup Date: 09/16/19
Cleanup Method: EPA 3660B
Cleanup Date: 09/17/19

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Polychlorinated Biphenyls by GC - Westborough Lab							
Aroclor 1016	ND		ug/kg	43.4	3.86	1	A
Aroclor 1221	ND		ug/kg	43.4	4.35	1	A
Aroclor 1232	ND		ug/kg	43.4	9.21	1	A
Aroclor 1242	ND		ug/kg	43.4	5.85	1	A
Aroclor 1248	ND		ug/kg	43.4	6.51	1	A
Aroclor 1254	ND		ug/kg	43.4	4.75	1	A
Aroclor 1260	ND		ug/kg	43.4	8.02	1	A
Aroclor 1262	ND		ug/kg	43.4	5.52	1	A
Aroclor 1268	211		ug/kg	43.4	4.50	1	B
PCBs, Total	211		ug/kg	43.4	3.86	1	B

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	57		30-150	A
Decachlorobiphenyl	72		30-150	A
2,4,5,6-Tetrachloro-m-xylene	59		30-150	B
Decachlorobiphenyl	69		30-150	B

Project Name: 145 BUFFALO RIVER SITE
Project Number: T0474-019-001
Lab Number: L1941761
Report Date: 09/19/19

SAMPLE RESULTS

Lab ID: L1941761-07
Client ID: SB-7
Sample Location: 145 BUFFALO RIVER

Date Collected: 09/11/19 12:00
Date Received: 09/12/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8082A
Analytical Date: 09/17/19 20:39
Analyst: HT
Percent Solids: 58%

Extraction Method: EPA 3546
Extraction Date: 09/15/19 21:42
Cleanup Method: EPA 3665A
Cleanup Date: 09/17/19
Cleanup Method: EPA 3660B
Cleanup Date: 09/17/19

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Polychlorinated Biphenyls by GC - Westborough Lab							
Aroclor 1016	ND		ug/kg	55.3	4.91	1	A
Aroclor 1221	ND		ug/kg	55.3	5.54	1	A
Aroclor 1232	ND		ug/kg	55.3	11.7	1	A
Aroclor 1242	ND		ug/kg	55.3	7.45	1	A
Aroclor 1248	ND		ug/kg	55.3	8.29	1	A
Aroclor 1254	ND		ug/kg	55.3	6.05	1	A
Aroclor 1260	ND		ug/kg	55.3	10.2	1	A
Aroclor 1262	ND		ug/kg	55.3	7.02	1	A
Aroclor 1268	10.3	J	ug/kg	55.3	5.73	1	B
PCBs, Total	10.3	J	ug/kg	55.3	4.91	1	B

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	71		30-150	A
Decachlorobiphenyl	63		30-150	A
2,4,5,6-Tetrachloro-m-xylene	77		30-150	B
Decachlorobiphenyl	68		30-150	B

Project Name: 145 BUFFALO RIVER SITE
Lab Number: L1941761
Project Number: T0474-019-001
Report Date: 09/19/19

SAMPLE RESULTS

Lab ID: L1941761-08
Client ID: SB-8
Sample Location: 145 BUFFALO RIVER

Date Collected: 09/11/19 12:30
Date Received: 09/12/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8082A
Analytical Date: 09/17/19 20:27
Analyst: WR
Percent Solids: 53%

Extraction Method: EPA 3546
Extraction Date: 09/16/19 03:48
Cleanup Method: EPA 3665A
Cleanup Date: 09/16/19
Cleanup Method: EPA 3660B
Cleanup Date: 09/17/19

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Polychlorinated Biphenyls by GC - Westborough Lab							
Aroclor 1016	ND		ug/kg	62.5	5.55	1	A
Aroclor 1221	ND		ug/kg	62.5	6.26	1	A
Aroclor 1232	ND		ug/kg	62.5	13.2	1	A
Aroclor 1242	ND		ug/kg	62.5	8.42	1	A
Aroclor 1248	ND		ug/kg	62.5	9.38	1	A
Aroclor 1254	ND		ug/kg	62.5	6.84	1	A
Aroclor 1260	ND		ug/kg	62.5	11.6	1	A
Aroclor 1262	ND		ug/kg	62.5	7.94	1	A
Aroclor 1268	7.13	J	ug/kg	62.5	6.48	1	B
PCBs, Total	7.13	J	ug/kg	62.5	5.55	1	B

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	55		30-150	A
Decachlorobiphenyl	65		30-150	A
2,4,5,6-Tetrachloro-m-xylene	61		30-150	B
Decachlorobiphenyl	70		30-150	B

Project Name: 145 BUFFALO RIVER SITE
Project Number: T0474-019-001
Lab Number: L1941761
Report Date: 09/19/19

SAMPLE RESULTS

Lab ID: L1941761-09 D
Client ID: SB-9
Sample Location: 145 BUFFALO RIVER

Sample Depth:
Matrix: Soil
Analytical Method: 1,8082A
Analytical Date: 09/18/19 16:04
Analyst: WR
Percent Solids: 83%

Date Collected: 09/11/19 13:00
Date Received: 09/12/19
Field Prep: Not Specified

Extraction Method: EPA 3546
Extraction Date: 09/16/19 03:48
Cleanup Method: EPA 3665A
Cleanup Date: 09/16/19
Cleanup Method: EPA 3660B
Cleanup Date: 09/17/19

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Polychlorinated Biphenyls by GC - Westborough Lab							
Aroclor 1016	ND		ug/kg	199	17.7	5	A
Aroclor 1221	ND		ug/kg	199	20.0	5	A
Aroclor 1232	ND		ug/kg	199	42.2	5	A
Aroclor 1242	ND		ug/kg	199	26.8	5	A
Aroclor 1248	ND		ug/kg	199	29.9	5	A
Aroclor 1254	ND		ug/kg	199	21.8	5	A
Aroclor 1260	ND		ug/kg	199	36.8	5	A
Aroclor 1262	ND		ug/kg	199	25.3	5	A
Aroclor 1268	1090		ug/kg	199	20.6	5	B
PCBs, Total	1090		ug/kg	199	17.7	5	B

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	56		30-150	A
Decachlorobiphenyl	96		30-150	A
2,4,5,6-Tetrachloro-m-xylene	55		30-150	B
Decachlorobiphenyl	111		30-150	B

Project Name: 145 BUFFALO RIVER SITE
Project Number: T0474-019-001
Lab Number: L1941761
Report Date: 09/19/19

SAMPLE RESULTS

Lab ID: L1941761-10
Client ID: SB-10
Sample Location: 145 BUFFALO RIVER

Date Collected: 09/11/19 13:30
Date Received: 09/12/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8082A
Analytical Date: 09/17/19 20:51
Analyst: HT
Percent Solids: 88%

Extraction Method: EPA 3546
Extraction Date: 09/15/19 21:42
Cleanup Method: EPA 3665A
Cleanup Date: 09/17/19
Cleanup Method: EPA 3660B
Cleanup Date: 09/17/19

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Polychlorinated Biphenyls by GC - Westborough Lab							
Aroclor 1016	ND		ug/kg	36.9	3.27	1	A
Aroclor 1221	ND		ug/kg	36.9	3.69	1	A
Aroclor 1232	ND		ug/kg	36.9	7.82	1	A
Aroclor 1242	ND		ug/kg	36.9	4.97	1	A
Aroclor 1248	ND		ug/kg	36.9	5.53	1	A
Aroclor 1254	34.6	J	ug/kg	36.9	4.03	1	A
Aroclor 1260	61.0		ug/kg	36.9	6.81	1	A
Aroclor 1262	ND		ug/kg	36.9	4.68	1	A
Aroclor 1268	111		ug/kg	36.9	3.82	1	B
PCBs, Total	207	J	ug/kg	36.9	3.27	1	B

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	61		30-150	A
Decachlorobiphenyl	55		30-150	A
2,4,5,6-Tetrachloro-m-xylene	55		30-150	B
Decachlorobiphenyl	57		30-150	B

Project Name: 145 BUFFALO RIVER SITE
Project Number: T0474-019-001
Lab Number: L1941761
Report Date: 09/19/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8082A
Analytical Date: 09/17/19 23:40
Analyst: HT

Extraction Method: EPA 3546
Extraction Date: 09/15/19 02:29
Cleanup Method: EPA 3665A
Cleanup Date: 09/15/19
Cleanup Method: EPA 3660B
Cleanup Date: 09/15/19

Parameter	Result	Qualifier	Units	RL	MDL	Column
Polychlorinated Biphenyls by GC - Westborough Lab for sample(s): 01,05,07,10 Batch: WG1284287-1						
Aroclor 1016	ND		ug/kg	31.9	2.84	A
Aroclor 1221	ND		ug/kg	31.9	3.20	A
Aroclor 1232	ND		ug/kg	31.9	6.77	A
Aroclor 1242	ND		ug/kg	31.9	4.31	A
Aroclor 1248	ND		ug/kg	31.9	4.79	A
Aroclor 1254	ND		ug/kg	31.9	3.50	A
Aroclor 1260	ND		ug/kg	31.9	5.90	A
Aroclor 1262	ND		ug/kg	31.9	4.06	A
Aroclor 1268	ND		ug/kg	31.9	3.31	A
PCBs, Total	ND		ug/kg	31.9	2.84	A

Surrogate	%Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	77		30-150	A
Decachlorobiphenyl	62		30-150	A
2,4,5,6-Tetrachloro-m-xylene	78		30-150	B
Decachlorobiphenyl	72		30-150	B

Project Name: 145 BUFFALO RIVER SITE
Project Number: T0474-019-001
Lab Number: L1941761
Report Date: 09/19/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8082A
Analytical Date: 09/17/19 16:59
Analyst: AWS

Extraction Method: EPA 3546
Extraction Date: 09/16/19 03:48
Cleanup Method: EPA 3665A
Cleanup Date: 09/16/19
Cleanup Method: EPA 3660B
Cleanup Date: 09/16/19

Parameter	Result	Qualifier	Units	RL	MDL	Column
Polychlorinated Biphenyls by GC - Westborough Lab for sample(s): 02-04,06,08-09 Batch: WG1284421-1						
Aroclor 1016	ND		ug/kg	31.8	2.83	A
Aroclor 1221	ND		ug/kg	31.8	3.19	A
Aroclor 1232	ND		ug/kg	31.8	6.75	A
Aroclor 1242	ND		ug/kg	31.8	4.29	A
Aroclor 1248	ND		ug/kg	31.8	4.77	A
Aroclor 1254	ND		ug/kg	31.8	3.48	A
Aroclor 1260	ND		ug/kg	31.8	5.88	A
Aroclor 1262	ND		ug/kg	31.8	4.04	A
Aroclor 1268	ND		ug/kg	31.8	3.30	A
PCBs, Total	ND		ug/kg	31.8	2.83	A

Surrogate	%Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	60		30-150	A
Decachlorobiphenyl	63		30-150	A
2,4,5,6-Tetrachloro-m-xylene	55		30-150	B
Decachlorobiphenyl	43		30-150	B

Lab Control Sample Analysis

Batch Quality Control

Project Name: 145 BUFFALO RIVER SITE

Project Number: T0474-019-001

Lab Number: L1941761

Report Date: 09/19/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
Polychlorinated Biphenyls by GC - Westborough Lab Associated sample(s): 01,05,07,10 Batch: WG1284287-2 WG1284287-3									
Aroclor 1016	81		83		40-140	2		50	A
Aroclor 1260	70		74		40-140	6		50	A

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	106		107		30-150	A
Decachlorobiphenyl	89		92		30-150	A
2,4,5,6-Tetrachloro-m-xylene	106		107		30-150	B
Decachlorobiphenyl	94		98		30-150	B

Lab Control Sample Analysis

Batch Quality Control

Project Name: 145 BUFFALO RIVER SITE

Project Number: T0474-019-001

Lab Number: L1941761

Report Date: 09/19/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
Polychlorinated Biphenyls by GC - Westborough Lab Associated sample(s): 02-04,06,08-09 Batch: WG1284421-2 WG1284421-3									
Aroclor 1016	70		57		40-140	20		50	A
Aroclor 1260	68		55		40-140	21		50	A

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	58		48		30-150	A
Decachlorobiphenyl	56		46		30-150	A
2,4,5,6-Tetrachloro-m-xylene	56		47		30-150	B
Decachlorobiphenyl	47		39		30-150	B

METALS

Project Name: 145 BUFFALO RIVER SITE
Lab Number: L1941761
Project Number: T0474-019-001
Report Date: 09/19/19

SAMPLE RESULTS

Lab ID: L1941761-02
Client ID: SB-2
Sample Location: 145 BUFFALO RIVER
Date Collected: 09/11/19 09:30
Date Received: 09/12/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 84%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Arsenic, Total	112		mg/kg	0.449	0.093	1	09/17/19 19:27	09/18/19 22:35	EPA 3050B	1,6010D	MC
Barium, Total	114		mg/kg	0.449	0.078	1	09/17/19 19:27	09/18/19 22:35	EPA 3050B	1,6010D	MC
Cadmium, Total	1.64		mg/kg	0.449	0.044	1	09/17/19 19:27	09/18/19 22:35	EPA 3050B	1,6010D	MC
Chromium, Total	12.4		mg/kg	0.449	0.043	1	09/17/19 19:27	09/18/19 22:35	EPA 3050B	1,6010D	MC
Lead, Total	271		mg/kg	2.24	0.120	1	09/17/19 19:27	09/18/19 22:35	EPA 3050B	1,6010D	MC
Mercury, Total	1.78		mg/kg	0.076	0.049	1	09/18/19 06:00	09/18/19 19:16	EPA 7471B	1,7471B	GD
Selenium, Total	0.848	J	mg/kg	0.898	0.116	1	09/17/19 19:27	09/18/19 22:35	EPA 3050B	1,6010D	MC
Silver, Total	0.319	J	mg/kg	0.449	0.127	1	09/17/19 19:27	09/18/19 22:35	EPA 3050B	1,6010D	MC

Project Name: 145 BUFFALO RIVER SITE
Lab Number: L1941761
Project Number: T0474-019-001
Report Date: 09/19/19

SAMPLE RESULTS

Lab ID: L1941761-03
Client ID: SB-3
Sample Location: 145 BUFFALO RIVER
Date Collected: 09/11/19 10:00
Date Received: 09/12/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 81%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Arsenic, Total	57.4		mg/kg	0.470	0.098	1	09/17/19 19:27	09/18/19 22:39	EPA 3050B	1,6010D	MC
Barium, Total	216		mg/kg	0.470	0.082	1	09/17/19 19:27	09/18/19 22:39	EPA 3050B	1,6010D	MC
Cadmium, Total	1.05		mg/kg	0.470	0.046	1	09/17/19 19:27	09/18/19 22:39	EPA 3050B	1,6010D	MC
Chromium, Total	17.1		mg/kg	0.470	0.045	1	09/17/19 19:27	09/18/19 22:39	EPA 3050B	1,6010D	MC
Lead, Total	932		mg/kg	2.35	0.126	1	09/17/19 19:27	09/18/19 22:39	EPA 3050B	1,6010D	MC
Mercury, Total	3.48		mg/kg	0.156	0.102	2	09/18/19 06:00	09/18/19 20:03	EPA 7471B	1,7471B	GD
Selenium, Total	0.630	J	mg/kg	0.941	0.121	1	09/17/19 19:27	09/18/19 22:39	EPA 3050B	1,6010D	MC
Silver, Total	0.536		mg/kg	0.470	0.133	1	09/17/19 19:27	09/18/19 22:39	EPA 3050B	1,6010D	MC

Project Name: 145 BUFFALO RIVER SITE
Lab Number: L1941761
Project Number: T0474-019-001
Report Date: 09/19/19

SAMPLE RESULTS

Lab ID: L1941761-04
Client ID: SB-4
Sample Location: 145 BUFFALO RIVER
Date Collected: 09/11/19 10:30
Date Received: 09/12/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 82%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Arsenic, Total	1.68		mg/kg	0.469	0.098	1	09/17/19 19:27	09/18/19 23:11	EPA 3050B	1,6010D	MC
Barium, Total	39.7		mg/kg	0.469	0.082	1	09/17/19 19:27	09/18/19 23:11	EPA 3050B	1,6010D	MC
Cadmium, Total	0.291	J	mg/kg	0.469	0.046	1	09/17/19 19:27	09/18/19 23:11	EPA 3050B	1,6010D	MC
Chromium, Total	4.04		mg/kg	0.469	0.045	1	09/17/19 19:27	09/18/19 23:11	EPA 3050B	1,6010D	MC
Lead, Total	17.5		mg/kg	2.34	0.126	1	09/17/19 19:27	09/18/19 23:11	EPA 3050B	1,6010D	MC
Mercury, Total	0.167		mg/kg	0.077	0.050	1	09/18/19 06:00	09/18/19 19:23	EPA 7471B	1,7471B	GD
Selenium, Total	0.136	J	mg/kg	0.938	0.121	1	09/17/19 19:27	09/18/19 23:11	EPA 3050B	1,6010D	MC
Silver, Total	ND		mg/kg	0.469	0.133	1	09/17/19 19:27	09/18/19 23:11	EPA 3050B	1,6010D	MC

Project Name: 145 BUFFALO RIVER SITE
Lab Number: L1941761
Project Number: T0474-019-001
Report Date: 09/19/19

SAMPLE RESULTS

Lab ID: L1941761-06
Client ID: SB-6
Sample Location: 145 BUFFALO RIVER
Date Collected: 09/11/19 11:30
Date Received: 09/12/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 75%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Arsenic, Total	55.4		mg/kg	0.526	0.109	1	09/17/19 19:27	09/18/19 23:16	EPA 3050B	1,6010D	MC
Barium, Total	166		mg/kg	0.526	0.092	1	09/17/19 19:27	09/18/19 23:16	EPA 3050B	1,6010D	MC
Cadmium, Total	2.83		mg/kg	0.526	0.052	1	09/17/19 19:27	09/18/19 23:16	EPA 3050B	1,6010D	MC
Chromium, Total	6.24		mg/kg	0.526	0.051	1	09/17/19 19:27	09/18/19 23:16	EPA 3050B	1,6010D	MC
Lead, Total	163		mg/kg	2.63	0.141	1	09/17/19 19:27	09/18/19 23:16	EPA 3050B	1,6010D	MC
Mercury, Total	0.237		mg/kg	0.083	0.054	1	09/18/19 06:00	09/18/19 19:26	EPA 7471B	1,7471B	GD
Selenium, Total	1.32		mg/kg	1.05	0.136	1	09/17/19 19:27	09/18/19 23:16	EPA 3050B	1,6010D	MC
Silver, Total	ND		mg/kg	0.526	0.149	1	09/17/19 19:27	09/18/19 23:16	EPA 3050B	1,6010D	MC

Project Name: 145 BUFFALO RIVER SITE
Lab Number: L1941761
Project Number: T0474-019-001
Report Date: 09/19/19

SAMPLE RESULTS

Lab ID: L1941761-08
Client ID: SB-8
Sample Location: 145 BUFFALO RIVER
Date Collected: 09/11/19 12:30
Date Received: 09/12/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 53%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Arsenic, Total	19.3		mg/kg	0.740	0.154	1	09/17/19 19:27	09/18/19 23:20	EPA 3050B	1,6010D	MC
Barium, Total	101		mg/kg	0.740	0.129	1	09/17/19 19:27	09/18/19 23:20	EPA 3050B	1,6010D	MC
Cadmium, Total	ND		mg/kg	0.740	0.073	1	09/17/19 19:27	09/18/19 23:20	EPA 3050B	1,6010D	MC
Chromium, Total	1.74		mg/kg	0.740	0.071	1	09/17/19 19:27	09/18/19 23:20	EPA 3050B	1,6010D	MC
Lead, Total	1.55	J	mg/kg	3.70	0.198	1	09/17/19 19:27	09/18/19 23:20	EPA 3050B	1,6010D	MC
Mercury, Total	ND		mg/kg	0.120	0.078	1	09/18/19 06:00	09/18/19 19:30	EPA 7471B	1,7471B	GD
Selenium, Total	3.57		mg/kg	1.48	0.191	1	09/17/19 19:27	09/18/19 23:20	EPA 3050B	1,6010D	MC
Silver, Total	0.222	J	mg/kg	0.740	0.209	1	09/17/19 19:27	09/18/19 23:20	EPA 3050B	1,6010D	MC

Project Name: 145 BUFFALO RIVER SITE
Lab Number: L1941761
Project Number: T0474-019-001
Report Date: 09/19/19

SAMPLE RESULTS

Lab ID: L1941761-09
Client ID: SB-9
Sample Location: 145 BUFFALO RIVER
Date Collected: 09/11/19 13:00
Date Received: 09/12/19
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											
Arsenic, Total	60.0		mg/kg	0.477	0.099	1	09/17/19 19:27	09/18/19 23:25	EPA 3050B	1,6010D	MC
Barium, Total	215		mg/kg	0.477	0.083	1	09/17/19 19:27	09/18/19 23:25	EPA 3050B	1,6010D	MC
Cadmium, Total	0.558		mg/kg	0.477	0.047	1	09/17/19 19:27	09/18/19 23:25	EPA 3050B	1,6010D	MC
Chromium, Total	8.21		mg/kg	0.477	0.046	1	09/17/19 19:27	09/18/19 23:25	EPA 3050B	1,6010D	MC
Lead, Total	190		mg/kg	2.38	0.128	1	09/17/19 19:27	09/18/19 23:25	EPA 3050B	1,6010D	MC
Mercury, Total	0.398		mg/kg	0.076	0.050	1	09/18/19 06:00	09/18/19 19:33	EPA 7471B	1,7471B	GD
Selenium, Total	1.61		mg/kg	0.953	0.123	1	09/17/19 19:27	09/18/19 23:25	EPA 3050B	1,6010D	MC
Silver, Total	0.281	J	mg/kg	0.477	0.135	1	09/17/19 19:27	09/18/19 23:25	EPA 3050B	1,6010D	MC

Project Name: 145 BUFFALO RIVER SITE
Project Number: T0474-019-001
Lab Number: L1941761
Report Date: 09/19/19

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): 02-04,06,08-09 Batch: WG1285225-1										
Arsenic, Total	ND		mg/kg	0.400	0.083	1	09/17/19 19:27	09/18/19 21:09	1,6010D	MC
Barium, Total	ND		mg/kg	0.400	0.070	1	09/17/19 19:27	09/18/19 21:09	1,6010D	MC
Cadmium, Total	ND		mg/kg	0.400	0.039	1	09/17/19 19:27	09/18/19 21:09	1,6010D	MC
Chromium, Total	ND		mg/kg	0.400	0.038	1	09/17/19 19:27	09/18/19 21:09	1,6010D	MC
Lead, Total	ND		mg/kg	2.00	0.107	1	09/17/19 19:27	09/18/19 21:09	1,6010D	MC
Selenium, Total	ND		mg/kg	0.800	0.103	1	09/17/19 19:27	09/18/19 21:09	1,6010D	MC
Silver, Total	ND		mg/kg	0.400	0.113	1	09/17/19 19:27	09/18/19 21:09	1,6010D	MC

Prep Information

Digestion Method: EPA 3050B

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 02-04,06,08-09 Batch: WG1285389-1										
Mercury, Total	ND		mg/kg	0.083	0.054	1	09/18/19 06:00	09/18/19 18:04	1,7471B	GD

Prep Information

Digestion Method: EPA 7471B

Lab Control Sample Analysis

Batch Quality Control

Project Name: 145 BUFFALO RIVER SITE

Project Number: T0474-019-001

Lab Number: L1941761

Report Date: 09/19/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 02-04,06,08-09 Batch: WG1285225-2 SRM Lot Number: D105-540								
Arsenic, Total	100		-		70-130	-		
Barium, Total	96		-		75-125	-		
Cadmium, Total	104		-		75-125	-		
Chromium, Total	91		-		70-130	-		
Lead, Total	94		-		71-128	-		
Selenium, Total	97		-		63-137	-		
Silver, Total	90		-		69-131	-		
Total Metals - Mansfield Lab Associated sample(s): 02-04,06,08-09 Batch: WG1285389-2 SRM Lot Number: D105-540								
Mercury, Total	100		-		60-141	-		

Matrix Spike Analysis
Batch Quality Control

Project Name: 145 BUFFALO RIVER SITE
Project Number: T0474-019-001

Lab Number: L1941761
Report Date: 09/19/19

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): 02-04,06,08-09 QC Batch ID: WG1285225-3 QC Sample: L1941721-01 Client ID: MS Sample												
Arsenic, Total	5.27	12.6	19.7	114		-	-		75-125	-		20
Barium, Total	36.2	210	257	105		-	-		75-125	-		20
Cadmium, Total	0.247J	5.36	5.93	110		-	-		75-125	-		20
Chromium, Total	32.1	21	58.3	124		-	-		75-125	-		20
Lead, Total	8.33	53.6	63.3	102		-	-		75-125	-		20
Selenium, Total	ND	12.6	11.8	93		-	-		75-125	-		20
Silver, Total	ND	31.6	31.2	99		-	-		75-125	-		20
Total Metals - Mansfield Lab Associated sample(s): 02-04,06,08-09 QC Batch ID: WG1285389-3 QC Sample: L1939649-05 Client ID: MS Sample												
Mercury, Total	ND	0.132	0.137	104		-	-		80-120	-		20

Lab Duplicate Analysis
Batch Quality Control

Project Name: 145 BUFFALO RIVER SITE
Project Number: T0474-019-001

Lab Number: L1941761
Report Date: 09/19/19

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 02-04,06,08-09 QC Batch ID: WG1285225-4 QC Sample: L1941721-01 Client ID: DUP Sample						
Arsenic, Total	5.27	5.95	mg/kg	12		20
Barium, Total	36.2	36.3	mg/kg	0		20
Cadmium, Total	0.247J	0.255J	mg/kg	NC		20
Chromium, Total	32.1	32.1	mg/kg	0		20
Lead, Total	8.33	8.41	mg/kg	1		20
Selenium, Total	ND	ND	mg/kg	NC		20
Silver, Total	ND	ND	mg/kg	NC		20
Total Metals - Mansfield Lab Associated sample(s): 02-04,06,08-09 QC Batch ID: WG1285389-4 QC Sample: L1939649-05 Client ID: DUP Sample						
Mercury, Total	ND	ND	mg/kg	NC		20

INORGANICS
&
MISCELLANEOUS

Project Name: 145 BUFFALO RIVER SITE
Project Number: T0474-019-001
Lab Number: L1941761
Report Date: 09/19/19

SAMPLE RESULTS

Lab ID: L1941761-01
Client ID: SB-1
Sample Location: 145 BUFFALO RIVER
Sample Depth:
Matrix: Soil

Date Collected: 09/11/19 09:00
Date Received: 09/12/19
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	58.6		%	0.100	NA	1	-	09/13/19 13:08	121,2540G	RI

Project Name: 145 BUFFALO RIVER SITE
Project Number: T0474-019-001
Lab Number: L1941761
Report Date: 09/19/19

SAMPLE RESULTS

Lab ID: L1941761-02
Client ID: SB-2
Sample Location: 145 BUFFALO RIVER
Sample Depth:
Matrix: Soil

Date Collected: 09/11/19 09:30
Date Received: 09/12/19
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	84.4		%	0.100	NA	1	-	09/13/19 13:08	121,2540G	RI

Project Name: 145 BUFFALO RIVER SITE
Project Number: T0474-019-001
Lab Number: L1941761
Report Date: 09/19/19

SAMPLE RESULTS

Lab ID: L1941761-03
Client ID: SB-3
Sample Location: 145 BUFFALO RIVER
Sample Depth:
Matrix: Soil

Date Collected: 09/11/19 10:00
Date Received: 09/12/19
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	80.5		%	0.100	NA	1	-	09/13/19 13:08	121,2540G	RI

Project Name: 145 BUFFALO RIVER SITE
Project Number: T0474-019-001
Lab Number: L1941761
Report Date: 09/19/19

SAMPLE RESULTS

Lab ID: L1941761-04
Client ID: SB-4
Sample Location: 145 BUFFALO RIVER
Sample Depth:
Matrix: Soil

Date Collected: 09/11/19 10:30
Date Received: 09/12/19
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	82.0		%	0.100	NA	1	-	09/13/19 13:08	121,2540G	RI

Project Name: 145 BUFFALO RIVER SITE
Project Number: T0474-019-001
Lab Number: L1941761
Report Date: 09/19/19

SAMPLE RESULTS

Lab ID: L1941761-05
Client ID: SB-5
Sample Location: 145 BUFFALO RIVER
Sample Depth:
Matrix: Soil

Date Collected: 09/11/19 11:00
Date Received: 09/12/19
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	85.6		%	0.100	NA	1	-	09/13/19 13:08	121,2540G	RI

Project Name: 145 BUFFALO RIVER SITE
Project Number: T0474-019-001
Lab Number: L1941761
Report Date: 09/19/19

SAMPLE RESULTS

Lab ID: L1941761-06
Client ID: SB-6
Sample Location: 145 BUFFALO RIVER
Sample Depth:
Matrix: Soil

Date Collected: 09/11/19 11:30
Date Received: 09/12/19
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	75.4		%	0.100	NA	1	-	09/13/19 13:08	121,2540G	RI
Cyanide, Total	24		mg/kg	1.3	0.28	1	09/13/19 12:35	09/13/19 15:00	1,9010C/9012B	LH

Project Name: 145 BUFFALO RIVER SITE
Project Number: T0474-019-001
Lab Number: L1941761
Report Date: 09/19/19

SAMPLE RESULTS

Lab ID: L1941761-07
Client ID: SB-7
Sample Location: 145 BUFFALO RIVER
Sample Depth:
Matrix: Soil

Date Collected: 09/11/19 12:00
Date Received: 09/12/19
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	58.1		%	0.100	NA	1	-	09/13/19 13:08	121,2540G	RI

Project Name: 145 BUFFALO RIVER SITE
Project Number: T0474-019-001
Lab Number: L1941761
Report Date: 09/19/19

SAMPLE RESULTS

Lab ID: L1941761-08
Client ID: SB-8
Sample Location: 145 BUFFALO RIVER
Sample Depth:
Matrix: Soil

Date Collected: 09/11/19 12:30
Date Received: 09/12/19
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	52.8		%	0.100	NA	1	-	09/13/19 13:08	121,2540G	RI
Cyanide, Total	98		mg/kg	8.9	1.9	5	09/13/19 12:35	09/13/19 15:23	1,9010C/9012B	LH

Project Name: 145 BUFFALO RIVER SITE
Project Number: T0474-019-001
Lab Number: L1941761
Report Date: 09/19/19

SAMPLE RESULTS

Lab ID: L1941761-09
Client ID: SB-9
Sample Location: 145 BUFFALO RIVER
Sample Depth:
Matrix: Soil

Date Collected: 09/11/19 13:00
Date Received: 09/12/19
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	82.6		%	0.100	NA	1	-	09/13/19 13:08	121,2540G	RI

Project Name: 145 BUFFALO RIVER SITE
Project Number: T0474-019-001
Lab Number: L1941761
Report Date: 09/19/19

SAMPLE RESULTS

Lab ID: L1941761-10
Client ID: SB-10
Sample Location: 145 BUFFALO RIVER
Sample Depth:
Matrix: Soil

Date Collected: 09/11/19 13:30
Date Received: 09/12/19
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	87.6		%	0.100	NA	1	-	09/13/19 13:08	121,2540G	RI

Project Name: 145 BUFFALO RIVER SITE
Project Number: T0474-019-001
Lab Number: L1941761
Report Date: 09/19/19

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab for sample(s): 06,08 Batch: WG1283846-1										
Cyanide, Total	ND		mg/kg	0.93	0.20	1	09/13/19 12:35	09/13/19 14:57	1,9010C/9012B	LH

Lab Control Sample Analysis

Batch Quality Control

Project Name: 145 BUFFALO RIVER SITE

Project Number: T0474-019-001

Lab Number: L1941761

Report Date: 09/19/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 06,08 Batch: WG1283846-2 WG1283846-3								
Cyanide, Total	**73**	Q	**67**	Q	80-120	9		35

Matrix Spike Analysis
Batch Quality Control

Project Name: 145 BUFFALO RIVER SITE
Project Number: T0474-019-001

Lab Number: L1941761
Report Date: 09/19/19

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 06,08 QC Batch ID: WG1283846-4 WG1283846-5 QC Sample: L1941850-01 Client ID: MS Sample												
Cyanide, Total	ND	10	10	95		10	95		75-125	0		35

Lab Duplicate Analysis

Batch Quality Control

Project Name: 145 BUFFALO RIVER SITE

Project Number: T0474-019-001

Lab Number: L1941761

Report Date: 09/19/19

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01-10 QC Batch ID: WG1283810-1 QC Sample: L1941699-01 Client ID: DUP Sample						
Solids, Total	95.3	94.6	%	1		20

Project Name: 145 BUFFALO RIVER SITE
Project Number: T0474-019-001

Lab Number: L1941761
Report Date: 09/19/19

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(*)
L1941761-01A	Plastic 2oz unpreserved for TS	A	NA		3.1	Y	Absent		TS(7)
L1941761-01B	Glass 60mL/2oz unpreserved	A	NA		3.1	Y	Absent		NYTCL-8082(14)
L1941761-02A	Plastic 2oz unpreserved for TS	A	NA		3.1	Y	Absent		TS(7)
L1941761-02B	Plastic 2oz unpreserved for TS	A	NA		3.1	Y	Absent		TS(7)
L1941761-02C	Metals Only-Glass 60mL/2oz unpreserved	A	NA		3.1	Y	Absent		AS-TI(180),BA-TI(180),AG-TI(180),CR-TI(180),PB-TI(180),SE-TI(180),HG-T(28),CD-TI(180)
L1941761-02D	Glass 120ml/4oz unpreserved	A	NA		3.1	Y	Absent		NYCP51-PAH(14),NYTCL-8082(14)
L1941761-02E	Glass 60mL/2oz unpreserved	A	NA		3.1	Y	Absent		ARCHIVE()
L1941761-03A	Plastic 2oz unpreserved for TS	A	NA		3.1	Y	Absent		TS(7)
L1941761-03B	Plastic 2oz unpreserved for TS	A	NA		3.1	Y	Absent		TS(7)
L1941761-03C	Metals Only-Glass 60mL/2oz unpreserved	A	NA		3.1	Y	Absent		AS-TI(180),BA-TI(180),AG-TI(180),CR-TI(180),PB-TI(180),SE-TI(180),HG-T(28),CD-TI(180)
L1941761-03D	Glass 60mL/2oz unpreserved	A	NA		3.1	Y	Absent		NYCP51-PAH(14),NYTCL-8082(14)
L1941761-03E	Glass 120ml/4oz unpreserved	A	NA		3.1	Y	Absent		NYCP51-PAH(14),NYTCL-8082(14)
L1941761-04A	Plastic 2oz unpreserved for TS	A	NA		3.1	Y	Absent		TS(7)
L1941761-04B	Plastic 2oz unpreserved for TS	A	NA		3.1	Y	Absent		TS(7)
L1941761-04C	Metals Only-Glass 60mL/2oz unpreserved	A	NA		3.1	Y	Absent		AS-TI(180),BA-TI(180),AG-TI(180),CR-TI(180),PB-TI(180),SE-TI(180),HG-T(28),CD-TI(180)
L1941761-04D	Glass 60mL/2oz unpreserved	A	NA		3.1	Y	Absent		NYCP51-PAH(14),NYTCL-8082(14)
L1941761-04E	Glass 120ml/4oz unpreserved	A	NA		3.1	Y	Absent		NYCP51-PAH(14),NYTCL-8082(14)
L1941761-05A	Plastic 2oz unpreserved for TS	A	NA		3.1	Y	Absent		TS(7)
L1941761-05B	Glass 60mL/2oz unpreserved	A	NA		3.1	Y	Absent		NYTCL-8082(14)
L1941761-06A	Plastic 2oz unpreserved for TS	A	NA		3.1	Y	Absent		TS(7)

*Values in parentheses indicate holding time in days

Project Name: 145 BUFFALO RIVER SITE
Project Number: T0474-019-001

Lab Number: L1941761
Report Date: 09/19/19

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L1941761-06B	Metals Only-Glass 60mL/2oz unpreserved	A	NA		3.1	Y	Absent		AS-TI(180),BA-TI(180),AG-TI(180),CR-TI(180),PB-TI(180),SE-TI(180),HG-T(28),CD-TI(180)
L1941761-06C	Glass 60mL/2oz unpreserved	A	NA		3.1	Y	Absent		TCN-9010(14),NYCP51-PAH(14),NYTCL-8082(14)
L1941761-06D	Glass 120ml/4oz unpreserved	A	NA		3.1	Y	Absent		TCN-9010(14),NYCP51-PAH(14),NYTCL-8082(14)
L1941761-07A	Plastic 2oz unpreserved for TS	A	NA		3.1	Y	Absent		TS(7)
L1941761-07B	Glass 60mL/2oz unpreserved	A	NA		3.1	Y	Absent		NYTCL-8082(14)
L1941761-08A	Plastic 2oz unpreserved for TS	A	NA		3.1	Y	Absent		TS(7)
L1941761-08B	Plastic 2oz unpreserved for TS	A	NA		3.1	Y	Absent		TS(7)
L1941761-08C	Metals Only-Glass 60mL/2oz unpreserved	A	NA		3.1	Y	Absent		AS-TI(180),BA-TI(180),AG-TI(180),CR-TI(180),PB-TI(180),SE-TI(180),HG-T(28),CD-TI(180)
L1941761-08D	Vial Large Septa unpreserved (4oz)	A	NA		3.1	Y	Absent		TCN-9010(14),NYCP51-PAH(14),NYTCL-8082(14)
L1941761-08E	Glass 120ml/4oz unpreserved	A	NA		3.1	Y	Absent		TCN-9010(14),NYCP51-PAH(14),NYTCL-8082(14)
L1941761-09A	Plastic 2oz unpreserved for TS	A	NA		3.1	Y	Absent		TS(7)
L1941761-09B	Plastic 2oz unpreserved for TS	A	NA		3.1	Y	Absent		TS(7)
L1941761-09C	Metals Only-Glass 60mL/2oz unpreserved	A	NA		3.1	Y	Absent		AS-TI(180),BA-TI(180),AG-TI(180),CR-TI(180),PB-TI(180),SE-TI(180),HG-T(28),CD-TI(180)
L1941761-09D	Glass 60mL/2oz unpreserved	A	NA		3.1	Y	Absent		NYCP51-PAH(14),NYTCL-8082(14)
L1941761-09E	Glass 120ml/4oz unpreserved	A	NA		3.1	Y	Absent		NYCP51-PAH(14),NYTCL-8082(14)
L1941761-10A	Plastic 2oz unpreserved for TS	A	NA		3.1	Y	Absent		TS(7)
L1941761-10B	Glass 60mL/2oz unpreserved	A	NA		3.1	Y	Absent		NYTCL-8082(14)
L1941761-11A	Glass 120ml/4oz unpreserved	A	NA		3.1	Y	Absent		HOLD-WETCHEM(),HOLD-METAL(180),HOLD-HG(28)
L1941761-12A	Glass 120ml/4oz unpreserved	A	NA		3.1	Y	Absent		HOLD-WETCHEM(),HOLD-METAL(180),HOLD-HG(28)
L1941761-13A	Glass 120ml/4oz unpreserved	A	NA		3.1	Y	Absent		HOLD-WETCHEM(),HOLD-METAL(180),HOLD-HG(28)

*Values in parentheses indicate holding time in days

Project Name:	145 BUFFALO RIVER SITE	**Lab Number:**	L1941761
Project Number:	T0474-019-001	**Report Date:**	09/19/19

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.
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.

Footnotes

Report Format: DU Report with 'J' Qualifiers

Project Name:	145 BUFFALO RIVER SITE	**Lab Number:**	L1941761
Project Number:	T0474-019-001	**Report Date:**	09/19/19

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

Terms

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

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

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

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

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

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. 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.

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 Identified Compounds (TICs).

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.

Report Format: DU Report with 'J' Qualifiers

REFERENCES

1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - IV, 2007.

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

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

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

Westborough Facility:

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

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

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.

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.

ALPHA ANALYTICAL

NEW YORK CHAIN OF CUSTODY

Westborough, MA 01581 — 8 Walkup Dr. — TEL: 508-898-9220 — FAX: 508-898-9193
Mansfield, MA 02048 — 320 Forbes Blvd — TEL: 508-822-9300 — FAX: 508-822-3288

Service Centers
Mahwah, NJ 07430: 35 Whitney Rd, Suite 5
Albany, NY 12205: 14 Walker Way
Tonawanda, NY 14150: 275 Cooper Ave, Suite 105

Page 1 of 2

Date Rec'd in Lab: 9/13/19

ALPHA Job #: L1941761

Client Information
Client: BENCHMARK ENV. SCI
Address: 2558 HAMBURG TPKE
BUFFALO, NY 14218
Phone: 716-856-0599
Fax:
Email: bmayback@trnkcyllc.com

Project Information
Project Name: 145 BUFFALO RIVER SITE
Project Location: 145 BUFFALO RIVER
Project # T0476-019-001
(Use Project name as Project #) ☐
Project Manager: BRYAN MAYBACK
ALPHAQuote #:

Turn-Around Time
Standard ☒ Due Date:
Rush (only if pre approved) ☐ # of Days:

These samples have been previously analyzed by Alpha ☐

Other project specific requirements/comments:

Please specify Metals or TAL.

Deliverables
☐ ASP-A ☐ ASP-B
☐ EQuIS (1 File) ☐ EQuIS (4 File)
☐ Other

Regulatory Requirement
☐ NY TOGS ☐ NY Part 375
☐ AWQ Standards ☐ NY CP-51
☐ NY Restricted Use ☐ Other
☐ NY Unrestricted Use
☐ NYC Sewer Discharge

Billing Information
☒ Same as Client Info
PO #

Disposal Site Information
Please identify below location of applicable disposal facilities.
Disposal Facility:
☐ NJ ☒ NY
☐ Other:

Sample Filtration
☐ Done
☐ Lab to do
Preservation
☐ Lab to do
(Please Specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	PAHs	RCRA Metals	PCBs	RCRA Metals + Cyanide					Sample Specific Comments	Total Bottle
41761-01	SB-1	9/11/19	900	SOIL	CS			X						ALL SAMPLES HAF	1
02	SB-2		930			X	X	X						TOTAL SOLID	3
03	SB-3		1000			X	X	X						BOTTLES IN	3
04	SB-4		1030			X	X	X						ADDITION TO	3
05	SB-5		1100					X						TOTAL BOTTLE	1
06	SB-6		1130			X		X	X					COUNT	3
07	SB-7		1200					X							1
08	SB-8		1230			X		X	X						3
09	SB-9		1300			X	X	X							3
10	SB-10		1330					X							1

Container Type: A A A A
Preservative: A A A A

Preservative Code:
A = None
B = HCl
C = HNO_3
D = H_2SO_4
E = NaOH
F = MeOH
G = $NaHSO_4$
H = $Na_2S_2O_3$
K/E = Zn Ac/NaOH
O = Other

Container Code
P = Plastic
A = Amber Glass
V = Vial
G = Glass
B = Bacteria Cup
C = Cube
O = Other
E = Encore
D = BOD Bottle

Westboro: Certification No: MA935
Mansfield: Certification No: MA015

Relinquished By:	Date/Time	Received By:	Date/Time
[signature]	9/12/19 1035	[signature] AAR	12Sep2019 1250
[signature] AAR	12Sep2019 1250	[signature]	9/13/19 01:30

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. BY EXECUTING THIS COC, THE CLIENT HAS READ AND AGREES TO BE BOUND BY ALPHA'S TERMS & CONDITIONS. (See reverse side.)

Form No: 01-25 HC (rev. 30-Sept-2013)

ALPHA ANALYTICAL

Westborough, MA 01581
8 Walkup Dr.
TEL: 508-898-9220
FAX: 508-898-9193

Mansfield, MA 02048
320 Forbes Blvd
TEL: 508-822-9300
FAX: 508-822-3288

NEW YORK CHAIN OF CUSTODY

Service Centers
Mahwah, NJ 07430: 35 Whitney Rd, Suite 5
Albany, NY 12205: 14 Walker Way
Tonawanda, NY 14150: 275 Cooper Ave, Suite 105

Page 2 of 2

Date Rec'd in Lab: 9/13/19

ALPHA Job #: L1941761

Client Information
Client: BENCHMARK ENV. SCI
Address: 2558 HAMBURG TURNPIKE
BUFFALO, NY 14218
Phone: 716 856 0599
Fax:
Email: bmayback@turnkeyllc.com

Project Information
Project Name: 145 BUFFALO RIVER SITE
Project Location: 145 BUFFALO RIVER
Project # T0474-019-001
(Use Project name as Project #) ☐
Project Manager: BRYAN MAYBACK
ALPHAQuote #:

Turn-Around Time
Standard ☒ Due Date:
Rush (only if pre approved) ☐ # of Days:

Deliverables
☐ ASP-A ☐ ASP-B
☐ EQuIS (1 File) ☐ EQuIS (4 File)
☐ Other

Regulatory Requirement
☐ NY TOGS ☐ NY Part 375
☐ AWQ Standards ☐ NY CP-51
☐ NY Restricted Use ☐ Other
☐ NY Unrestricted Use
☐ NYC Sewer Discharge

Billing Information
☐ Same as Client Info
PO #

Disposal Site Information
Please identify below location of applicable disposal facilities.
Disposal Facility:
☐ NJ ☐ NY
☐ Other:

These samples have been previously analyzed by Alpha ☐

Other project specific requirements/comments:

Please specify Metals or TAL.

ANALYSIS
RCRA METALS w/CYANIDE

Sample Filtration
☐ Done
☐ Lab to do
Preservation
☐ Lab to do
(Please Specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	Sample Specific Comments	Total Bottle
41761 - 11	SB-11 2-4 ft	9/11/19	1400	SOIL	CS	HOLD	1
12	SB-12 2-4 ft	↓	1415	↓	↓	HOLD	1
13	SB-13 2-4 ft	↓	1430	↓	↓	HOLD	1

Preservative Code:
A = None
B = HCl
C = HNO_3
D = H_2SO_4
E = NaOH
F = MeOH
G = $NaHSO_4$
H = $Na_2S_2O_3$
K/E = Zn Ac/NaOH
O = Other

Container Code
P = Plastic
A = Amber Glass
V = Vial
G = Glass
B = Bacteria Cup
C = Cube
O = Other
E = Encore
D = BOD Bottle

Westboro: Certification No: MA935
Mansfield: Certification No: MA015

Container Type: A
Preservative: A

Relinquished By:	Date/Time	Received By:	Date/Time
Chuck McDermott	9/12/19 1040	[illegible] NAL	12Sep2019 1250
[illegible] NAL	12Sep2019 1250	Lee	9/13/19 01:30

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. BY EXECUTING THIS COC, THE CLIENT HAS READ AND AGREES TO BE BOUND BY ALPHA'S TERMS & CONDITIONS. (See reverse side.)

Form No: 01-25 HC (rev. 30-Sept-2013)

ANALYTICAL REPORT

Lab Number:	L1945000
Client:	Benchmark & Turnkey Companies 2558 Hamburg Turnpike Suite 300 Buffalo, NY 14218
ATTN:	Bryan Mayback
Phone:	(716) 856-0599
Project Name:	145 BUFFALO RIVER SITE
Project Number:	T0474-019-001
Report Date:	10/04/19

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

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

Project Name: 145 BUFFALO RIVER SITE
Project Number: T0474-019-001

Lab Number: L1945000
Report Date: 10/04/19

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L1945000-01	SB-2	SOIL	145 BUFFALO RIVER	09/11/19 09:30	09/12/19
L1945000-02	SB-8	SOIL	145 BUFFALO RIVER	09/11/19 12:30	09/12/19
L1945000-03	SB-9	SOIL	145 BUFFALO RIVER	09/11/19 13:00	09/12/19

Project Name:	145 BUFFALO RIVER SITE	**Lab Number:**	L1945000
Project Number:	T0474-019-001	**Report Date:**	10/04/19

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:	145 BUFFALO RIVER SITE	**Lab Number:**	L1945000
Project Number:	T0474-019-001	**Report Date:**	10/04/19

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.

Sulfide / Cyanide, Reactive

L1945000-02 was analyzed with the method required holding time exceeded.

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: Lisa Westerlind

Title: Technical Director/Representative Date: 10/04/19

METALS

Project Name: 145 BUFFALO RIVER SITE
Lab Number: L1945000
Project Number: T0474-019-001
Report Date: 10/04/19

SAMPLE RESULTS

Lab ID: L1945000-01
Client ID: SB-2
Sample Location: 145 BUFFALO RIVER
Sample Depth:
Matrix: Soil

Date Collected: 09/11/19 09:30
Date Received: 09/12/19
Field Prep: Not Specified
TCLP/SPLP Ext. Date: 09/28/19 06:27

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
TCLP Metals by EPA 1311 - Mansfield Lab											
Arsenic, TCLP	0.144	J	mg/l	1.00	0.019	1	10/02/19 10:13	10/02/19 13:21	EPA 3015	1,6010D	PS

Project Name: 145 BUFFALO RIVER SITE
Lab Number: L1945000
Project Number: T0474-019-001
Report Date: 10/04/19

SAMPLE RESULTS

Lab ID: L1945000-03
Client ID: SB-9
Sample Location: 145 BUFFALO RIVER
Sample Depth:
Matrix: Soil

Date Collected: 09/11/19 13:00
Date Received: 09/12/19
Field Prep: Not Specified
TCLP/SPLP Ext. Date: 09/28/19 06:27

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
TCLP Metals by EPA 1311 - Mansfield Lab											
Arsenic, TCLP	ND		mg/l	1.00	0.019	1	10/03/19 13:45	10/03/19 20:26	EPA 3015	1,6010D	MC

Project Name: 145 BUFFALO RIVER SITE
Project Number: T0474-019-001
Lab Number: L1945000
Report Date: 10/04/19

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 Batch: WG1291156-1										
Arsenic, TCLP	ND		mg/l	1.00	0.019	1	10/02/19 10:13	10/02/19 12:25	1,6010D	PS

Prep Information

Digestion Method: EPA 3015
TCLP/SPLP Extraction Date: 09/26/19 15:33

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: WG1291845-1										
Arsenic, TCLP	0.034	J	mg/l	1.00	0.019	1	10/03/19 13:45	10/03/19 20:09	1,6010D	MC

Prep Information

Digestion Method: EPA 3015
TCLP/SPLP Extraction Date: 09/26/19 17:04

Lab Control Sample Analysis

Batch Quality Control

Project Name: 145 BUFFALO RIVER SITE

Project Number: T0474-019-001

Lab Number: L1945000

Report Date: 10/04/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
TCLP Metals by EPA 1311 - Mansfield Lab Associated sample(s): 01 Batch: WG1291156-2								
Arsenic, TCLP	109		-		75-125	-		20
TCLP Metals by EPA 1311 - Mansfield Lab Associated sample(s): 03 Batch: WG1291845-2								
Arsenic, TCLP	110		-		75-125	-		20

Matrix Spike Analysis
Batch Quality Control

Project Name: 145 BUFFALO RIVER SITE
Project Number: T0474-019-001

Lab Number: L1945000
Report Date: 10/04/19

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 QC Batch ID: WG1291156-3 QC Sample: L1944557-01 Client ID: MS Sample												
Arsenic, TCLP	ND	1.2	1.34	112		-	-		75-125	-		20
TCLP Metals by EPA 1311 - Mansfield Lab Associated sample(s): 03 QC Batch ID: WG1291845-3 QC Sample: L1945000-03 Client ID: SB-9												
Arsenic, TCLP	ND	1.2	1.35	112		-	-		75-125	-		20

Lab Duplicate Analysis

Batch Quality Control

Project Name: 145 BUFFALO RIVER SITE

Project Number: T0474-019-001

Lab Number: L1945000

Report Date: 10/04/19

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
TCLP Metals by EPA 1311 - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1291156-4 QC Sample: L1944557-01 Client ID: DUP Sample						
Arsenic, TCLP	ND	ND	mg/l	NC		20
TCLP Metals by EPA 1311 - Mansfield Lab Associated sample(s): 03 QC Batch ID: WG1291845-4 QC Sample: L1945000-03 Client ID: SB-9						
Arsenic, TCLP	ND	ND	mg/l	NC		20

INORGANICS
&
MISCELLANEOUS

Project Name: 145 BUFFALO RIVER SITE
Project Number: T0474-019-001
Lab Number: L1945000
Report Date: 10/04/19

SAMPLE RESULTS

Lab ID: L1945000-02
Client ID: SB-8
Sample Location: 145 BUFFALO RIVER
Sample Depth:
Matrix: Soil

Date Collected: 09/11/19 12:30
Date Received: 09/12/19
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Cyanide, Reactive	ND		mg/kg	10	10.	1	09/30/19 04:17	09/30/19 05:36	125,7.3	KF
Sulfide, Reactive	11		mg/kg	10	10.	1	09/30/19 04:17	09/30/19 05:29	125,7.3	KF

Project Name: 145 BUFFALO RIVER SITE
Project Number: T0474-019-001
Lab Number: L1945000
Report Date: 10/04/19

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab for sample(s): 02 Batch: WG1290066-1										
Sulfide, Reactive	ND		mg/kg	10	10.	1	09/30/19 04:17	09/30/19 05:28	125,7.3	KF
General Chemistry - Westborough Lab for sample(s): 02 Batch: WG1290067-1										
Cyanide, Reactive	ND		mg/kg	10	10.	1	09/30/19 04:17	09/30/19 05:34	125,7.3	KF

Lab Control Sample Analysis

Batch Quality Control

Project Name: 145 BUFFALO RIVER SITE

Project Number: T0474-019-001

Lab Number: L1945000

Report Date: 10/04/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 02 Batch: WG1290066-2								
Sulfide, Reactive	85		-		60-125	-		40
General Chemistry - Westborough Lab Associated sample(s): 02 Batch: WG1290067-2								
Cyanide, Reactive	66		-		30-125	-		40

Lab Duplicate Analysis

Batch Quality Control

Project Name: 145 BUFFALO RIVER SITE

Project Number: T0474-019-001

Lab Number: L1945000

Report Date: 10/04/19

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 02 QC Batch ID: WG1290066-3 QC Sample: L1944891-01 Client ID: DUP Sample						
Sulfide, Reactive	ND	ND	mg/kg	NC		40
General Chemistry - Westborough Lab Associated sample(s): 02 QC Batch ID: WG1290067-3 QC Sample: L1944891-01 Client ID: DUP Sample						
Cyanide, Reactive	ND	ND	mg/kg	NC		40

Project Name: 145 BUFFALO RIVER SITE
Project Number: T0474-019-001

Lab Number: L1945000
Report Date: 10/04/19

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(*)
L1945000-01A	Glass 120ml/4oz unpreserved	A	NA		3.1	Y	Absent		-
L1945000-01X	Plastic 120ml HNO3 preserved Extracts	A	NA		3.1	Y	Absent		AS-CI(180)
L1945000-01X9	Tumble Vessel	A	NA		3.1	Y	Absent		-
L1945000-02A	Glass 120ml/4oz unpreserved	A	NA		3.1	Y	Absent		REACTS(14),REACTCN(14)
L1945000-03A	Glass 120ml/4oz unpreserved	A	NA		3.1	Y	Absent		-
L1945000-03X	Plastic 120ml HNO3 preserved Extracts	A	NA		3.1	Y	Absent		AS-CI(180)
L1945000-03X9	Tumble Vessel	A	NA		3.1	Y	Absent		-

*Values in parentheses indicate holding time in days

Project Name:	145 BUFFALO RIVER SITE	**Lab Number:**	L1945000
Project Number:	T0474-019-001	**Report Date:**	10/04/19

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.

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.

Footnotes

Report Format: DU Report with 'J' Qualifiers

Project Name:	145 BUFFALO RIVER SITE	**Lab Number:**	L1945000
Project Number:	T0474-019-001	**Report Date:**	10/04/19

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

Terms

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

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

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

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

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

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. 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.

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 Identified Compounds (TICs).

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.

Report Format: DU Report with 'J' Qualifiers

REFERENCES

1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - IV, 2007.

125 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates IIIA, April 1998.

LIMITATION OF LIABILITIES

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

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

Certification Information

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

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

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

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

Westborough Facility:

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

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

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.

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.

L1945000 EO 9/27/19

ALPHA

NEW YORK CHAIN OF CUSTODY

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Mahwah, NJ 07430: 35 Whitney Rd, Suite 5
Albany, NY 12205: 14 Walker Way
Tonawanda, NY 14150: 275 Cooper Ave, Suite 105

Page 1 of 2

Date Rec'd in Lab: 9/13/19

ALPHA Job #: L1941761

Client Information
Client: BENCHMARK ENV. SCI.
Address: 2558 HAMBURG TPKE
BUFFALO NY 14218
Phone: 716-856-0599
Fax:
Email: bmayback@trnkeyllc.com

Project Information
Project Name: 145 BUFFALO RIVER SITE
Project Location: 145 BUFFALO RIVER
Project # T0476-019-001
(Use Project name as Project #)
Project Manager: BRYAN MAYBACK
ALPHAQuote #:

Turn-Around Time
Standard [X] Due Date:
Rush (only if pre approved) [ ] # of Days:

Deliverables
[ ] ASP-A [ ] ASP-B
[ ] EQuIS (1 File) [ ] EQuIS (4 File)
[ ] Other

Regulatory Requirement
[ ] NY TOGS [ ] NY Part 375
[ ] AWQ Standards [ ] NY CP-51
[ ] NY Restricted Use [ ] Other
[ ] NY Unrestricted Use TCLP-As
[ ] NYC Sewer Discharge

Billing Information
[X] Same as Client Info
PO #

Disposal Site Information
Please identify below location of applicable disposal facilities.
Disposal Facility:
[ ] NJ [X] NY
[ ] Other:

These samples have been previously analyzed by Alpha [ ]

Other project specific requirements/comments:

45000-01

Please specify Metals or TAL.

ANALYSIS

REACT

Sample Filtration
[ ] Lab to do
Preservation
[ ] Lab to do
(Please Specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	PAHs	RCRA Metals	PCBs	RCRA Metals + CYANIDE				Sample Specific Comments	Total Bottles
41961 01	SB-1	9/11/19	900	SOIL	CS			X					ALL SAMPLES HAS	1
02	SB-2		930			X	X	X		X			TOTAL SOLID	3
03	SB-3		1000			X	X	X					BOTTLES IN	3
04	SB-4		1030			X	X	X					ADDITION TO	3
05	SB-5		1100					X					TOTAL BOTTLE	1
06	SB-6		1130			X		X	X				COUNT	3
07	SB-7		1200					X						1
-02 08	SB-8		1230			X		X	X		X			3
-03 09	SB-9		1300			X	X	X		X				3
10	SB-10		1330					X						1

Preservative Code:
A = None
B = HCl
C = HNO_3
D = H_2SO_4
E = NaOH
F = MeOH
G = $NaHSO_4$
H = $Na_2S_2O_3$
K/E = Zn Ac/NaOH
O = Other

Container Code
P = Plastic
A = Amber Glass
V = Vial
G = Glass
B = Bacteria Cup
C = Cube
O = Other
E = Encore
D = BOD Bottle

Westboro: Certification No: MA935
Mansfield: Certification No: MA015

Container Type	A	A	A	A	
Preservative	A	A	A	A	

Relinquished By:	Date/Time	Received By:	Date/Time
	9/12/19 1035		12/9/2019 1250
	12/9/2019 1250		9/13/19 01:30

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. BY EXECUTING THIS COC, THE CLIENT HAS READ AND AGREES TO BE BOUND BY ALPHA'S TERMS & CONDITIONS. (See reverse side.)

Form No: 01-25 HC (rev. 30-Sept-2013)

ANALYTICAL REPORT

Lab Number:	L1941760
Client:	Benchmark & Turnkey Companies 2558 Hamburg Turnpike Suite 300 Buffalo, NY 14218
ATTN:	Bryan Mayback
Phone:	(716) 856-0599
Project Name:	145 BUFFALO RIVER SITE
Project Number:	T0474-019-001
Report Date:	09/19/19

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

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

Project Name: 145 BUFFALO RIVER SITE
Project Number: T0474-019-001

Lab Number: L1941760
Report Date: 09/19/19

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L1941760-01	MP-1	WATER	145 BUFFALO RIVER	09/11/19 16:30	09/12/19
L1941760-02	SB-3W	WATER	145 BUFFALO RIVER	09/11/19 15:00	09/12/19
L1941760-03	SB-6W	WATER	145 BUFFALO RIVER	09/11/19 15:30	09/12/19
L1941760-04	SB-10W	WATER	145 BUFFALO RIVER	09/11/19 16:00	09/12/19
L1941760-05	TRIP BLANK	WATER	145 BUFFALO RIVER	09/11/19 00:00	09/12/19

Project Name:	145 BUFFALO RIVER SITE	**Lab Number:**	L1941760
Project Number:	T0474-019-001	**Report Date:**	09/19/19

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:	145 BUFFALO RIVER SITE	**Lab Number:**	L1941760
Project Number:	T0474-019-001	**Report Date:**	09/19/19

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.

Sample Receipt

The analyses performed were specified by the client.

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: Cristin Walker

Title: Technical Director/Representative Date: 09/19/19

ORGANICS

VOLATILES

Project Name: 145 BUFFALO RIVER SITE
Lab Number: L1941760
Project Number: T0474-019-001
Report Date: 09/19/19

SAMPLE RESULTS

Lab ID: L1941760-01
Client ID: MP-1
Sample Location: 145 BUFFALO RIVER

Date Collected: 09/11/19 16:30
Date Received: 09/12/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 09/18/19 13:54
Analyst: PK

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	2.5	0.70	1
1,1-Dichloroethane	ND		ug/l	2.5	0.70	1
Chloroform	ND		ug/l	2.5	0.70	1
Carbon tetrachloride	ND		ug/l	0.50	0.13	1
1,2-Dichloropropane	ND		ug/l	1.0	0.14	1
Dibromochloromethane	ND		ug/l	0.50	0.15	1
1,1,2-Trichloroethane	ND		ug/l	1.5	0.50	1
Tetrachloroethene	ND		ug/l	0.50	0.18	1
Chlorobenzene	ND		ug/l	2.5	0.70	1
Trichlorofluoromethane	ND		ug/l	2.5	0.70	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
1,1,1-Trichloroethane	ND		ug/l	2.5	0.70	1
Bromodichloromethane	ND		ug/l	0.50	0.19	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	0.16	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	0.14	1
Bromoform	ND		ug/l	2.0	0.65	1
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	0.17	1
Benzene	ND		ug/l	0.50	0.16	1
Toluene	ND		ug/l	2.5	0.70	1
Ethylbenzene	ND		ug/l	2.5	0.70	1
Chloromethane	ND		ug/l	2.5	0.70	1
Bromomethane	ND		ug/l	2.5	0.70	1
Vinyl chloride	ND		ug/l	1.0	0.07	1
Chloroethane	ND		ug/l	2.5	0.70	1
1,1-Dichloroethene	ND		ug/l	0.50	0.17	1
trans-1,2-Dichloroethene	ND		ug/l	2.5	0.70	1
Trichloroethene	ND		ug/l	0.50	0.18	1
1,2-Dichlorobenzene	ND		ug/l	2.5	0.70	1

Project Name: 145 BUFFALO RIVER SITE **Lab Number:** L1941760

Project Number: T0474-019-001 **Report Date:** 09/19/19

SAMPLE RESULTS

Lab ID: L1941760-01 Date Collected: 09/11/19 16:30

Client ID: MP-1 Date Received: 09/12/19

Sample Location: 145 BUFFALO RIVER Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,3-Dichlorobenzene	ND		ug/l	2.5	0.70	1
1,4-Dichlorobenzene	ND		ug/l	2.5	0.70	1
Methyl tert butyl ether	ND		ug/l	2.5	0.70	1
p/m-Xylene	ND		ug/l	2.5	0.70	1
o-Xylene	ND		ug/l	2.5	0.70	1
cis-1,2-Dichloroethene	ND		ug/l	2.5	0.70	1
Styrene	ND		ug/l	2.5	0.70	1
Dichlorodifluoromethane	ND		ug/l	5.0	1.0	1
Acetone	12		ug/l	5.0	1.5	1
Carbon disulfide	ND		ug/l	5.0	1.0	1
2-Butanone	ND		ug/l	5.0	1.9	1
4-Methyl-2-pentanone	ND		ug/l	5.0	1.0	1
2-Hexanone	ND		ug/l	5.0	1.0	1
Bromochloromethane	ND		ug/l	2.5	0.70	1
1,2-Dibromoethane	ND		ug/l	2.0	0.65	1
n-Butylbenzene	ND		ug/l	2.5	0.70	1
sec-Butylbenzene	ND		ug/l	2.5	0.70	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	0.70	1
Isopropylbenzene	ND		ug/l	2.5	0.70	1
p-Isopropyltoluene	ND		ug/l	2.5	0.70	1
n-Propylbenzene	ND		ug/l	2.5	0.70	1
1,2,3-Trichlorobenzene	ND		ug/l	2.5	0.70	1
1,2,4-Trichlorobenzene	ND		ug/l	2.5	0.70	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.70	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.70	1
Methyl Acetate	ND		ug/l	2.0	0.23	1
Cyclohexane	ND		ug/l	10	0.27	1
1,4-Dioxane	ND		ug/l	250	61.	1
Freon-113	ND		ug/l	2.5	0.70	1
Methyl cyclohexane	ND		ug/l	10	0.40	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	103		70-130
Toluene-d8	95		70-130
4-Bromofluorobenzene	86		70-130
Dibromofluoromethane	102		70-130

Project Name: 145 BUFFALO RIVER SITE
Lab Number: L1941760
Project Number: T0474-019-001
Report Date: 09/19/19

SAMPLE RESULTS

Lab ID: L1941760-02
Client ID: SB-3W
Sample Location: 145 BUFFALO RIVER

Date Collected: 09/11/19 15:00
Date Received: 09/12/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 09/18/19 14:19
Analyst: PK

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	2.5	0.70	1
1,1-Dichloroethane	ND		ug/l	2.5	0.70	1
Chloroform	ND		ug/l	2.5	0.70	1
Carbon tetrachloride	ND		ug/l	0.50	0.13	1
1,2-Dichloropropane	ND		ug/l	1.0	0.14	1
Dibromochloromethane	ND		ug/l	0.50	0.15	1
1,1,2-Trichloroethane	ND		ug/l	1.5	0.50	1
Tetrachloroethene	ND		ug/l	0.50	0.18	1
Chlorobenzene	ND		ug/l	2.5	0.70	1
Trichlorofluoromethane	ND		ug/l	2.5	0.70	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
1,1,1-Trichloroethane	ND		ug/l	2.5	0.70	1
Bromodichloromethane	ND		ug/l	0.50	0.19	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	0.16	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	0.14	1
Bromoform	ND		ug/l	2.0	0.65	1
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	0.17	1
Benzene	ND		ug/l	0.50	0.16	1
Toluene	ND		ug/l	2.5	0.70	1
Ethylbenzene	ND		ug/l	2.5	0.70	1
Chloromethane	ND		ug/l	2.5	0.70	1
Bromomethane	ND		ug/l	2.5	0.70	1
Vinyl chloride	ND		ug/l	1.0	0.07	1
Chloroethane	ND		ug/l	2.5	0.70	1
1,1-Dichloroethene	ND		ug/l	0.50	0.17	1
trans-1,2-Dichloroethene	ND		ug/l	2.5	0.70	1
Trichloroethene	ND		ug/l	0.50	0.18	1
1,2-Dichlorobenzene	ND		ug/l	2.5	0.70	1

Project Name: 145 BUFFALO RIVER SITE **Lab Number:** L1941760

Project Number: T0474-019-001 **Report Date:** 09/19/19

SAMPLE RESULTS

Lab ID: L1941760-02 Date Collected: 09/11/19 15:00

Client ID: SB-3W Date Received: 09/12/19

Sample Location: 145 BUFFALO RIVER Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,3-Dichlorobenzene	ND		ug/l	2.5	0.70	1
1,4-Dichlorobenzene	ND		ug/l	2.5	0.70	1
Methyl tert butyl ether	ND		ug/l	2.5	0.70	1
p/m-Xylene	ND		ug/l	2.5	0.70	1
o-Xylene	ND		ug/l	2.5	0.70	1
cis-1,2-Dichloroethene	ND		ug/l	2.5	0.70	1
Styrene	ND		ug/l	2.5	0.70	1
Dichlorodifluoromethane	ND		ug/l	5.0	1.0	1
Acetone	3.8	J	ug/l	5.0	1.5	1
Carbon disulfide	ND		ug/l	5.0	1.0	1
2-Butanone	ND		ug/l	5.0	1.9	1
4-Methyl-2-pentanone	ND		ug/l	5.0	1.0	1
2-Hexanone	ND		ug/l	5.0	1.0	1
Bromochloromethane	ND		ug/l	2.5	0.70	1
1,2-Dibromoethane	ND		ug/l	2.0	0.65	1
n-Butylbenzene	ND		ug/l	2.5	0.70	1
sec-Butylbenzene	ND		ug/l	2.5	0.70	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	0.70	1
Isopropylbenzene	ND		ug/l	2.5	0.70	1
p-Isopropyltoluene	ND		ug/l	2.5	0.70	1
n-Propylbenzene	ND		ug/l	2.5	0.70	1
1,2,3-Trichlorobenzene	ND		ug/l	2.5	0.70	1
1,2,4-Trichlorobenzene	ND		ug/l	2.5	0.70	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.70	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.70	1
Methyl Acetate	ND		ug/l	2.0	0.23	1
Cyclohexane	ND		ug/l	10	0.27	1
1,4-Dioxane	ND		ug/l	250	61.	1
Freon-113	ND		ug/l	2.5	0.70	1
Methyl cyclohexane	ND		ug/l	10	0.40	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	100		70-130
Toluene-d8	96		70-130
4-Bromofluorobenzene	89		70-130
Dibromofluoromethane	101		70-130

Project Name: 145 BUFFALO RIVER SITE
Project Number: T0474-019-001
Lab Number: L1941760
Report Date: 09/19/19

SAMPLE RESULTS

Lab ID: L1941760-03
Client ID: SB-6W
Sample Location: 145 BUFFALO RIVER

Date Collected: 09/11/19 15:30
Date Received: 09/12/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 09/18/19 14:44
Analyst: PK

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	2.5	0.70	1
1,1-Dichloroethane	ND		ug/l	2.5	0.70	1
Chloroform	ND		ug/l	2.5	0.70	1
Carbon tetrachloride	ND		ug/l	0.50	0.13	1
1,2-Dichloropropane	ND		ug/l	1.0	0.14	1
Dibromochloromethane	ND		ug/l	0.50	0.15	1
1,1,2-Trichloroethane	ND		ug/l	1.5	0.50	1
Tetrachloroethene	ND		ug/l	0.50	0.18	1
Chlorobenzene	ND		ug/l	2.5	0.70	1
Trichlorofluoromethane	ND		ug/l	2.5	0.70	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
1,1,1-Trichloroethane	ND		ug/l	2.5	0.70	1
Bromodichloromethane	ND		ug/l	0.50	0.19	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	0.16	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	0.14	1
Bromoform	ND		ug/l	2.0	0.65	1
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	0.17	1
Benzene	ND		ug/l	0.50	0.16	1
Toluene	ND		ug/l	2.5	0.70	1
Ethylbenzene	ND		ug/l	2.5	0.70	1
Chloromethane	ND		ug/l	2.5	0.70	1
Bromomethane	ND		ug/l	2.5	0.70	1
Vinyl chloride	ND		ug/l	1.0	0.07	1
Chloroethane	ND		ug/l	2.5	0.70	1
1,1-Dichloroethene	ND		ug/l	0.50	0.17	1
trans-1,2-Dichloroethene	ND		ug/l	2.5	0.70	1
Trichloroethene	ND		ug/l	0.50	0.18	1
1,2-Dichlorobenzene	ND		ug/l	2.5	0.70	1

Project Name: 145 BUFFALO RIVER SITE **Lab Number:** L1941760

Project Number: T0474-019-001 **Report Date:** 09/19/19

SAMPLE RESULTS

Lab ID: L1941760-03 Date Collected: 09/11/19 15:30

Client ID: SB-6W Date Received: 09/12/19

Sample Location: 145 BUFFALO RIVER Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,3-Dichlorobenzene	ND		ug/l	2.5	0.70	1
1,4-Dichlorobenzene	ND		ug/l	2.5	0.70	1
Methyl tert butyl ether	ND		ug/l	2.5	0.70	1
p/m-Xylene	ND		ug/l	2.5	0.70	1
o-Xylene	ND		ug/l	2.5	0.70	1
cis-1,2-Dichloroethene	ND		ug/l	2.5	0.70	1
Styrene	ND		ug/l	2.5	0.70	1
Dichlorodifluoromethane	ND		ug/l	5.0	1.0	1
Acetone	8.9		ug/l	5.0	1.5	1
Carbon disulfide	ND		ug/l	5.0	1.0	1
2-Butanone	ND		ug/l	5.0	1.9	1
4-Methyl-2-pentanone	ND		ug/l	5.0	1.0	1
2-Hexanone	ND		ug/l	5.0	1.0	1
Bromochloromethane	ND		ug/l	2.5	0.70	1
1,2-Dibromoethane	ND		ug/l	2.0	0.65	1
n-Butylbenzene	ND		ug/l	2.5	0.70	1
sec-Butylbenzene	ND		ug/l	2.5	0.70	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	0.70	1
Isopropylbenzene	ND		ug/l	2.5	0.70	1
p-Isopropyltoluene	ND		ug/l	2.5	0.70	1
n-Propylbenzene	ND		ug/l	2.5	0.70	1
1,2,3-Trichlorobenzene	ND		ug/l	2.5	0.70	1
1,2,4-Trichlorobenzene	ND		ug/l	2.5	0.70	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.70	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.70	1
Methyl Acetate	ND		ug/l	2.0	0.23	1
Cyclohexane	ND		ug/l	10	0.27	1
1,4-Dioxane	ND		ug/l	250	61.	1
Freon-113	ND		ug/l	2.5	0.70	1
Methyl cyclohexane	ND		ug/l	10	0.40	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	103		70-130
Toluene-d8	95		70-130
4-Bromofluorobenzene	87		70-130
Dibromofluoromethane	102		70-130

Project Name: 145 BUFFALO RIVER SITE
Project Number: T0474-019-001
Lab Number: L1941760
Report Date: 09/19/19

SAMPLE RESULTS

Lab ID: L1941760-04
Client ID: SB-10W
Sample Location: 145 BUFFALO RIVER

Date Collected: 09/11/19 16:00
Date Received: 09/12/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 09/18/19 15:09
Analyst: PK

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	2.5	0.70	1
1,1-Dichloroethane	ND		ug/l	2.5	0.70	1
Chloroform	ND		ug/l	2.5	0.70	1
Carbon tetrachloride	ND		ug/l	0.50	0.13	1
1,2-Dichloropropane	ND		ug/l	1.0	0.14	1
Dibromochloromethane	ND		ug/l	0.50	0.15	1
1,1,2-Trichloroethane	ND		ug/l	1.5	0.50	1
Tetrachloroethene	ND		ug/l	0.50	0.18	1
Chlorobenzene	ND		ug/l	2.5	0.70	1
Trichlorofluoromethane	ND		ug/l	2.5	0.70	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
1,1,1-Trichloroethane	ND		ug/l	2.5	0.70	1
Bromodichloromethane	ND		ug/l	0.50	0.19	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	0.16	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	0.14	1
Bromoform	ND		ug/l	2.0	0.65	1
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	0.17	1
Benzene	ND		ug/l	0.50	0.16	1
Toluene	ND		ug/l	2.5	0.70	1
Ethylbenzene	ND		ug/l	2.5	0.70	1
Chloromethane	ND		ug/l	2.5	0.70	1
Bromomethane	ND		ug/l	2.5	0.70	1
Vinyl chloride	ND		ug/l	1.0	0.07	1
Chloroethane	ND		ug/l	2.5	0.70	1
1,1-Dichloroethene	ND		ug/l	0.50	0.17	1
trans-1,2-Dichloroethene	ND		ug/l	2.5	0.70	1
Trichloroethene	ND		ug/l	0.50	0.18	1
1,2-Dichlorobenzene	ND		ug/l	2.5	0.70	1

Project Name: 145 BUFFALO RIVER SITE **Lab Number:** L1941760

Project Number: T0474-019-001 **Report Date:** 09/19/19

SAMPLE RESULTS

Lab ID: L1941760-04 Date Collected: 09/11/19 16:00

Client ID: SB-10W Date Received: 09/12/19

Sample Location: 145 BUFFALO RIVER Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,3-Dichlorobenzene	ND		ug/l	2.5	0.70	1
1,4-Dichlorobenzene	ND		ug/l	2.5	0.70	1
Methyl tert butyl ether	ND		ug/l	2.5	0.70	1
p/m-Xylene	ND		ug/l	2.5	0.70	1
o-Xylene	ND		ug/l	2.5	0.70	1
cis-1,2-Dichloroethene	ND		ug/l	2.5	0.70	1
Styrene	ND		ug/l	2.5	0.70	1
Dichlorodifluoromethane	ND		ug/l	5.0	1.0	1
Acetone	120		ug/l	5.0	1.5	1
Carbon disulfide	ND		ug/l	5.0	1.0	1
2-Butanone	ND		ug/l	5.0	1.9	1
4-Methyl-2-pentanone	ND		ug/l	5.0	1.0	1
2-Hexanone	ND		ug/l	5.0	1.0	1
Bromochloromethane	ND		ug/l	2.5	0.70	1
1,2-Dibromoethane	ND		ug/l	2.0	0.65	1
n-Butylbenzene	ND		ug/l	2.5	0.70	1
sec-Butylbenzene	ND		ug/l	2.5	0.70	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	0.70	1
Isopropylbenzene	ND		ug/l	2.5	0.70	1
p-Isopropyltoluene	ND		ug/l	2.5	0.70	1
n-Propylbenzene	ND		ug/l	2.5	0.70	1
1,2,3-Trichlorobenzene	ND		ug/l	2.5	0.70	1
1,2,4-Trichlorobenzene	ND		ug/l	2.5	0.70	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.70	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.70	1
Methyl Acetate	ND		ug/l	2.0	0.23	1
Cyclohexane	ND		ug/l	10	0.27	1
1,4-Dioxane	ND		ug/l	250	61.	1
Freon-113	ND		ug/l	2.5	0.70	1
Methyl cyclohexane	ND		ug/l	10	0.40	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	103		70-130
Toluene-d8	96		70-130
4-Bromofluorobenzene	82		70-130
Dibromofluoromethane	103		70-130

Project Name: 145 BUFFALO RIVER SITE **Lab Number:** L1941760

Project Number: T0474-019-001 **Report Date:** 09/19/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 09/18/19 08:30
Analyst: PD

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01-04 Batch: WG1285576-5					
Methylene chloride	ND		ug/l	2.5	0.70
1,1-Dichloroethane	ND		ug/l	2.5	0.70
Chloroform	ND		ug/l	2.5	0.70
Carbon tetrachloride	ND		ug/l	0.50	0.13
1,2-Dichloropropane	ND		ug/l	1.0	0.14
Dibromochloromethane	ND		ug/l	0.50	0.15
1,1,2-Trichloroethane	ND		ug/l	1.5	0.50
Tetrachloroethene	ND		ug/l	0.50	0.18
Chlorobenzene	ND		ug/l	2.5	0.70
Trichlorofluoromethane	ND		ug/l	2.5	0.70
1,2-Dichloroethane	ND		ug/l	0.50	0.13
1,1,1-Trichloroethane	ND		ug/l	2.5	0.70
Bromodichloromethane	ND		ug/l	0.50	0.19
trans-1,3-Dichloropropene	ND		ug/l	0.50	0.16
cis-1,3-Dichloropropene	ND		ug/l	0.50	0.14
Bromoform	ND		ug/l	2.0	0.65
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	0.17
Benzene	ND		ug/l	0.50	0.16
Toluene	ND		ug/l	2.5	0.70
Ethylbenzene	ND		ug/l	2.5	0.70
Chloromethane	ND		ug/l	2.5	0.70
Bromomethane	ND		ug/l	2.5	0.70
Vinyl chloride	ND		ug/l	1.0	0.07
Chloroethane	ND		ug/l	2.5	0.70
1,1-Dichloroethene	ND		ug/l	0.50	0.17
trans-1,2-Dichloroethene	ND		ug/l	2.5	0.70
Trichloroethene	ND		ug/l	0.50	0.18
1,2-Dichlorobenzene	ND		ug/l	2.5	0.70
1,3-Dichlorobenzene	ND		ug/l	2.5	0.70

Project Name: 145 BUFFALO RIVER SITE
Project Number: T0474-019-001
Lab Number: L1941760
Report Date: 09/19/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 09/18/19 08:30
Analyst: PD

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01-04 Batch: WG1285576-5					
1,4-Dichlorobenzene	ND		ug/l	2.5	0.70
Methyl tert butyl ether	ND		ug/l	2.5	0.70
p/m-Xylene	ND		ug/l	2.5	0.70
o-Xylene	ND		ug/l	2.5	0.70
cis-1,2-Dichloroethene	ND		ug/l	2.5	0.70
Styrene	ND		ug/l	2.5	0.70
Dichlorodifluoromethane	ND		ug/l	5.0	1.0
Acetone	ND		ug/l	5.0	1.5
Carbon disulfide	ND		ug/l	5.0	1.0
2-Butanone	ND		ug/l	5.0	1.9
4-Methyl-2-pentanone	ND		ug/l	5.0	1.0
2-Hexanone	ND		ug/l	5.0	1.0
Bromochloromethane	ND		ug/l	2.5	0.70
1,2-Dibromoethane	ND		ug/l	2.0	0.65
n-Butylbenzene	ND		ug/l	2.5	0.70
sec-Butylbenzene	ND		ug/l	2.5	0.70
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	0.70
Isopropylbenzene	ND		ug/l	2.5	0.70
p-Isopropyltoluene	ND		ug/l	2.5	0.70
n-Propylbenzene	ND		ug/l	2.5	0.70
1,2,3-Trichlorobenzene	ND		ug/l	2.5	0.70
1,2,4-Trichlorobenzene	ND		ug/l	2.5	0.70
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.70
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.70
Methyl Acetate	ND		ug/l	2.0	0.23
Cyclohexane	ND		ug/l	10	0.27
1,4-Dioxane	ND		ug/l	250	61.
Freon-113	ND		ug/l	2.5	0.70
Methyl cyclohexane	ND		ug/l	10	0.40

Project Name: 145 BUFFALO RIVER SITE
Project Number: T0474-019-001
Lab Number: L1941760
Report Date: 09/19/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 09/18/19 08:30
Analyst: PD

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01-04 Batch: WG1285576-5					

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	104		70-130
Toluene-d8	95		70-130
4-Bromofluorobenzene	88		70-130
Dibromofluoromethane	101		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: 145 BUFFALO RIVER SITE

Project Number: T0474-019-001

Lab Number: L1941760

Report Date: 09/19/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-04 Batch: WG1285576-3 WG1285576-4								
Methylene chloride	97		96		70-130	1		20
1,1-Dichloroethane	110		100		70-130	10		20
Chloroform	100		94		70-130	6		20
Carbon tetrachloride	95		92		63-132	3		20
1,2-Dichloropropane	100		100		70-130	0		20
Dibromochloromethane	95		94		63-130	1		20
1,1,2-Trichloroethane	99		100		70-130	1		20
Tetrachloroethene	96		94		70-130	2		20
Chlorobenzene	93		92		75-130	1		20
Trichlorofluoromethane	96		92		62-150	4		20
1,2-Dichloroethane	94		96		70-130	2		20
1,1,1-Trichloroethane	92		90		67-130	2		20
Bromodichloromethane	96		94		67-130	2		20
trans-1,3-Dichloropropene	94		93		70-130	1		20
cis-1,3-Dichloropropene	92		92		70-130	0		20
Bromoform	94		99		54-136	5		20
1,1,2,2-Tetrachloroethane	96		99		67-130	3		20
Benzene	100		100		70-130	0		20
Toluene	96		94		70-130	2		20
Ethylbenzene	96		94		70-130	2		20
Chloromethane	130		120		64-130	8		20
Bromomethane	40		**37**	Q	39-139	8		20
Vinyl chloride	88		84		55-140	5		20

Lab Control Sample Analysis
Batch Quality Control

Project Name: 145 BUFFALO RIVER SITE
Project Number: T0474-019-001

Lab Number: L1941760
Report Date: 09/19/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-04 Batch: WG1285576-3 WG1285576-4								
Chloroethane	77		73		55-138	5		20
1,1-Dichloroethene	99		99		61-145	0		20
trans-1,2-Dichloroethene	97		96		70-130	1		20
Trichloroethene	97		96		70-130	1		20
1,2-Dichlorobenzene	95		96		70-130	1		20
1,3-Dichlorobenzene	98		99		70-130	1		20
1,4-Dichlorobenzene	97		95		70-130	2		20
Methyl tert butyl ether	81		81		63-130	0		20
p/m-Xylene	90		90		70-130	0		20
o-Xylene	90		90		70-130	0		20
cis-1,2-Dichloroethene	95		95		70-130	0		20
Styrene	95		95		70-130	0		20
Dichlorodifluoromethane	140		130		36-147	7		20
Acetone	130		140		58-148	7		20
Carbon disulfide	120		110		51-130	9		20
2-Butanone	120		120		63-138	0		20
4-Methyl-2-pentanone	86		92		59-130	7		20
2-Hexanone	87		89		57-130	2		20
Bromochloromethane	96		95		70-130	1		20
1,2-Dibromoethane	91		90		70-130	1		20
n-Butylbenzene	100		100		53-136	0		20
sec-Butylbenzene	100		110		70-130	10		20
1,2-Dibromo-3-chloropropane	84		91		41-144	8		20

Lab Control Sample Analysis

Batch Quality Control

Project Name: 145 BUFFALO RIVER SITE

Project Number: T0474-019-001

Lab Number: L1941760

Report Date: 09/19/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-04 Batch: WG1285576-3 WG1285576-4								
Isopropylbenzene	87		87		70-130	0		20
p-Isopropyltoluene	89		87		70-130	2		20
n-Propylbenzene	93		94		69-130	1		20
1,2,3-Trichlorobenzene	89		92		70-130	3		20
1,2,4-Trichlorobenzene	91		90		70-130	1		20
1,3,5-Trimethylbenzene	89		88		64-130	1		20
1,2,4-Trimethylbenzene	88		88		70-130	0		20
Methyl Acetate	130		130		70-130	0		20
Cyclohexane	100		100		70-130	0		20
1,4-Dioxane	82		78		56-162	5		20
Freon-113	100		100		70-130	0		20
Methyl cyclohexane	90		88		70-130	2		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	103		102		70-130
Toluene-d8	97		96		70-130
4-Bromofluorobenzene	81		82		70-130
Dibromofluoromethane	95		95		70-130

Project Name: 145 BUFFALO RIVER SITE
Project Number: T0474-019-001

Lab Number: L1941760
Report Date: 09/19/19

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(*)
L1941760-01A	Vial HCl preserved	A	NA		3.1	Y	Absent		NYTCL-8260-R2(14)
L1941760-01B	Vial HCl preserved	A	NA		3.1	Y	Absent		NYTCL-8260-R2(14)
L1941760-01C	Vial HCl preserved	A	NA		3.1	Y	Absent		NYTCL-8260-R2(14)
L1941760-02A	Vial HCl preserved	A	NA		3.1	Y	Absent		NYTCL-8260-R2(14)
L1941760-02B	Vial HCl preserved	A	NA		3.1	Y	Absent		NYTCL-8260-R2(14)
L1941760-02C	Vial HCl preserved	A	NA		3.1	Y	Absent		NYTCL-8260-R2(14)
L1941760-03A	Vial HCl preserved	A	NA		3.1	Y	Absent		NYTCL-8260-R2(14)
L1941760-03B	Vial HCl preserved	A	NA		3.1	Y	Absent		NYTCL-8260-R2(14)
L1941760-03C	Vial HCl preserved	A	NA		3.1	Y	Absent		NYTCL-8260-R2(14)
L1941760-04A	Vial HCl preserved	A	NA		3.1	Y	Absent		NYTCL-8260-R2(14)
L1941760-04B	Vial HCl preserved	A	NA		3.1	Y	Absent		NYTCL-8260-R2(14)
L1941760-04C	Vial HCl preserved	A	NA		3.1	Y	Absent		NYTCL-8260-R2(14)
L1941760-05A	Vial HCl preserved	A	NA		3.1	Y	Absent		HOLD-8260(14)
L1941760-05B	Vial HCl preserved	A	NA		3.1	Y	Absent		HOLD-8260(14)

*Values in parentheses indicate holding time in days

Project Name:	145 BUFFALO RIVER SITE	**Lab Number:**	L1941760
Project Number:	T0474-019-001	**Report Date:**	09/19/19

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.

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.

Footnotes

Report Format: DU Report with 'J' Qualifiers

Project Name:	145 BUFFALO RIVER SITE	**Lab Number:**	L1941760
Project Number:	T0474-019-001	**Report Date:**	09/19/19

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

Terms

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

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

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

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

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

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. 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.

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 Identified Compounds (TICs).

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.

Report Format: DU Report with 'J' Qualifiers

REFERENCES

1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - IV, 2007.

LIMITATION OF LIABILITIES

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

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

Certification Information

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

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

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

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

Westborough Facility:

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

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

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.

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.

NEW YORK CHAIN OF CUSTODY

ALPHA ANALYTICAL

Westborough, MA 01581 — 8 Walkup Dr. — TEL: 508-898-9220 — FAX: 508-898-9193

Mansfield, MA 02048 — 320 Forbes Blvd — TEL: 508-822-9300 — FAX: 508-822-3288

Service Centers
Mahwah, NJ 07430: 35 Whitney Rd, Suite 5
Albany, NY 12205: 14 Walker Way
Tonawanda, NY 14150: 275 Cooper Ave, Suite 105

Page 1 of

Date Rec'd in Lab: 9/13/19

ALPHA Job #: L1941760

Client Information

Client: BENCHMARK ENV. SCI.
Address: 2558 HAMBURG TRPK
BUFFALO, NY 14218
Phone: 716-856-0599
Fax:
Email: bmayback@turnkeylloc.com

Project Information

Project Name: 145 BUFFALO RIVER SITE
Project Location: 145 BUFFALO RIVER
Project # T647-019-001
(Use Project name as Project #) ☐
Project Manager: BRYAN MAYBACK
ALPHAQuote #:

Turn-Around Time

Standard ☒ Due Date:
Rush (only if pre approved) ☐ # of Days:

Deliverables

☐ ASP-A ☐ ASP-B
☐ EQuIS (1 File) ☐ EQuIS (4 File)
☐ Other

Regulatory Requirement

☐ NY TOGS ☐ NY Part 375
☐ AWQ Standards ☐ NY CP-51
☐ NY Restricted Use ☐ Other
☐ NY Unrestricted Use
☐ NYC Sewer Discharge

Billing Information

☒ Same as Client Info
PO #

Disposal Site Information

Please identify below location of applicable disposal facilities.
Disposal Facility:
☐ NJ ☒ NY
☐ Other:

These samples have been previously analyzed by Alpha ☐

Other project specific requirements/comments:

Please specify Metals or TAL.

ANALYSIS

Sample Filtration
☐ Done
☐ Lab to do
Preservation
☐ Lab to do
(Please Specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	TCL+CP51 VOC	PAHs	RCRA Metals	Hg	TCL+CP51 SVOC	Total Bottle	Sample Specific Comments
41760 - 01	MP-1	9/11/19	1630	AQUA	CS	X					3	
02	SB-3W		1500		CS	X					3	
03	SB-6W		1530		CS	X					3	
04	SB-10W		1600		CS	X					3	
05	TRIP BLANK	9/11/19	1700	AQUA	CP						2	

Preservative Code:
A = None
B = HCl
C = HNO_3
D = H_2SO_4
E = NaOH
F = MeOH
G = $NaHSO_4$
H = $Na_2S_2O_3$
K/E = Zn Ac/NaOH
O = Other

Container Code
P = Plastic
A = Amber Glass
V = Vial
G = Glass
B = Bacteria Cup
C = Cube
O = Other
E = Encore
D = BOD Bottle

Westboro: Certification No: MA935
Mansfield: Certification No: MA015

Container Type	A	X	X	X	X				
Preservative	A	X	X	X	X				

Relinquished By:	Date/Time	Received By:	Date/Time
	9/12/19 1030		12Sep2019 1250
	12Sep2019 1250		9/13/19 01:30

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. BY EXECUTING THIS COC, THE CLIENT HAS READ AND AGREES TO BE BOUND BY ALPHA'S TERMS & CONDITIONS. (See reverse side.)

Form No: 01-25 HC (rev. 30-Sept-2013)