85 Devonshire Street, 3rd Floor, Boston, MA 02109
Tel: 617.412.4480

MEMORANDUM

TO:	Ed Olsen – Superintendent, Parks and Forestry Division, Carys Lustig – Director of Public Works, Stacey Mulroy – Director of Park and Recreation (Town of Needham)
FROM:	Lee Koska, PE, Prasanta Bhunia, LSP (Weston & Sampson)
DATE:	March 29, 2023
SUBJECT:	Claxton Field Environmental Sampling and Analysis

As requested by the Massachusetts Department of Environmental Protection (MassDEP), Weston & Sampson performed soil sampling and analysis at Claxton Field, located at 1421 Central Avenue (the Site). MassDEP required this sampling because its historical use as a burn dump and a recent resident complaint regarding excavation and stockpiling of topsoil over a portion of the Site for use as a contractor laydown area.

Previous Investigations – 2021 and 2022

As part of a geotechnical investigation to design potential new sports lighting foundations, eleven soil borings were advanced across the Site on December 7, 2021. Ash and various solid waste materials (glass, metal fragments, ceramic and wood) were observed intermixed with granular fill materials underneath topsoil up to 15.5 feet below grade surface (bgs). A significant increase in ash and solid waste materials was observed at four feet bgs and deeper, consistent with the known Site history as a municipal burn dump. During this investigation, samples were not collected for laboratory analysis, but based on field observations (i.e., ash and solid waste in deeper samples), Weston & Sampson recommended shallow test pits to address potential exposure to park users.

On March 15, 2022, Weston & Sampson excavated twenty-one test pits throughout the Site. In general, topsoil throughout the Site was at least 10 to 12 inches thick, transitioning to soil intermixed with solid waste material at greater depths, except for a play yard where 4 to 7 inches of topsoil were identified over a landscaping fabric. As solid waste components (primarily glass) were identified at shallow depths beneath the landscaping fabric, this area was closed as a conservative measure and the playground equipment removed. Samples of the materials were not collected for laboratory analysis at the time of test pit excavations.

Use of a Portion of the Site as Contractor Laydown Area

In the Summer of 2022, the contractor of the Central Avenue Water Main Improvement Project stripped the topsoil from the construction laydown area and stockpiled the material on Site. We understand a resident submitted a complaint to MassDEP, and MassDEP subsequently required soil sampling and analysis to address potential contamination at the Site. As required, a sampling plan was submitted to MassDEP for approval. A summary of the subsurface investigation methodology, findings and recommendations for additional response actions under the MCP are presented below.

Site Investigation – 2023

In March 2023, Weston & Sampson advanced six soil borings (identified as SB-201 through SB-206) using a Geoprobe drill rig. Boring locations are depicted on Figure 1 – Sampling Plan. Soil conditions were logged in the field by an environmental engineer and field screened using a Photoionization Detector (PID) for the presence of Total Organic Vapors (TOV). Three samples were collected from each boring for the following intervals: 0 to 1-foot bgs, 2 to 4 feet bgs and 4 to 6 feet bgs. Location SB-206 encountered refusal (bedrock)

at 5 feet bgs so the third interval sampled was 4 to 5 feet bgs. Samples collected were submitted for laboratory analysis of:

- Polycyclic Aromatic Hydrocarbons (PAHs) via EPA Method 8270;
- MCP 14 Metals via EPA Method 6010 / 7417;
- Asbestos via Polarized Light Microscopy (PLM); and
- Dioxins via EPA Method 8290 (nine samples total).

In addition, one duplicate sample was collected from B-203 from 4 to 6 feet bgs for PAHs, MCP 14 Metals, and Asbestos for quality assurance / quality control (QA/QC) purposes.

One 10-point composite sample was also collected from the stockpile located within the contractor laydown area for laboratory analysis of the same constituents of concern (COCs) identified above. Each grab was collected with hand tools from excavations 1 to 2 feet into the stockpile surface and field screened with a PID. Note that location B-202 was also located within the construction laydown area close to the existing stockpile.

At the request of MassDEP, Weston & Sampson also advanced a series of perimeter borings (PER-1 through PER-8) to visually assess the potential presence of solid waste materials at the park boundaries. These locations were advanced approximately five feet from the existing tree line. Analytical samples were not collected from the PER- boring series. Limited quantities of solid waste components were encountered in all locations with the exception of PER-7, which encountered shallow refusal on bedrock. Boring logs from all locations assessed during this investigation round are presented as Attachment A.

Soil Sampling Results

Topsoil: Twelve inches of topsoil was consistently observed with the exception of location B-206, where ash and solid waste materials were observed at approximately eleven inches bgs. Asbestos containing materials were not detected in topsoil. Laboratory analytical results of topsoil (0 – 1' interval) were below RCS-1 standards with the exception of lead at B-206 (330 mg/kg) and Dioxins at B-203 (30 ng/kg) which slightly exceeded their respective RCS-1 standards of 200 mg/kg and 20 ng/kg, respectively. Based on our visual observations, this exceedance appears to be associated with the presence of solid waste materials and ash at approximately eleven inches bgs. PAHs and Dioxins were below RCS-1 standards in topsoil. PID headspace readings were non-detect in the topsoil material.

Deeper Soil: Deeper soil from 1' to 6' bgs contained solid waste materials (brick, glass, wood, metal, porcelain) and ash intermixed with soil. Elevated concentrations of lead (up to 4,650 mg/kg), zinc (up to 1,630 mg/kg) and various PAHs were detected above RCS-1s. These elevated concentrations were generally detected at depths where ash and solid waste were observed. Similar to topsoil, asbestos was not detected in the submitted samples. PID headspace readings were non-detect in the deeper soil material.

Dioxin 2,3,7,8-TCDD exceeded RCS-1 in 5 of the 6 deeper samples. Note that only 2,3,7,8-TCDD has a published RCS-1 standard under the MCP. The maximum concentration detected was 74 nanograms/kilogram (ng/kg), which is below the Upper Concentration Limit (UCL) of 500 ng/kg and may require removal under the MCP. Full analytical results for all dioxins analyzed are presented in Table 2 – Soil Analytical Results: Dioxins for reference.

Stockpile: Results from the topsoil stockpile sample (CF-Stockpile) included detections of various metals and PAHs, slightly above RCS-1 standards for acenaphthylene, benzo(a)pyrene and lead. Soil results however were generally lower than the concentrations in deeper soil. PID headspace readings were non-detect in the stockpile material.

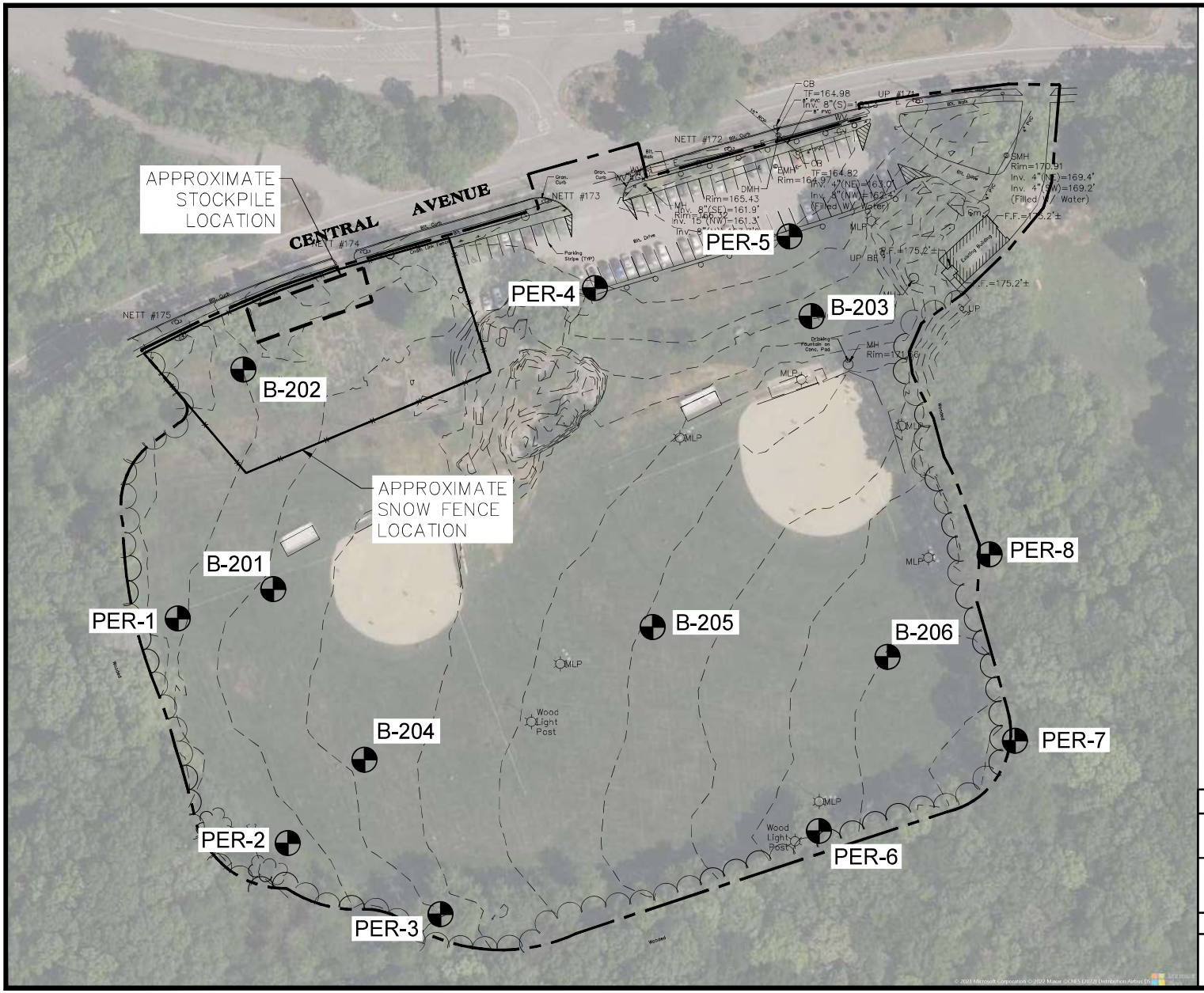
Based on the data, Weston & Sampson performed a preliminary risk assessment and indicated soil from 0 – 1' bgs does not pose a significant risk for a park user or a resident. However, deeper soil (greater than 1' bgs) does pose a condition of significant risk, mainly due to the presence of lead and to a lesser extent of Dioxin (2,3,7,8-TCDD).

Summary and Recommendations

Concentrations of metals (lead and zinc), PAHs, and Dioxins exceeded RCS-1 standards, which requires a 120-day notification to MassDEP under the MCP. Therefore, the Town should notify MassDEP within this timeframe of their knowledge of the data. Following notification, MassDEP will assign a Release Tracking Number (RTN) and the Site will be regulated going forward under the MCP. Please note that the MCP will require additional response actions, including further assessment, detailed risk characterization and reports for park construction and Site closure.

Attachments:
Figures
Tables
Boring Logs
Laboratory Analytical Reports

Figures



N

LEGEND:

APPROXIMATE BORING LOCATION

NOTES:

1. STOCKPILE, SNOW FENCE, AND BORING LOCATIONS ARE APPROXIMATE AND FOR DEPICTION PURPOSES ONLY.

75 37.5 0 75 150

SCALE: 1"=50'

FIGURE 1

NEEDHAM, MA
CLAXTON FIELD

SITE PLAN

DESIGNED BY:	MDM	CHECKED BY:	LK	DATE:	MARCH 2023

Weston & Sampson

P:\MA\Needham MA\Claxton Field\CAD\C_Current\Sampling Figure\Environmental Sampling Figure_recover.dwg

Tables

Soil Analytical Results
Claxton Field
Needham, MA

Parameter	RCS-1 Concentration	Units	Location, Sample Date, Lab Sample ID, Sample Depth (feet)								
			B-201			B-202		B-203			DUPLICATE
			23B0634-01	23B0634-02	23B0634-03	23B0634-04	23B0634-05	23B0634-06	23B0634-07	23B0634-08	23B0634-18
			02/16/2023	02/16/2023	02/16/2023	02/16/2023	02/16/2023	02/16/2023	02/16/2023	02/16/2023	02/16/2023
			0-1	2-4	4-6	0-1	2-4	0-1	2-4	4-6	4-6
Polycyclic Aromatic Hydrocarbons (PAHs)											
2-Methylnaphthalene	0.7	mg/kg	<0.287	<0.302	<0.645	<0.498	<0.307	<0.378	<0.332	<0.330	<0.278
Acenaphthene	4	mg/kg	<0.287	<0.302	<0.645	<0.498	<0.307	<0.378	<0.332	<0.330	<0.278
Acenaphthylene	1	mg/kg	<0.287	<0.302	<0.645	<0.498	<0.307	<0.378	<0.332	<0.330	<0.278
Anthracene	1000	mg/kg	<0.287	<0.302	<0.645	<0.498	<0.307	<0.378	<0.332	<0.330	<0.278
Benzo(a)anthracene	7	mg/kg	<0.287	**0.523**	**0.827**	**0.871**	<0.307	<0.378	**0.457**	**0.856**	**0.911**
Benzo(a)pyrene	2	mg/kg	<0.287	**0.517**	**0.79**	**0.85**	<0.307	<0.378	**0.472**	**0.911**	**0.83**
Benzo(b)fluoranthene	7	mg/kg	<0.287	**0.338**	<0.645	**0.667**	<0.307	<0.378	**0.417**	**0.788**	**0.802**
Benzo(g,h,i)perylene	1000	mg/kg	<0.287	**0.402**	<0.645	<0.498	<0.307	<0.378	<0.332	**0.514**	**0.428**
Benzo(k)fluoranthene	70	mg/kg	<0.287	**0.321**	<0.645	**0.623**	<0.307	<0.378	**0.378**	**0.729**	**0.486**
Chrysene	70	mg/kg	<0.287	**0.763**	**1.16**	**0.975**	<0.307	<0.378	**0.539**	**0.961**	**0.922**
Dibenzo(a,h)Anthracene	0.7	mg/kg	<0.287	<0.302	<0.645	<0.498	<0.307	<0.378	<0.332	<0.330	<0.278
Fluoranthene	1000	mg/kg	<0.287	**0.729**	**0.927**	**1.82**	<0.307	<0.378	**0.9**	**1.59**	**1.56**
Fluorene	1000	mg/kg	<0.287	<0.302	<0.645	<0.498	<0.307	<0.378	<0.332	<0.330	<0.278
Indeno(1,2,3-cd)Pyrene	7	mg/kg	<0.287	**0.319**	<0.645	<0.498	<0.307	<0.378	<0.332	**0.58**	**0.492**
Naphthalene	4	mg/kg	<0.287	<0.302	<0.645	<0.498	<0.307	<0.378	<0.332	<0.330	<0.278
Phenanthrene	10	mg/kg	<0.287	**0.791**	**0.663**	**1.17**	<0.307	<0.378	**0.546**	0.645	**0.956**
Pyrene	1000	mg/kg	<0.287	**1.1**	**1.49**	**1.6**	<0.307	<0.378	**0.752**	**1.3**	**1.59**
Total Metals											
Antimony	20	mg/kg	<5.03	<5.24	<5.74	<5.10	<5.94	<1.36	<6.18	**11.9**	<5.62
Arsenic	20	mg/kg	**4.84**	**8.29**	**5.45**	**3.13**	**40.6**	**8.88**	**7.17**	**10.9**	**8.13**
Barium	1000	mg/kg	**44.7**	**409**	**78**	**46.3**	**304**	**72.5**	**167**	**155**	**287**
Beryllium	90	mg/kg	**0.29**	<0.12	<0.13	**0.34**	**0.27**	**0.65**	**0.33**	**0.63**	**0.33**
Cadmium	70	mg/kg	<0.50	**8.91**	**0.63**	<0.51	**3.11**	<0.68	**1.27**	<0.63	**1.85**
Chromium	100	mg/kg	**12.7**	**104**	**19.5**	**11.7**	**35.5**	**27.1**	**22.2**	**8.12**	**20.2**
Lead	200	mg/kg	**112**	**399**	**302**	**129**	**1030**	**50.2**	**319**	**147**	**455**
Mercury	20	mg/kg	**0.042**	**0.271**	**0.107**	**0.085**	**0.647**	**0.114**	**0.193**	**0.37**	**0.406**
Nickel	600	mg/kg	**9.46**	**107**	**27.8**	**8.2**	**32.8**	**16.5**	**13.2**	**18.2**	**23.6**
Selenium	400	mg/kg	<5.03	<1.05	<1.15	<5.10	<1.19	<6.82	<6.18	<6.31	<5.62
Silver	100	mg/kg	<0.5	**2.62**	<2.87	<0.51	**2.97**	<0.68	<0.62	<0.63	<0.56
Thallium	8	mg/kg	<5.03	<5.24	<5.74	<5.10	<5.94	<0.68	<6.18	<6.31	<5.62
Vanadium	400	mg/kg	**20.8**	**39.8**	**13.9**	**15.4**	**25.1**	**34.7**	**21.9**	**24.7**	**18.9**
Zinc	1000	mg/kg	**63**	**1630**	**356**	**76.8**	**639**	**75.1**	**443**	**613**	**926**
Dioxins											
2,3,7,8-TCDD TEQ	20	ng/kg	NT	NT	NT	NT	NT	**30**	**74**	**16**	NT
Asbestos											
Total Asbestos	~	%	ND	ND	ND	ND	ND	ND	ND	ND	ND

QC by:

NOTES:
~ = No standard available.

<VALUE = value not detected above laboratory reporting limit

VALUE = value detected above laboratory reporting limit

VALUE = value detected above RCS-1 Criteria

ABBREVIATIONS:
mg/Kg = Milligram per kilogram
ng/kg = Nanograms per kilogram
RCS-1 = Reportable Concentration in Soil, Category S-1 (2014)
TCDD = tetrachlorodibenzo-p-dioxin
ND = Non-detect
NT = Not tested

Soil Analytical Results
Claxton Field
Needham, MA

Parameter	RCS-1 Concentration	Units	Location, Sample Date, Lab Sample ID, Sample Depth (feet)									
			B-204			B-205			B-206			CF-STOCKPILE
			23B0634-09	23B0634-10	23B0634-11	23B0634-12	23B0634-13	23B0634-14	23B0634-15	23B0634-16	23B0634-17	23B0634-19
			02/16/2023	02/16/2023	02/16/2023	02/16/2023	02/16/2023	02/16/2023	02/16/2023	02/16/2023	02/16/2023	02/16/2023
			0-1	2-4	4-6	0-1	2-4	4-6	0-1	2-4	4-5	N/A
Polycyclic Aromatic Hydrocarbons (PAHs)												
2-Methylnaphthalene	0.7	mg/kg	<0.295	<0.255	<0.319	<0.295	<0.281	<0.346	<0.315	<0.284	<0.263	<0.338
Acenaphthene	4	mg/kg	<0.295	<0.255	<0.319	<0.295	<0.281	<0.346	<0.315	<0.284	<0.263	<0.338
Acenaphthylene	1	mg/kg	<0.295	**1.56**	<0.319	<0.295	<0.281	<0.346	<0.315	<0.284	<0.263	**1.46**
Anthracene	1000	mg/kg	<0.295	**0.601**	<0.319	<0.295	<0.281	<0.346	<0.315	<0.284	<0.263	**0.891**
Benzo(a)anthracene	7	mg/kg	<0.295	**2.29**	<0.319	<0.295	<0.281	<0.346	<0.315	<0.284	<0.263	**2.36**
Benzo(a)pyrene	2	mg/kg	<0.295	**2.99**	<0.319	<0.295	<0.281	<0.346	<0.315	<0.284	<0.263	**2.19**
Benzo(b)fluoranthene	7	mg/kg	<0.295	**1.96**	<0.319	<0.295	<0.281	<0.346	<0.315	<0.284	<0.263	**1.85**
Benzo(g,h,i)perylene	1000	mg/kg	<0.295	**1.77**	<0.319	<0.295	<0.281	<0.346	<0.315	<0.284	<0.263	**1.32**
Benzo(k)fluoranthene	70	mg/kg	<0.295	**1.99**	<0.319	<0.295	<0.281	<0.346	<0.315	<0.284	<0.263	**1.4**
Chrysene	70	mg/kg	<0.295	**3.55**	<0.319	<0.295	**0.318**	<0.346	<0.315	<0.284	<0.263	**2.69**
Dibenzo(a,h)Anthracene	0.7	mg/kg	<0.295	**0.447**	<0.319	<0.295	<0.281	<0.346	<0.315	<0.284	<0.263	**<0.338**
Fluoranthene	1000	mg/kg	<0.295	**2.89**	<0.319	<0.295	<0.281	<0.346	<0.315	<0.284	<0.263	**3.92**
Fluorene	1000	mg/kg	<0.295	<0.255	<0.319	<0.295	<0.281	<0.346	<0.315	<0.284	<0.263	**0.487**
Indeno(1,2,3-cd)Pyrene	7	mg/kg	<0.295	**1.7**	<0.319	<0.295	<0.281	<0.346	<0.315	<0.284	<0.263	**1.42**
Naphthalene	4	mg/kg	<0.295	<0.255	<0.319	<0.295	<0.281	<0.346	<0.315	<0.284	<0.263	<0.338
Phenanthrene	10	mg/kg	<0.295	**1.77**	<0.319	<0.295	<0.281	<0.346	<0.315	<0.284	<0.263	**4.14**
Pyrene	1000	mg/kg	<0.295	**5.05**	<0.319	<0.295	**0.36**	<0.346	<0.315	<0.284	<0.263	**4.57**
Total Metals												
Antimony	20	mg/kg	<5.79	<4.89	**14.7**	<5.61	<5.45	<5.85	<5.86	**6.85**	<4.98	<6.4
Arsenic	20	mg/kg	<2.89	<2.45	**8.31**	<2.81	**3.15**	**10.6**	**5.03**	**13.9**	<2.49	**4.97**
Barium	1000	mg/kg	**31.8**	**23.7**	**336**	**23.7**	**47.9**	**155**	**104**	**85.9**	**57.2**	**88.7**
Beryllium	90	mg/kg	**0.32**	**0.18**	<0.14	**0.25**	**0.25**	**0.67**	**0.39**	0.33	**0.34**	**0.26**
Cadmium	70	mg/kg	<0.58	<0.49	**3.05**	<0.56	<0.55	<0.58	<0.59	<0.53	<0.5	**0.7**
Chromium	100	mg/kg	**14.1**	**14**	**88.3**	**14.5**	**14.9**	**10.4**	**17.4**	**16**	**12**	**14**
Lead	200	mg/kg	**14.6**	**19.1**	**4650**	**22.1**	**50.6**	**1650**	**330**	**319**	<9.97	**206**
Mercury	20	mg/kg	**0.061**	**0.091**	**0.145**	**0.065**	**0.409**	**0.654**	**0.088**	**0.223**	**0.034**	**0.433**
Nickel	600	mg/kg	**9.64**	**7.33**	**68.7**	**8.15**	**12**	**16.8**	**16.4**	**37.4**	**8.75**	**9.97**
Selenium	400	mg/kg	<5.79	<4.89	<1.15	<5.61	<5.45	<5.83	<5.86	<1.06	<4.98	<6.4
Silver	100	mg/kg	<0.58	<0.49	<5.76	<0.56	<0.55	<0.58	<0.59	<1.06	<0.5	<0.64
Thallium	8	mg/kg	<5.79	<4.89	<5.76	<5.61	<5.45	<5.83	<5.86	<5.3	<4.98	<6.4
Vanadium	400	mg/kg	**25.3**	**17.4**	**23.8**	**18.7**	**35.1**	**38.2**	**24.3**	**21.5**	**21.7**	**17.2**
Zinc	1000	mg/kg	**32.7**	**35.5**	**1120**	**29.2**	**69**	**329**	**199**	**341**	**24.9**	**199**
Dioxins												
2,3,7,8-TCDD TEQ	20	ng/kg	**5.2**	**62**	**27**	3.4	**54**	**27**	NT	NT	NT	NT
Asbestos												
Total Asbestos	~	%	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

QC by:

NOTES:
~ = No standard available.

<VALUE = value not detected above laboratory reporting lim

VALUE = value detected above laboratory reporting limit

VALUE = value detected above RCS-1 Criteria

ABBREVIATIONS:
mg/Kg = Milligram per kilogram
ng/kg = Nanograms per kilogram
RCS-1 = Reportable Concentration in Soil, Category S-1 (2014)
TCDD = tetrachlorodibenzo-p-dioxin
ND = Non-detect
NT = Not tested

Table 2
Soil Analytical Results: Dioxins
Claxton Field
Needham, MA

Parameter	MCP Method 1 Standards		Units	Sample ID, Sample Date, Sample Depth (feet)								
				B-203			B-204			B-205		
	S-1/GW-2	S-1/GW-3		2/16/2023 0-1	2/16/2023 2-4	2/16/2023 4-6	2/16/2023 0-1	2/16/2023 2-4	2/16/2023 4-6	2/16/2023 0-1	2/16/2023 2-4	2/16/2023 4-6
Dioxins												
2,3,7,8-TCDF	~	~	ng/Kg	**0.99**	**1.9**	**3.7**	**0.49**	**2.8**	**6.3**	< 0.29	**34**	**8.5**
Total TCDF	~	~	ng/Kg	**12**	**33**	**48**	**7.0**	**140**	**170**	**2.8**	**560**	**300**
2,3,7,8-TCDD	~	~	ng/Kg	**0.54**	**0.46**	**0.39**	**0.21**	**0.28**	**0.51**	< 0.069	**3.3**	**0.69**
Total TCDD	~	~	ng/Kg	**5.8**	**13**	**14**	**1.7**	**30**	**21**	<0.069	**120**	**26**
1,2,3,7,8-PeCDF	~	~	ng/Kg	**1.3**	**1.6**	**2.1**	**0.57**	**47**	**5.1**	< 0.23	**9.6**	**4.7**
2,3,4,7,8-PeCDF	~	~	ng/Kg	**2.1**	**2.7**	**3.2**	**1.1**	**14**	**9.9**	**0.35**	**22**	**11**
Total PeCDF	~	~	ng/Kg	**28**	**29**	**37**	**18**	**140**	**110**	**7.3**	**230**	**130**
1,2,3,7,8-PeCDD	~	~	ng/Kg	**4.8**	**2.0**	**0.89**	**0.39**	**1.5**	**1.3**	**0.19**	**3.1**	**1.4**
Total PeCDD	~	~	ng/Kg	**16**	**16**	**14**	**3.0**	**35**	**21**	**1.0**	**51**	**19**
1,2,3,4,7,8-HxCDF	~	~	ng/Kg	**3.8**	**2.2**	**3.2**	**0.81**	**9.3**	**8.0**	**0.53**	**6.2**	**5.8**
1,2,3,6,7,8-HxCDF	~	~	ng/Kg	**4.1**	**1.2**	**2.7**	**0.67**	**9.1**	**6.4**	**0.37**	**5.6**	**5.4**
2,3,4,6,7,8-HxCDF	~	~	ng/Kg	**2.2**	**2.4**	**3.1**	**1.2**	**12**	**7.9**	**0.49**	**8.7**	**7.0**
1,2,3,7,8,9-HxCDF	~	~	ng/Kg	**0.77**	**0.92**	**0.92**	**0.51**	**2.6**	**2.5**	**0.29**	**1.5**	**1.0**
Total HxCDF	~	~	ng/Kg	**54**	**53**	**36**	**16**	**120**	**81**	**7.4**	**110**	**74**
1,2,3,4,7,8-HxCDD	~	~	ng/Kg	**5.5**	**2.6**	**1.3**	**0.50**	**1.9**	**1.2**	**0.39**	**1.4**	**1.3**
1,2,3,6,7,8-HxCDD	~	~	ng/Kg	**9.3**	**17**	**2.6**	**1.1**	**3.4**	**2.6**	**0.66**	**3.3**	**0.80**
1,2,3,7,8,9-HxCDD	~	~	ng/Kg	**9**	**8.2**	**1.9**	**0.80**	**2.1**	**1.9**	**0.52**	**2.6**	**0.53**
Total HxCDD	~	~	ng/Kg	**74**	**120**	**27**	**9.3**	**56**	**28**	**6.7**	**42**	**11**
1,2,3,4,6,7,8-HpCDF	~	~	ng/Kg	**25**	**39**	**22**	**6.7**	**120**	**26**	**3.4**	**46**	**33**
1,2,3,4,7,8,9-HpCDF	~	~	ng/Kg	**1.6**	**2.8**	**1.2**	**0.48**	**1.7**	**2.8**	< 0.11	**1.4**	**0.63**
Total HpCDF	~	~	ng/Kg	**60**	**180**	**40**	**12**	**130**	**42**	**6.8**	**57**	**37**
1,2,3,4,6,7,8-HpCDD	~	~	ng/Kg	**120**	**500**	**41**	**12**	**22**	**33**	**16**	**19**	**3.3**
Total HpCDD	~	~	ng/Kg	**310**	**940**	**82**	**24**	**56**	**59**	**32**	**39**	**7.5**
OCDF	~	~	ng/Kg	**45**	**83**	**18**	**6.6**	**25**	**14**	**5.0**	**24**	**4.0**
OCDD	~	~	ng/Kg	**1600**	**3700**	**270**	**95**	**160**	**160**	**140**	**80**	**10**
TCDD TEQ	20	20	ng/Kg	**30**	**74**	**16**	**5.2**	**62**	**27**	**3.4**	**54**	**27**

NOTES:

~ = No standard available.

<VALUE = value not detected above laboratory reporting limit

VALUE = value detected above laboratory reporting limit

VALUE = value detected above RCS-1 Criteria

ABBREVIATIONS:

ng/kg = Nanograms per kilogram

RCS-1 = Reportable Concentration in Soil, Category S-1 (2014)

TCDD TEQ = Total 2,3,7,8-TCDD Toxic Equivalent Using MADEP Factors

Boring Logs

Weston & Sampson

PROJECT

Claxton Field
Needham, MA

BORING No B-201-1

SHEET 1 OF 1

Project No. ENG23-0164

CHKD BY ACE

BORING Co.	Bronson Drilling	BORING LOCATION	See attached plan		
FOREMAN	Dan Bronson	GROUND SURFACE ELEV.	NR	DATUM	NR
WSE REP.	Matthew McGuire, Laura McGovern	DATE START	2/16/23	DATE END	2/16/23

SAMPLER: Geoprobe

CASING: 2" inside diameter with 5' sleeve

CASING SIZE: 2" OTHER:

GROUNDWATER OBSERVATIONS

DATE	TIME	WATER AT	CASING AT	STABILIZATION TIME
2/16/23	NR	NR	NA	NA

DEPTH (feet)	CASING (blows/ft)	SAMPLE No.	SAMPLE REC/PEN (in)	SAMPLE DEPTH (ft.)	SAMPLE BLOWS/6"	PID (ppm)	SAMPLE DESCRIPTION	NOTES	STRATUM DESCRIPTION
0	NA	S-1	40/72	0-6	NA	0.0	0"-12" Dark brown F SAND with some silt, trace organics; moist	(1)	**TOPSOIL**
2							12"-29" Light brown F-C SAND with some gravel, some ash, trace debris (glass, porcelain); moist		**FILL**
4							29"-47" Gray C SAND with silt, some debris (gray ash, burnt wood, glass); moist		
						0.0	47"-60" F-C SAND; dry; no odor		
6							60"-72" Black to brown ASH, some glass; dry		
8							**End of Boring at 6'**		
10									
12									
14									
16									

GRANULAR SOILS		COHESIVE SOILS	
BLOWS/FT	DENSITY	BLOWS/FT	DENSITY
0-4	V. LOOSE	0-2	V. SOFT
4-10	LOOSE	2-4	SOFT
10-30	M. DENSE	4-8	M. STIFF
30-50	DENSE	8-15	STIFF
> 50	V. DENSE	15-30	V. STIFF
		> 30	HARD

NOTES:

1. Samples B-201 (0-1), B-201 (2-4), and B-201 (4-6) collected across B-201-1 and B-201-2 for PAHs, MCP 14 metals, and asbestos.

GENERAL NOTES: i) THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES. TRANSITIONS MAY BE GRADUAL.

ii) WATER LEVEL READINGS HAVE BEEN MADE IN THE DRILL HOLES AT TIMES AND UNDER CONDITIONS STATED ON THIS BORING LOG. FLUCTUATIONS IN THE LEVEL OF GROUNDWATER MAY OCCUR DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS ARE MADE.

Weston & Sampson	PROJECT Claxton Field Needham, MA	BORING No B-201-2 SHEET 1 OF 1 Project No. ENG23-0164 CHKD BY ACE

BORING Co.	Bronson Drilling	BORING LOCATION	See attached plan		
FOREMAN	Dan Bronson	GROUND SURFACE ELEV.	NR	DATUM	NR
WSE REP.	Matthew McGuire, Laura McGovern	DATE START	2/16/23	DATE END	2/16/23

SAMPLER: Geoprobe

CASING: 2" inside diameter with 5' sleeve

CASING SIZE: 2" OTHER:

GROUNDWATER OBSERVATIONS

DATE	TIME	WATER AT	CASING AT	STABILIZATION TIME
2/16/23	NR	NR	NA	NA

DEPTH (feet)	CASING (blows/ft)	SAMPLE No.	REC/PEN (in)	DEPTH (ft.)	BLOWS/6"	PID (ppm)	SAMPLE DESCRIPTION	NOTES	STRATUM DESCRIPTION
0	NA						0"-12" Dark brown F SAND with some silt, trace organics; moist		**TOPSOIL**
2		S-1	20/72	0-6	NA	0.0	12'-72" Light brown F-C SAND with some gravel, some ash, trace debris (glass, porcelain); moist	(1)	**FILL**
4									
6							**End of Boring at 6'**		
8									
10									
12									
14									
16									

GRANULAR SOILS		COHESIVE SOILS	
BLOWS/FT	DENSITY	BLOWS/FT	DENSITY
0-4	V. LOOSE	0-2	V. SOFT
4-10	LOOSE	2-4	SOFT
10-30	M. DENSE	4-8	M. STIFF
30-50	DENSE	8-15	STIFF
> 50	V. DENSE	15-30	V. STIFF
		> 30	HARD

NOTES:

1. Samples B-206 (0-1), B-206 (2-4), and B-206 (4-6) collected across B-206-1 and B-206-2 for PAHs, MCP 14 metals, and asbestos.

GENERAL NOTES: i) THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES. TRANSITIONS MAY BE GRADUAL.

ii) WATER LEVEL READINGS HAVE BEEN MADE IN THE DRILL HOLES AT TIMES AND UNDER CONDITIONS STATED ON THIS BORING LOG. FLUCTUATIONS IN THE LEVEL OF GROUNDWATER MAY OCCUR DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS ARE MADE.

Weston & Sampson	PROJECT Claxton Field Needham, MA	BORING No B-202-1 SHEET 1 OF 1 Project No. ENG23-0164 CHKD BY ACE

BORING Co.	Bronson Drilling	BORING LOCATION	See attached plan		
FOREMAN	Dan Bronson	GROUND SURFACE ELEV.	NR	DATUM	NR
WSE REP.	Matthew McGuire, Laura McGovern	DATE START	2/16/23	DATE END	2/16/23

SAMPLER: Geoprobe

CASING: 2" inside diameter with 5' sleeve

CASING SIZE: 2" OTHER:

GROUNDWATER OBSERVATIONS

DATE	TIME	WATER AT	CASING AT	STABILIZATION TIME
2/16/23	NR	NR	NA	NA

DEPTH (feet)	CASING (blows/ft)	SAMPLE No.	SAMPLE REC/PEN (in)	SAMPLE DEPTH (ft.)	SAMPLE BLOWS/6"	PID (ppm)	SAMPLE DESCRIPTION	NOTES	STRATUM DESCRIPTION
0	NA						0"-10.5" Dark brown F-M SAND with little gravel, little rock; moist		**TOPSOIL**
2		S-1	32/48	0-4	NA	NR	10.5"-27" Light gray sandy GRAVEL with ash; moist	(2)	**FILL**
4						0.1	27"-48" Brown to dark brown F-C SAND with little gravel, trace silt, trace debris (glass, metal, brick, porcelain); moist		
							End of Boring at 4' (Refusal)	(1)	
6									
8									
10									
12									
14									
16									

GRANULAR SOILS		COHESIVE SOILS	
BLOWS/FT	DENSITY	BLOWS/FT	DENSITY
0-4	V. LOOSE	0-2	V. SOFT
4-10	LOOSE	2-4	SOFT
10-30	M. DENSE	4-8	M. STIFF
30-50	DENSE	8-15	STIFF
> 50	V. DENSE	15-30	V. STIFF
		> 30	HARD

NOTES:

1. Refusal at 4' (suspect bedrock).

2. Samples B-202 (0-1) and B-202 (2-4) collected across B-202-1 and B-202-2 for PAHs, MCP 14 metals, and asbestos.

GENERAL NOTES: i) THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES. TRANSITIONS MAY BE GRADUAL.

ii) WATER LEVEL READINGS HAVE BEEN MADE IN THE DRILL HOLES AT TIMES AND UNDER CONDITIONS STATED ON THIS BORING LOG. FLUCTUATIONS IN THE LEVEL OF GROUNDWATER MAY OCCUR DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS ARE MADE.

Weston & Sampson	PROJECT Claxton Field Needham, MA	BORING No B-202-2 SHEET 1 OF 1 Project No. ENG23-0164 CHKD BY ACE

BORING Co.	Bronson Drilling	BORING LOCATION	See attached plan		
FOREMAN	Dan Bronson	GROUND SURFACE ELEV.	NR	DATUM	NR
WSE REP.	Matthew McGuire, Laura McGovern	DATE START	2/16/23	DATE END	2/16/23

SAMPLER: Geoprobe

CASING: 2" inside diameter with 5' sleeve

CASING SIZE: 2" OTHER:

GROUNDWATER OBSERVATIONS

DATE	TIME	WATER AT	CASING AT	STABILIZATION TIME
2/16/23	NR	NR	NA	NA

DEPTH (feet)	CASING (blows/ft)	SAMPLE No.	SAMPLE REC/PEN (in)	SAMPLE DEPTH (ft.)	SAMPLE BLOWS/6"	PID (ppm)	SAMPLE DESCRIPTION	NOTES	STRATUM DESCRIPTION
0	NA	S-1	32/54	0-4.5	NA	0.0	0" - 5" Dark brown F-M SAND, little gravel, little rock	(2)	**TOPSOIL**
2							5" - 27" Light brown to light gray F-C SAND with some gravel; moist		
4							27" - 46" Dark brown to black F-C SAND with little gravel, trace debris (glass, brick, wood); moist		**FILL**
6							46" - 50" ASH, trace debris (burnt wood)		
8							50" - 54" Dark brown SILT; moist		
10							**End of Boring at 4.5' (Refusal)**	(1)	
12									
14									
16									

GRANULAR SOILS		COHESIVE SOILS	
BLOWS/FT	DENSITY	BLOWS/FT	DENSITY
0-4	V. LOOSE	0-2	V. SOFT
4-10	LOOSE	2-4	SOFT
10-30	M. DENSE	4-8	M. STIFF
30-50	DENSE	8-15	STIFF
> 50	V. DENSE	15-30	V. STIFF
		> 30	HARD

NOTES:

1. Refusal at 4.5' (suspect bedrock).

2. Samples B-202 (0-1) and B-202 (2-4) collected across B-202-1 and B-202-2 for PAHs, MCP 14 metals, and asbestos.

GENERAL NOTES: i) THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES. TRANSITIONS MAY BE GRADUAL.

ii) WATER LEVEL READINGS HAVE BEEN MADE IN THE DRILL HOLES AT TIMES AND UNDER CONDITIONS STATED ON THIS BORING LOG. FLUCTUATIONS IN THE LEVEL OF GROUNDWATER MAY OCCUR DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS ARE MADE.

Weston & Sampson	PROJECT Claxton Field Needham, MA	BORING No B-203-1 SHEET 1 OF 1 Project No. ENG23-0164 CHKD BY ACE

BORING Co.	Bronson Drilling	BORING LOCATION	See attached plan		
FOREMAN	Dan Bronson	GROUND SURFACE ELEV.	NR	DATUM	NR
WSE REP.	Matthew McGuire, Laura McGovern	DATE START	2/16/23	DATE END	2/16/23

SAMPLER: Geoprobe

CASING: 2" inside diameter with 5' sleeve

CASING SIZE: 2" OTHER:

GROUNDWATER OBSERVATIONS

DATE	TIME	WATER AT	CASING AT	STABILIZATION TIME
2/16/23	NR	NR	NA	NA

DEPTH (feet)	CASING (blows/ft)	SAMPLE No.	SAMPLE REC/PEN (in)	SAMPLE DEPTH (ft.)	SAMPLE BLOWS/6"	PID (ppm)	SAMPLE DESCRIPTION	NOTES	STRATUM DESCRIPTION
0	NA	S-1	43/72	0-6	NA	0.0	0" - 12" Dark brown F SAND with some silt, trace organics; moist	(1)	**TOPSOIL**
2							12" - 29" Gray to black F-C SAND with some silt, some ash, trace glass; moist		**FILL**
4						0.0	29" - 37.5" Gray to black C SAND with some gravel, some ash, trace glass; moist 37.5" - 72" Dark brown to black F-C SAND with some gravel, some ash, trace debris (white ash, brick, glass); moist		
6							**End of Boring at 6'**		
8									
10									
12									
14									
16									

GRANULAR SOILS		COHESIVE SOILS	
BLOWS/FT	DENSITY	BLOWS/FT	DENSITY
0-4	V. LOOSE	0-2	V. SOFT
4-10	LOOSE	2-4	SOFT
10-30	M. DENSE	4-8	M. STIFF
30-50	DENSE	8-15	STIFF
> 50	V. DENSE	15-30	V. STIFF
		> 30	HARD

NOTES:

1. Samples B-203 (0-1), B-203 (2-4), and B-203(4-6) collected across B-203-1 and B-203-2 for PAHs, MCP 14 metals, asbestos, and dioxins.
2. Duplicate sample collected at (4-6') for PAHs, MCP 14 metals, and asbestos.

GENERAL NOTES: i) THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES. TRANSITIONS MAY BE GRADUAL.

ii) WATER LEVEL READINGS HAVE BEEN MADE IN THE DRILL HOLES AT TIMES AND UNDER CONDITIONS STATED ON THIS BORING LOG. FLUCTUATIONS IN THE LEVEL OF GROUNDWATER MAY OCCUR DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS ARE MADE.

Weston & Sampson	PROJECT Claxton Field Needham, MA	BORING No B-203-2 SHEET 1 OF 1 Project No. ENG23-0164 CHKD BY ACE

BORING Co.	Bronson Drilling	BORING LOCATION	See attached plan		
FOREMAN	Dan Bronson	GROUND SURFACE ELEV.	NR	DATUM	NR
WSE REP.	Matthew McGuire, Laura McGovern	DATE START	2/16/23	DATE END	2/16/23

SAMPLER:	Geoprobe
CASING:	2" inside diameter with 5' sleeve
CASING SIZE:	2" OTHER:

GROUNDWATER OBSERVATIONS

DATE	TIME	WATER AT	CASING AT	STABILIZATION TIME
2/16/23	NR	NR	NA	NA

DEPTH (feet)	CASING (blows/ft)	SAMPLE No.	REC/PEN (in)	DEPTH (ft.)	BLOWS/6"	PID (ppm)	SAMPLE DESCRIPTION	NOTES	STRATUM DESCRIPTION
0	NA						0" - 12" Dark brown F SAND with some silt, trace organics; moist		**TOPSOIL**
2		S-1	19/72	0-6	NA	0.0	12" - 72" Dark brown to black F-C SAND with some silt, some gravel, some ash, trace debris (wood); moist	(1)	**FILL**
4									
6							**End of Boring at 6'**		
8									
10									
12									
14									
16									

GRANULAR SOILS		COHESIVE SOILS	
BLOWS/FT	DENSITY	BLOWS/FT	DENSITY
0-4	V. LOOSE	0-2	V. SOFT
4-10	LOOSE	2-4	SOFT
10-30	M. DENSE	4-8	M. STIFF
30-50	DENSE	8-15	STIFF
> 50	V. DENSE	15-30	V. STIFF
		> 30	HARD

NOTES:

1. Samples B-203 (0-1), B-203 (2-4), and B-203(4-6) collected across B-203-1 and B-203-2 for PAHs, MCP 14 metals, asbestos, and dioxins.
2. Duplicate sample collected at (4-6') for PAHs, MCP 14 metals, and asbestos.

GENERAL NOTES: i) THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES. TRANSITIONS MAY BE GRADUAL.

ii) WATER LEVEL READINGS HAVE BEEN MADE IN THE DRILL HOLES AT TIMES AND UNDER CONDITIONS STATED ON THIS BORING LOG. FLUCTUATIONS IN THE LEVEL OF GROUNDWATER MAY OCCUR DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS ARE MADE.

Weston & Sampson	PROJECT Claxton Field Needham, MA	BORING No B-204-1 SHEET 1 OF 1 Project No. ENG23-0164 CHKD BY ACE

BORING Co.	Bronson Drilling	BORING LOCATION	See attached plan		
FOREMAN	Dan Bronson	GROUND SURFACE ELEV.	NR	DATUM	NR
WSE REP.	Matthew McGuire, Laura McGovern	DATE START	2/16/23	DATE END	2/16/23

SAMPLER:	Geoprobe
CASING:	2" inside diameter with 5' sleeve
CASING SIZE:	2" OTHER:

GROUNDWATER OBSERVATIONS

DATE	TIME	WATER AT	CASING AT	STABILIZATION TIME
2/16/23	NR	NR	NA	NA

DEPTH (feet)	CASING (blows/ft)	SAMPLE No.	SAMPLE REC/PEN (in)	SAMPLE DEPTH (ft.)	SAMPLE BLOWS/6"	PID (ppm)	SAMPLE DESCRIPTION	NOTES	STRATUM DESCRIPTION
0	NA	S-1	26/72	0-6	NA	0.0	0"-12" Light to dark brown F-M SAND with some silt, trace organics; moist	(1)	**TOPSOIL**
2							12"-28" Light brown F-C SAND with some gravel, trace silt, trace roots; moist		**FILL**
4							28"-40" Light brown to gray C SAND with trace gravel; moist		
6							40"-54" Orange to black F-C SAND with some gravel, some ash, trace debris (glass); moist		
8							54"-72" Dark gray to black F-C SAND with some gravel, some debris (glass), trace ash; moist		
10							**End of Boring at 6'**		
12									
14									
16									

GRANULAR SOILS		COHESIVE SOILS	
BLOWS/FT	DENSITY	BLOWS/FT	DENSITY
0-4	V. LOOSE	0-2	V. SOFT
4-10	LOOSE	2-4	SOFT
10-30	M. DENSE	4-8	M. STIFF
30-50	DENSE	8-15	STIFF
> 50	V. DENSE	15-30	V. STIFF
		> 30	HARD

NOTES:

1. Samples B-204 (0-1), B-204 (2-4), and B-204 (4-6) collected across B-204-1 and B-204-2 for PAHs, MCP 14 metals, asbestos, and dioxins.

GENERAL NOTES: i) THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES. TRANSITIONS MAY BE GRADUAL.

ii) WATER LEVEL READINGS HAVE BEEN MADE IN THE DRILL HOLES AT TIMES AND UNDER CONDITIONS STATED ON THIS BORING LOG. FLUCTUATIONS IN THE LEVEL OF GROUNDWATER MAY OCCUR DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS ARE MADE.

Weston & Sampson	PROJECT Claxton Field Needham, MA	BORING No B-204-2 SHEET 1 OF 1 Project No. ENG23-0164 CHKD BY ACE

BORING Co.	Bronson Drilling	BORING LOCATION	See attached plan		
FOREMAN	Dan Bronson	GROUND SURFACE ELEV.	NR	DATUM	NR
WSE REP.	Matthew McGuire, Laura McGovern	DATE START	2/16/23	DATE END	2/16/23

SAMPLER: Geoprobe

CASING: 2" inside diameter with 5' sleeve

CASING SIZE: 2" OTHER:

GROUNDWATER OBSERVATIONS

DATE	TIME	WATER AT	CASING AT	STABILIZATION TIME
2/16/23	NR	NR	NA	NA

DEPTH (feet)	CASING (blows/ft)	SAMPLE No.	SAMPLE REC/PEN (in)	SAMPLE DEPTH (ft.)	SAMPLE BLOWS/6"	PID (ppm)	SAMPLE DESCRIPTION	NOTES	STRATUM DESCRIPTION
0	NA	S-1	31/72	0-6	NA	0.0	0"-12" Light to dark brown F-M SAND with some silt, trace organics; moist	(1)	**TOPSOIL**
2							12"-36" Light to dark brown F-C SAND with some gravel; moist		**FILL**
4							36"-42" Light brown C SAND with trace gravel 42"-66" Dark brown to black F-C SAND, some gravel, some glass, trace brick; moist		
6							66"-72" White ASH, trace glass; moist **End of Boring at 6'**		
8									
10									
12									
14									
16									

GRANULAR SOILS		COHESIVE SOILS	
BLOWS/FT	DENSITY	BLOWS/FT	DENSITY
0-4	V. LOOSE	0-2	V. SOFT
4-10	LOOSE	2-4	SOFT
10-30	M. DENSE	4-8	M. STIFF
30-50	DENSE	8-15	STIFF
> 50	V. DENSE	15-30	V. STIFF
		> 30	HARD

NOTES:

1. Samples B-204 (0-1), B-204 (2-4), and B-204 (4-6) collected across B-204-1 and B-204-2 for PAHs, MCP 14 metals, asbestos, and dioxins.

GENERAL NOTES: i) THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES. TRANSITIONS MAY BE GRADUAL.

ii) WATER LEVEL READINGS HAVE BEEN MADE IN THE DRILL HOLES AT TIMES AND UNDER CONDITIONS STATED ON THIS BORING LOG. FLUCTUATIONS IN THE LEVEL OF GROUNDWATER MAY OCCUR DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS ARE MADE.

BORING No. B-204-2

Weston & Sampson

PROJECT

Claxton Field
Needham, MA

BORING No B-205-1

SHEET 1 OF 1

Project No. ENG23-0164

CHKD BY ACE

BORING Co.	Bronson Drilling	BORING LOCATION	See attached plan		
FOREMAN	Dan Bronson	GROUND SURFACE ELEV.	NR	DATUM	NR
WSE REP.	Matthew McGuire, Laura McGovern	DATE START	2/16/23	DATE END	2/16/23

SAMPLER: Geoprobe

CASING: 2" inside diameter with 5' sleeve

CASING SIZE: 2" OTHER:

GROUNDWATER OBSERVATIONS

DATE	TIME	WATER AT	CASING AT	STABILIZATION TIME
2/16/23	NR	NR	NA	NA

DEPTH (feet)	CASING (blows/ft)	SAMPLE No.	SAMPLE REC/PEN (in)	SAMPLE DEPTH (ft.)	SAMPLE BLOWS/6"	PID (ppm)	SAMPLE DESCRIPTION	NOTES	STRATUM DESCRIPTION
0	NA	S-1	41/72	0-6	NA	NR	0"-12" Dark brown F-M SAND with some silt, trace organics; moist	(1)	**TOPSOIL**
							12"-27" Tan to light brown F-M SAND with some silt, trace gravel, trace brick; moist		**FILL**
2						0.1	27"-55" Gray to black F-C SAND with some ash, little brick, trace glass; moist		
4							55"-61" Light gray F-C SAND with some white ash, little gravel; moist		
						0.0	61"-66" Dark orange F-C SAND with some gravel, some brick, trace glass; moist		
6							66"-72" Light gray to black F-C SAND with some ash, some gravel, trace glass; moist		
							End of Boring at 6'		
8									
10									
12									
14									
16									

GRANULAR SOILS		COHESIVE SOILS	
BLOWS/FT	DENSITY	BLOWS/FT	DENSITY
0-4	V. LOOSE	0-2	V. SOFT
4-10	LOOSE	2-4	SOFT
10-30	M. DENSE	4-8	M. STIFF
30-50	DENSE	8-15	STIFF
> 50	V. DENSE	15-30	V. STIFF
		> 30	HARD

NOTES:

1. Samples B-205 (0-1), B-205 (2-4), and B-205 (4-6) collected across B-205-1 and B-205-2 for PAHs, MCP 14 metals, asbestos, and dioxins.

GENERAL NOTES: i) THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES. TRANSITIONS MAY BE GRADUAL.

ii) WATER LEVEL READINGS HAVE BEEN MADE IN THE DRILL HOLES AT TIMES AND UNDER CONDITIONS STATED ON THIS BORING LOG. FLUCTUATIONS IN THE LEVEL OF GROUNDWATER MAY OCCUR DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS ARE MADE.

Weston & Sampson	PROJECT Claxton Field Needham, MA	BORING No B-205-2 SHEET 1 OF 1 Project No. ENG23-0164 CHKD BY ACE

BORING Co.	Bronson Drilling	BORING LOCATION	See attached plan		
FOREMAN	Dan Bronson	GROUND SURFACE ELEV.	NR	DATUM	NR
WSE REP.	Matthew McGuire, Laura McGovern	DATE START	2/16/23	DATE END	2/16/23

SAMPLER: Geoprobe

CASING: 2" inside diameter with 5' sleeve

CASING SIZE: 2" OTHER:

GROUNDWATER OBSERVATIONS

DATE	TIME	WATER AT	CASING AT	STABILIZATION TIME
2/16/23	NR	NR	NA	NA

DEPTH (feet)	CASING (blows/ft)	SAMPLE No.	SAMPLE REC/PEN (in)	SAMPLE DEPTH (ft.)	SAMPLE BLOWS/6"	PID (ppm)	SAMPLE DESCRIPTION	NOTES	STRATUM DESCRIPTION
0	NA	S-1	38/72	0-6	NA	0.0	0"-12" Dark brown F-M SAND with some silt, trace organics; moist	(1)	**TOPSOIL**
2							12"-34" Light brown to light gray F-C SAND, some ash, trace roots, trace debris (glass, brick); moist		**FILL**
4							34"-44" Light gray to black F-C SAND with some gravel, some ash; moist 44"-50" Brick FILL		
6							50"-72" Light gray to black F-C SAND with some gravel, some ash, trace debris (ceramics, glass); moist **End of Boring at 6'**		
8									
10									
12									
14									
16									

GRANULAR SOILS		COHESIVE SOILS	
BLOWS/FT	DENSITY	BLOWS/FT	DENSITY
0-4	V. LOOSE	0-2	V. SOFT
4-10	LOOSE	2-4	SOFT
10-30	M. DENSE	4-8	M. STIFF
30-50	DENSE	8-15	STIFF
> 50	V. DENSE	15-30	V. STIFF
		> 30	HARD

NOTES:

1. Samples B-205 (0-1), B-205 (2-4), and B-205 (4-6) collected across B-205-1 and B-205-2 for PAHs, MCP 14 metals, asbestos, and dioxins.

GENERAL NOTES: i) THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES. TRANSITIONS MAY BE GRADUAL.

ii) WATER LEVEL READINGS HAVE BEEN MADE IN THE DRILL HOLES AT TIMES AND UNDER CONDITIONS STATED ON THIS BORING LOG. FLUCTUATIONS IN THE LEVEL OF GROUNDWATER MAY OCCUR DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS ARE MADE.

Weston & Sampson

PROJECT

Claxton Field
Needham, MA

BORING No B-206-1

SHEET 1 OF 1

Project No. ENG23-0164

CHKD BY

BORING Co.	Bronson Drilling	BORING LOCATION	See attached plan		
FOREMAN	Dan Bronson	GROUND SURFACE ELEV.	NR	DATUM	NR
WSE REP.	Matthew McGuire, Laura McGovern	DATE START	2/16/23	DATE END	2/16/23

SAMPLER:	Geoprobe
CASING:	2" inside diameter with 5' sleeve
CASING SIZE:	2" OTHER:

GROUNDWATER OBSERVATIONS

DATE	TIME	WATER AT	CASING AT	STABILIZATION TIME
2/16/23	NR	NR	NA	NA

DEPTH (feet)	CASING (blows/ft)	SAMPLE No.	SAMPLE REC/PEN (in)	SAMPLE DEPTH (ft.)	SAMPLE BLOWS/6"	PID (ppm)	SAMPLE DESCRIPTION	NOTES	STRATUM DESCRIPTION
0	NA	S-1	29/60	0-5	NA	0.0	0"-11" Light to dark brown F-M SAND with some silt, trace organics; moist	(2)	**TOPSOIL**
2							11"-24" Light brown F-C SAND with some silt, trace gravel; moist		
							24"-30" Dark orange F-C SAND, some ash, trace brick; moist		**FILL**
							30"-36" Light brown F-M SAND, some silt, some gravel		
4							36"-60" Light gray to light brown F-C SAND with some gravel; moist		
6							**End of Boring at 5' (Refusal)**	(1)	
8									
10									
12									
14									
16									

GRANULAR SOILS		COHESIVE SOILS	
BLOWS/FT	DENSITY	BLOWS/FT	DENSITY
0-4	V. LOOSE	0-2	V. SOFT
4-10	LOOSE	2-4	SOFT
10-30	M. DENSE	4-8	M. STIFF
30-50	DENSE	8-15	STIFF
> 50	V. DENSE	15-30	V. STIFF
		> 30	HARD

NOTES:

1. Refusal at 5' (suspect bedrock).

2. Samples B-206 (0-1), B-206 (2-4), and B-206 (4-6) collected across B-206-1 and B-206-2 for PAHs, MCP 14 metals, and asbestos.

GENERAL NOTES: i) THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES. TRANSITIONS MAY BE GRADUAL.

ii) WATER LEVEL READINGS HAVE BEEN MADE IN THE DRILL HOLES AT TIMES AND UNDER CONDITIONS STATED ON THIS BORING LOG. FLUCTUATIONS IN THE LEVEL OF GROUNDWATER MAY OCCUR DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS ARE MADE.

BORING No. B-206-1

Weston & Sampson	PROJECT Claxton Field Needham, MA	BORING No B-206-2 SHEET 1 OF 1 Project No. ENG23-0164 CHKD BY ACE

BORING Co.	Bronson Drilling	BORING LOCATION	See attached plan		
FOREMAN	Dan Bronson	GROUND SURFACE ELEV.	NR	DATUM	NR
WSE REP.	Matthew McGuire, Laura McGovern	DATE START	2/16/23	DATE END	2/16/23

SAMPLER: Geoprobe

CASING: 2" inside diameter with 5' sleeve

CASING SIZE: 2" OTHER:

GROUNDWATER OBSERVATIONS

DATE	TIME	WATER AT	CASING AT	STABILIZATION TIME
2/16/23	NR	NR	NA	NA

DEPTH (feet)	CASING (blows/ft)	SAMPLE No.	SAMPLE REC/PEN (in)	SAMPLE DEPTH (ft.)	SAMPLE BLOWS/6"	PID (ppm)	SAMPLE DESCRIPTION	NOTES	STRATUM DESCRIPTION
0	NA	S-1	26/60	0-5	NA	0.0	0"-11" Light to dark brown F-M SAND with some silt, trace organics; moist	(2)	**TOPSOIL**
2							11"-26" Light gray to black F-C SAND, some ash, some gravel, trace debris (white ash, brick); moist		**FILL**
4							26"-45" Black to brown F-C SAND with some silt, little gravel; moist		
6							45"-60" Light gray F-C SAND with some gravel; moist		
8							**End of Boring at 5' (Refusal)**	(1)	
10									
12									
14									
16									

GRANULAR SOILS		COHESIVE SOILS	
BLOWS/FT	DENSITY	BLOWS/FT	DENSITY
0-4	V. LOOSE	0-2	V. SOFT
4-10	LOOSE	2-4	SOFT
10-30	M. DENSE	4-8	M. STIFF
30-50	DENSE	8-15	STIFF
> 50	V. DENSE	15-30	V. STIFF
		> 30	HARD

NOTES:

1. Refusal at 5' (suspect bedrock).

2. Samples B-206 (0-1), B-206 (2-4), and B-206 (4-6) collected across B-206-1 and B-206-2 for PAHs, MCP 14 metals, and asbestos.

GENERAL NOTES: i) THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES. TRANSITIONS MAY BE GRADUAL.

ii) WATER LEVEL READINGS HAVE BEEN MADE IN THE DRILL HOLES AT TIMES AND UNDER CONDITIONS STATED ON THIS BORING LOG. FLUCTUATIONS IN THE LEVEL OF GROUNDWATER MAY OCCUR DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS ARE MADE.

Weston & Sampson

PROJECT	BORING No	PER-1
Claxton Field Needham, MA	SHEET	1 OF 1
	Project No.	ENG23-0164
	CHKD BY	ACE

BORING Co.	Bronson Drilling	BORING LOCATION	See attached plan		
FOREMAN	Dan Bronson	GROUND SURFACE ELEV.	NR	DATUM	NR
WSE REP.	Matthew McGuire, Laura McGovern	DATE START	2/16/23	DATE END	2/16/23

SAMPLER: Geoprobe

CASING: 2" inside diameter with 5' sleeve

CASING SIZE: 2" OTHER:

GROUNDWATER OBSERVATIONS

DATE	TIME	WATER AT	CASING AT	STABILIZATION TIME
2/16/23	NR	NR	NA	NA

DEPTH (feet)	CASING (blows/ft)	SAMPLE No.	SAMPLE REC/PEN (in)	SAMPLE DEPTH (ft.)	SAMPLE BLOWS/6"	PID (ppm)	SAMPLE DESCRIPTION	NOTES	STRATUM DESCRIPTION
0	NA	S-1	37/72	0-6	NA	NR	0"-12" Dark brown F SAND with some silt, trace organics; moist		**TOPSOIL**
2							12"-68" Dark brown to black F-C SAND with trace gravel, trace debris (brick, glass, metal, ash), trace silt; moist		**FILL**
4									
6							68"-72" Dark brown F-C SAND with some ash, trace rock, trace debris (glass); moist		
8							**End of Boring at 6'**		
10									
12									
14									
16									

GRANULAR SOILS		COHESIVE SOILS	
BLOWS/FT	DENSITY	BLOWS/FT	DENSITY
0-4	V. LOOSE	0-2	V. SOFT
4-10	LOOSE	2-4	SOFT
10-30	M. DENSE	4-8	M. STIFF
30-50	DENSE	8-15	STIFF
> 50	V. DENSE	15-30	V. STIFF
		> 30	HARD

NOTES:

GENERAL NOTES: i) THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES. TRANSITIONS MAY BE GRADUAL.

ii) WATER LEVEL READINGS HAVE BEEN MADE IN THE DRILL HOLES AT TIMES AND UNDER CONDITIONS STATED ON THIS BORING LOG. FLUCTUATIONS IN THE LEVEL OF GROUNDWATER MAY OCCUR DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS ARE MADE.

BORING No. PER-1

Weston & Sampson	PROJECT Claxton Field Needham, MA	BORING No PER-2 SHEET 1 OF 1 Project No. ENG23-0164 CHKD BY ACE

BORING Co.	Bronson Drilling	BORING LOCATION	See attached plan
FOREMAN	Dan Bronson	GROUND SURFACE ELEV.	NR DATUM NR
WSE REP.	Matthew McGuire, Laura McGovern	DATE START 2/16/23	DATE END 2/16/23

SAMPLER: Geoprobe

CASING: 2" inside diameter with 5' sleeve

CASING SIZE: 2" OTHER:

GROUNDWATER OBSERVATIONS

DATE	TIME	WATER AT	CASING AT	STABILIZATION TIME
2/16/23	NR	NR	NA	NA

DEPTH (feet)	CASING (blows/ft)	SAMPLE No.	SAMPLE REC/PEN (in)	SAMPLE DEPTH (ft.)	SAMPLE BLOWS/6"	PID (ppm)	SAMPLE DESCRIPTION	NOTES	STRATUM DESCRIPTION
0	NA	S-1	30/72	0-6	NA	NR	0"-12" Light to dark brown F SAND with some silt, trace roots; moist		**TOPSOIL**
							12"-26" Tan to light brown F SAND with some silt, trace roots; moist		**FILL**
2							26"-44" Light brown to gray F-C SAND with some gravel, trace debris (ash, glass, brick); moist		
4							44"-49" Dark orange F-C SAND with trace gravel, trace debris (ash, glass); moist		
							49"-72" Brown F-C SAND with some silt, trace gravel, trace roots; moist		
6							**End of Boring at 6'**		
8									
10									
12									
14									
16									

GRANULAR SOILS		COHESIVE SOILS	
BLOWS/FT	DENSITY	BLOWS/FT	DENSITY
0-4	V. LOOSE	0-2	V. SOFT
4-10	LOOSE	2-4	SOFT
10-30	M. DENSE	4-8	M. STIFF
30-50	DENSE	8-15	STIFF
> 50	V. DENSE	15-30	V. STIFF
		> 30	HARD

NOTES:

GENERAL NOTES: i) THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES. TRANSITIONS MAY BE GRADUAL.

ii) WATER LEVEL READINGS HAVE BEEN MADE IN THE DRILL HOLES AT TIMES AND UNDER CONDITIONS STATED ON THIS BORING LOG. FLUCTUATIONS IN THE LEVEL OF GROUNDWATER MAY OCCUR DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS ARE MADE.

Weston & Sampson	PROJECT Claxton Field Needham, MA	BORING No PER-3 SHEET 1 OF 1 Project No. ENG23-0164 CHKD BY ACE

BORING Co.	Bronson Drilling	BORING LOCATION	See attached plan
FOREMAN	Dan Bronson	GROUND SURFACE ELEV.	NR DATUM NR
WSE REP.	Matthew McGuire, Laura McGovern	DATE START 2/16/23	DATE END 2/16/23

SAMPLER: Geoprobe

CASING: 2" inside diameter with 5' sleeve

CASING SIZE: 2" OTHER:

GROUNDWATER OBSERVATIONS

DATE	TIME	WATER AT	CASING AT	STABILIZATION TIME
2/16/23	NR	NR	NA	NA

DEPTH (feet)	CASING (blows/ft)	SAMPLE No.	SAMPLE REC/PEN (in)	SAMPLE DEPTH (ft.)	SAMPLE BLOWS/6"	PID (ppm)	SAMPLE DESCRIPTION	NOTES	STRATUM DESCRIPTION
0	NA						0"-14" Light to dark brown F SAND with some silt, trace roots; moist		**TOPSOIL**
2							14"-26" Tan F-M SAND with little silt; moist		
4		S-1	36/72	0-6	NA	NR	26"-72" Dark brown to light brown F-C SAND with some gravel, some ash, some debris (glass, paper), little burnt wood; moist		**FILL**
6							**End of Boring at 6'**		
8									
10									
12									
14									
16									

GRANULAR SOILS		COHESIVE SOILS	
BLOWS/FT	DENSITY	BLOWS/FT	DENSITY
0-4	V. LOOSE	0-2	V. SOFT
4-10	LOOSE	2-4	SOFT
10-30	M. DENSE	4-8	M. STIFF
30-50	DENSE	8-15	STIFF
> 50	V. DENSE	15-30	V. STIFF
		> 30	HARD

NOTES:

GENERAL NOTES: i) THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES. TRANSITIONS MAY BE GRADUAL.

ii) WATER LEVEL READINGS HAVE BEEN MADE IN THE DRILL HOLES AT TIMES AND UNDER CONDITIONS STATED ON THIS BORING LOG. FLUCTUATIONS IN THE LEVEL OF GROUNDWATER MAY OCCUR DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS ARE MADE.

Weston & Sampson	PROJECT Claxton Field Needham, MA	BORING No PER-4 SHEET 1 OF 1 Project No. ENG23-0164 CHKD BY ACE

BORING Co.	Bronson Drilling	BORING LOCATION	See attached plan		
FOREMAN	Dan Bronson	GROUND SURFACE ELEV.	NR	DATUM	NR
WSE REP.	Matthew McGuire, Laura McGovern	DATE START	2/16/23	DATE END	2/16/23

SAMPLER: Geoprobe

CASING: 2" inside diameter with 5' sleeve

CASING SIZE: 2" OTHER:

GROUNDWATER OBSERVATIONS

DATE	TIME	WATER AT	CASING AT	STABILIZATION TIME
2/16/23	NR	NR	NA	NA

DEPTH (feet)	CASING (blows/ft)	SAMPLE No.	SAMPLE REC/PEN (in)	SAMPLE DEPTH (ft.)	SAMPLE BLOWS/6"	PID (ppm)	SAMPLE DESCRIPTION	NOTES	STRATUM DESCRIPTION
0	NA	S-1	22/72	0-6	NA	NR	0"-20" Light to dark brown F SAND with some silt, trace roots; moist		**TOPSOIL**
2							20"-36" Light brown to gray F-C SAND, some gravel, trace silt; moist		**FILL**
4							36"-72" Dark brown to black F-C SAND with some gravel, some ash, trace silt, trace wood; moist		
6							**End of Boring at 6'**		
8									
10									
12									
14									
16									

GRANULAR SOILS		COHESIVE SOILS	
BLOWS/FT	DENSITY	BLOWS/FT	DENSITY
0-4	V. LOOSE	0-2	V. SOFT
4-10	LOOSE	2-4	SOFT
10-30	M. DENSE	4-8	M. STIFF
30-50	DENSE	8-15	STIFF
> 50	V. DENSE	15-30	V. STIFF
		> 30	HARD

NOTES:

GENERAL NOTES: i) THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES. TRANSITIONS MAY BE GRADUAL.

ii) WATER LEVEL READINGS HAVE BEEN MADE IN THE DRILL HOLES AT TIMES AND UNDER CONDITIONS STATED ON THIS BORING LOG. FLUCTUATIONS IN THE LEVEL OF GROUNDWATER MAY OCCUR DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS ARE MADE.

Weston & Sampson	PROJECT Claxton Field Needham, MA	BORING No PER-5 SHEET 1 OF 1 Project No. ENG23-0164 CHKD BY ACE

BORING Co.	Bronson Drilling	BORING LOCATION	See attached plan		
FOREMAN	Dan Bronson	GROUND SURFACE ELEV.	NR	DATUM	NR
WSE REP.	Matthew McGuire, Laura McGovern	DATE START	2/16/23	DATE END	2/16/23

SAMPLER: Geoprobe

CASING: 2" inside diameter with 5' sleeve

CASING SIZE: 2" OTHER:

GROUNDWATER OBSERVATIONS

DATE	TIME	WATER AT	CASING AT	STABILIZATION TIME
2/16/23	NR	NR	NA	NA

DEPTH (feet)	CASING (blows/ft)	SAMPLE No.	SAMPLE REC/PEN (in)	SAMPLE DEPTH (ft.)	SAMPLE BLOWS/6"	PID (ppm)	SAMPLE DESCRIPTION	NOTES	STRATUM DESCRIPTION
0	NA	S-1	27/72	0-6	NA	NR	0"-18" Light to dark brown F SAND with some silt, trace roots; moist		**TOPSOIL**
2							18"-36" Light to dark brown F-M SAND with some silt, trace gravel; moist		**FILL**
4							36"-46" Gray to light brown C SAND with some gravel, trace silt; moist		
6							46"-72" Dark brown to gray F-C SAND with some gravel, some ash, some silt, trace glass; moist		
8							**End of Boring at 6'**		
10									
12									
14									
16									

GRANULAR SOILS		COHESIVE SOILS	
BLOWS/FT	DENSITY	BLOWS/FT	DENSITY
0-4	V. LOOSE	0-2	V. SOFT
4-10	LOOSE	2-4	SOFT
10-30	M. DENSE	4-8	M. STIFF
30-50	DENSE	8-15	STIFF
> 50	V. DENSE	15-30	V. STIFF
		> 30	HARD

NOTES:

GENERAL NOTES: i) THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES. TRANSITIONS MAY BE GRADUAL.

ii) WATER LEVEL READINGS HAVE BEEN MADE IN THE DRILL HOLES AT TIMES AND UNDER CONDITIONS STATED ON THIS BORING LOG. FLUCTUATIONS IN THE LEVEL OF GROUNDWATER MAY OCCUR DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS ARE MADE.

Weston & Sampson	PROJECT Claxton Field Needham, MA	BORING No PER-6 SHEET 1 OF 1 Project No. ENG23-0164 CHKD BY ACE

BORING Co.	Bronson Drilling	BORING LOCATION	See attached plan
FOREMAN	Dan Bronson	GROUND SURFACE ELEV.	NR DATUM NR
WSE REP.	Matthew McGuire, Laura McGovern	DATE START 2/16/23	DATE END 2/16/23

SAMPLER: Geoprobe

CASING: 2" inside diameter with 5' sleeve

CASING SIZE: 2" OTHER:

GROUNDWATER OBSERVATIONS

DATE	TIME	WATER AT	CASING AT	STABILIZATION TIME
2/16/23	NR	NR	NA	NA

DEPTH (feet)	CASING (blows/ft)	SAMPLE No.	SAMPLE REC/PEN (in)	SAMPLE DEPTH (ft.)	SAMPLE BLOWS/6"	PID (ppm)	SAMPLE DESCRIPTION	NOTES	STRATUM DESCRIPTION
0	NA						0"-12" Light to dark brown F SAND with some silt, trace roots; moist		**TOPSOIL**
2		S-1	33/72	0-6	NA	NR	12"- 72" Light brown to grayish brown F-M SAND, little silt, little debris (ash ceramic, glass, and metal); 3" of ash starting at approximately 40" bgs		**FILL**
4									
6							**End of Boring at 6'**		
8									
10									
12									
14									
16									

GRANULAR SOILS		COHESIVE SOILS	
BLOWS/FT	DENSITY	BLOWS/FT	DENSITY
0-4	V. LOOSE	0-2	V. SOFT
4-10	LOOSE	2-4	SOFT
10-30	M. DENSE	4-8	M. STIFF
30-50	DENSE	8-15	STIFF
> 50	V. DENSE	15-30	V. STIFF
		> 30	HARD

NOTES:

GENERAL NOTES: i) THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES. TRANSITIONS MAY BE GRADUAL.

ii) WATER LEVEL READINGS HAVE BEEN MADE IN THE DRILL HOLES AT TIMES AND UNDER CONDITIONS STATED ON THIS BORING LOG. FLUCTUATIONS IN THE LEVEL OF GROUNDWATER MAY OCCUR DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS ARE MADE.

BORING No. PER-5

Weston & Sampson	PROJECT Claxton Field Needham, MA	BORING No PER-7 SHEET 1 OF 1 Project No. ENG23-0164 CHKD BY ACE

BORING Co.	Bronson Drilling	BORING LOCATION	See attached plan		
FOREMAN	Dan Bronson	GROUND SURFACE ELEV.	NR	DATUM	NR
WSE REP.	Matthew McGuire, Laura McGovern	DATE START	2/16/23	DATE END	2/16/23

SAMPLER: Geoprobe

CASING: 2" inside diameter with 5' sleeve

CASING SIZE: 2" OTHER:

GROUNDWATER OBSERVATIONS

DATE	TIME	WATER AT	CASING AT	STABILIZATION TIME
2/16/23	NR	NR	NA	NA

DEPTH (feet)	CASING (blows/ft)	SAMPLE No.	SAMPLE REC/PEN (in)	SAMPLE DEPTH (ft.)	SAMPLE BLOWS/6"	PID (ppm)	SAMPLE DESCRIPTION	NOTES	STRATUM DESCRIPTION
0	NA	S-1	13/24	0-2	NA	NR	0"-12" Light to dark brown F SAND with some silt, trace roots; moist		**TOPSOIL**
							12"-24" Tan F-M SAND, some rock, little silt; fractured rock starting at 20"		**FILL**
2							**End of Boring at 2' (Refusal)**		
4									
6									
8									
10									
12									
14									
16									

GRANULAR SOILS		COHESIVE SOILS	
BLOWS/FT	DENSITY	BLOWS/FT	DENSITY
0-4	V. LOOSE	0-2	V. SOFT
4-10	LOOSE	2-4	SOFT
10-30	M. DENSE	4-8	M. STIFF
30-50	DENSE	8-15	STIFF
> 50	V. DENSE	15-30	V. STIFF
		> 30	HARD

NOTES:

GENERAL NOTES: i) THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES. TRANSITIONS MAY BE GRADUAL.

ii) WATER LEVEL READINGS HAVE BEEN MADE IN THE DRILL HOLES AT TIMES AND UNDER CONDITIONS STATED ON THIS BORING LOG. FLUCTUATIONS IN THE LEVEL OF GROUNDWATER MAY OCCUR DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS ARE MADE.

BORING No. PER-5

Weston & Sampson	PROJECT Claxton Field Needham, MA	BORING No PER-8 SHEET 1 OF 1 Project No. ENG23-0164 CHKD BY ACE

BORING Co.	Bronson Drilling	BORING LOCATION	See attached plan		
FOREMAN	Dan Bronson	GROUND SURFACE ELEV.	NR	DATUM	NR
WSE REP.	Matthew McGuire, Laura McGovern	DATE START	2/16/23	DATE END	2/16/23

SAMPLER: Geoprobe

CASING: 2" inside diameter with 5' sleeve

CASING SIZE: 2" OTHER:

GROUNDWATER OBSERVATIONS

DATE	TIME	WATER AT	CASING AT	STABILIZATION TIME
2/16/23	NR	NR	NA	NA

DEPTH (feet)	CASING (blows/ft)	SAMPLE No.	SAMPLE REC/PEN (in)	SAMPLE DEPTH (ft.)	SAMPLE BLOWS/6"	PID (ppm)	SAMPLE DESCRIPTION	NOTES	STRATUM DESCRIPTION
0	NA						0"-12" Light to dark brown F SAND with some silt, trace roots; moist		**TOPSOIL**
2		S-1	21/72	0-6	NA	NR	12"-72" Black F-M SAND, little organics, little silt, little rock, little debris (glass and metal)		**FILL**
4									
6							**End of Boring at 6'**		
8									
10									
12									
14									
16									

GRANULAR SOILS		COHESIVE SOILS	
BLOWS/FT	DENSITY	BLOWS/FT	DENSITY
0-4	V. LOOSE	0-2	V. SOFT
4-10	LOOSE	2-4	SOFT
10-30	M. DENSE	4-8	M. STIFF
30-50	DENSE	8-15	STIFF
> 50	V. DENSE	15-30	V. STIFF
		> 30	HARD

NOTES:

GENERAL NOTES: i) THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES. TRANSITIONS MAY BE GRADUAL.

ii) WATER LEVEL READINGS HAVE BEEN MADE IN THE DRILL HOLES AT TIMES AND UNDER CONDITIONS STATED ON THIS BORING LOG. FLUCTUATIONS IN THE LEVEL OF GROUNDWATER MAY OCCUR DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS ARE MADE.

BORING No. PER-5

Laboratory Analytical Reports

CERTIFICATE OF ANALYSIS

Lee Koska
Weston and Sampson Engineers, Inc.
5 Centennial Drive
Peabody, MA 01960

RE: Claxton Field (N/A)
ESS Laboratory Work Order Number: 23B0634

This signed Certificate of Analysis is our approved release of your analytical results. These results are only representative of sample aliquots received at the laboratory. ESS Laboratory expects its clients to follow all regulatory sampling guidelines. Beginning with this page, the entire report has been paginated. This report should not be copied except in full without the approval of the laboratory. Samples will be disposed of thirty days after the final report has been delivered. If you have any questions or concerns, please feel free to call our Customer Service Department.

Laurel Stoddard
Laboratory Director

REVIEWED
By ESS Laboratory at 4:37 pm, Mar 14, 2023

Analytical Summary
The project as described above has been analyzed in accordance with the ESS Quality Assurance Plan. This plan utilizes the following methodologies: US EPA SW-846, US EPA Methods for Chemical Analysis of Water and Wastes per 40 CFR Part 136, APHA Standard Methods for the Examination of Water and Wastewater, American Society for Testing and Materials (ASTM), and other recognized methodologies. The analyses with these noted observations are in conformance to the Quality Assurance Plan. In chromatographic analysis, manual integration is frequently used instead of automated integration because it produces more accurate results.

The test results present in this report are in compliance with TNI and relative state standards, and/or client Quality Assurance Project Plans (QAPP). The laboratory has reviewed the following: Sample Preservations, Hold Times, Initial Calibrations, Continuing Calibrations, Method Blanks, Blank Spikes, Blank Spike Duplicates, Duplicates, Matrix Spikes, Matrix Spike Duplicates, Surrogates and Internal Standards. Any results which were found to be outside of the recommended ranges stated in our SOPs will be noted in the Project Narrative.

Subcontracted Analyses

Aerobiology Boston - Woburn, MA	Asbestos
Pace Analytical, Inc. - Minneapolis, MN	Dioxin

CERTIFICATE OF ANALYSIS

Client Name: Weston and Sampson Engineers, Inc.
Client Project ID: Claxton Field

ESS Laboratory Work Order: 23B0634

SAMPLE RECEIPT

The following samples were received on February 17, 2023 for the analyses specified on the enclosed Chain of Custody Record.

To achieve CAM compliance for MCP data, ESS Laboratory has reviewed all QA/QC Requirements and Performance Standards listed in each method. Holding times and preservation have also been reviewed. All CAM requirements have been performed and achieved unless noted in the project narrative.

Each method has been set-up in the laboratory to reach required MCP standards. The methods for aqueous VOA and Soil Methanol VOA have known limitations for certain analytes. The regulatory standards may not be achieved due to these limitations. In addition, for all methods, matrix interferences, dilutions, and %Solids may elevate method reporting limits above regulatory standards. ESS Laboratory can provide, upon request, a Limit Checker (regulatory standard comparison spreadsheet) electronic deliverable which will highlight these exceedances.

Question I: All samples for SVOA were analyzed for a subset of the required MCP list per the client's request.

Lab Number	Sample Name	Matrix	Analysis
23B0634-01	B-201 - 0-1	Soil	6010C, 7471B, 8270D, SUB
23B0634-02	B-201 - 2-4	Soil	6010C, 6020A, 7471B, 8270D, SUB
23B0634-03	B-201 - 4-6	Soil	6010C, 6020A, 7471B, 8270D, SUB
23B0634-04	B-202 - 0-1	Soil	6010C, 7471B, 8270D, SUB
23B0634-05	B-202 - 2-4	Soil	6010C, 6020A, 7471B, 8270D, SUB
23B0634-06	B-203 - 0-1	Soil	6010C, 6020A, 7471B, 8270D, SUB
23B0634-07	B-203 - 2-4	Soil	6010C, 7471B, 8270D, SUB
23B0634-08	B-203 - 4-6	Soil	6010C, 6020A, 7471B, 8270D, SUB
23B0634-09	B-204 - 0-1	Soil	6010C, 7471B, 8270D, SUB
23B0634-10	B-204 - 2-4	Soil	6010C, 7471B, 8270D, SUB
23B0634-11	B-204 - 4-6	Soil	6010C, 6020A, 7471B, 8270D, SUB
23B0634-12	B-205 - 0-1	Soil	6010C, 7471B, 8270D, SUB
23B0634-13	B-205 - 2-4	Soil	6010C, 7471B, 8270D, SUB
23B0634-14	B-205 - 4-6	Soil	6010C, 7471B, 8270D, SUB
23B0634-15	B-206 - 0-1	Soil	6010C, 7471B, 8270D, SUB
23B0634-16	B-206 - 2-4	Soil	6010C, 6020A, 7471B, 8270D, SUB
23B0634-17	B-206 - 4-5	Soil	6010C, 7471B, 8270D, SUB
23B0634-18	B-207F - 4-6	Soil	6010C, 7471B, 8270D, SUB
23B0634-19	CF-STOCKPILE	Soil	6010C, 7471B, 8270D, SUB

CERTIFICATE OF ANALYSIS

Client Name: Weston and Sampson Engineers, Inc.
Client Project ID: Claxton Field

ESS Laboratory Work Order: 23B0634

PROJECT NARRATIVE

Total Metals

23B0634-02	**Elevated Method Reporting Limits due to sample matrix (EL).**
	Silver
23B0634-05	**Elevated Method Reporting Limits due to sample matrix (EL).**
	Silver
23B0634-11	**Elevated Method Reporting Limits due to sample matrix (EL).**
	Silver
23B0634-16	**Elevated Method Reporting Limits due to sample matrix (EL).**
	Silver
23B0634-17	**Elevated Method Reporting Limits due to sample matrix (EL).**
	Lead
DB32002-BSD1	**Blank Spike recovery is below lower control limit (B-).**
	Cadmium (79% @ 80-120%), Selenium (79% @ 80-120%), Zinc (77% @ 80-120%)

No other observations noted.

End of Project Narrative.

DATA USABILITY LINKS

To ensure you are viewing the most current version of the documents below, please clear your internet cookies for www.ESSLaboratory.com. Consult your IT Support personnel for information on how to clear your internet cookies.

Definitions of Quality Control Parameters

Semivolatile Organics Internal Standard Information

Semivolatile Organics Surrogate Information

Volatile Organics Internal Standard Information

Volatile Organics Surrogate Information

EPH and VPH Alkane Lists

CERTIFICATE OF ANALYSIS

Client Name: Weston and Sampson Engineers, Inc.
Client Project ID: Claxton Field

ESS Laboratory Work Order: 23B0634

CURRENT SW-846 METHODOLOGY VERSIONS

Analytical Methods

1010A - Flashpoint
6010C - ICP
6020A - ICP MS
7010 - Graphite Furnace
7196A - Hexavalent Chromium
7470A - Aqueous Mercury
7471B - Solid Mercury
8011 - EDB/DBCP/TCP
8015C - GRO/DRO
8081B - Pesticides
8082A - PCB
8100M - TPH
8151A - Herbicides
8260B - VOA
8270D - SVOA
8270D SIM - SVOA Low Level
9014 - Cyanide
9038 - Sulfate
9040C - Aqueous pH
9045D - Solid pH (Corrosivity)
9050A - Specific Conductance
9056A - Anions (IC)
9060A - TOC
9095B - Paint Filter
MADEP 04-1.1 - EPH
MADEP 18-2.1 - VPH

Prep Methods

3005A - Aqueous ICP Digestion
3020A - Aqueous Graphite Furnace / ICP MS Digestion
3050B - Solid ICP / Graphite Furnace / ICP MS Digestion
3060A - Solid Hexavalent Chromium Digestion
3510C - Separatory Funnel Extraction
3520C - Liquid / Liquid Extraction
3540C - Manual Soxhlet Extraction
3541 - Automated Soxhlet Extraction
3546 - Microwave Extraction
3580A - Waste Dilution
5030B - Aqueous Purge and Trap
5030C - Aqueous Purge and Trap
5035A - Solid Purge and Trap

SW846 Reactivity Methods 7.3.3.2 (Reactive Cyanide) and 7.3.4.1 (Reactive Sulfide) have been withdrawn by EPA. These methods are reported per client request and are not NELAP accredited.

CERTIFICATE OF ANALYSIS

Client Name: Weston and Sampson Engineers, Inc.
Client Project ID: Claxton Field

ESS Laboratory Work Order: 23B0634

MassDEP Analytical Protocol Certification Form

MADEP RTN: _____

This form provides certification for the following data set: **23B0634-01 through 23B0634-19**

Matrices: ( ) Ground Water/Surface Water (x) Soil/Sediment ( ) Drinking Water ( ) Air ( ) Other:_____

CAM Protocol (check all that apply below):

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

Affirmative responses to questions A through F are required for "Presumptive Certainty" status

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

Responses to Questions G, H and I below are required for "'Presumptive Certainty" status

G	Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocols(s)? ***Data User Note:*** ***Data that achieve "Presumptive Certainty" status may not necessarily meet the data usability and representativeness requirements described in 310 CMR 40. 1056 (2)(k) and WSC-07-350.***	Yes ( ) No (X)*
H	Were **all** QC performance standards specified in the CAM protocol(s) achieved?	Yes ( ) No (x)*
I	Were results reported for the complete analyte list specified in the selected CAM protocol(s)?	Yes ( ) No (X)*

All negative responses must be addressed in an attached laboratory narrative.

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

Signature: Laurel Stoddard Date: March 14, 2023

Printed Name: Laurel Stoddard Position: Laboratory Director

CERTIFICATE OF ANALYSIS

Client Name: Weston and Sampson Engineers, Inc.
Client Project ID: Claxton Field
Client Sample ID: B-201 - 0-1
Date Sampled: 02/16/23 10:45
Percent Solids: 86

ESS Laboratory Work Order: 23B0634
ESS Laboratory Sample ID: 23B0634-01
Sample Matrix: Soil
Units: mg/kg dry

Extraction Method: 3050B

Total Metals

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Antimony	ND (5.03)		6010C		1	CEV	02/21/23 11:00	2.3	100	DB32002
Arsenic	**4.84** (2.52)		6010C		1	CEV	02/21/23 11:00	2.3	100	DB32002
Barium	**44.7** (2.52)		6010C		1	CEV	02/21/23 11:00	2.3	100	DB32002
Beryllium	**0.29** (0.11)		6010C		1	CEV	02/21/23 11:00	2.3	100	DB32002
Cadmium	ND (0.50)		6010C		1	CEV	02/21/23 11:00	2.3	100	DB32002
Chromium	**12.7** (1.01)		6010C		1	CEV	02/21/23 11:00	2.3	100	DB32002
Lead	**112** (5.03)		6010C		1	CEV	02/21/23 11:00	2.3	100	DB32002
Mercury	**0.042** (0.033)		7471B		1	YIV	02/23/23 10:41	0.69	40	DB32003
Nickel	**9.46** (2.52)		6010C		1	CEV	02/21/23 11:00	2.3	100	DB32002
Selenium	ND (5.03)		6010C		1	CEV	02/21/23 11:00	2.3	100	DB32002
Silver	ND (0.50)		6010C		1	CEV	02/21/23 11:00	2.3	100	DB32002
Thallium	ND (5.03)		6010C		1	CEV	02/21/23 11:00	2.3	100	DB32002
Vanadium	**20.8** (1.01)		6010C		1	CEV	02/21/23 11:00	2.3	100	DB32002
Zinc	**63.0** (2.52)		6010C		1	CEV	02/21/23 11:00	2.3	100	DB32002

CERTIFICATE OF ANALYSIS

Client Name: Weston and Sampson Engineers, Inc.
Client Project ID: Claxton Field
Client Sample ID: B-201 - 0-1
Date Sampled: 02/16/23 10:45
Percent Solids: 86
Initial Volume: 20.2g
Final Volume: 1ml
Extraction Method: 3546

ESS Laboratory Work Order: 23B0634
ESS Laboratory Sample ID: 23B0634-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 2/21/23 12:35

8270D Polynuclear Aromatic Hydrocarbons

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
2-Methylnaphthalene	ND (0.287)		8270D		1	02/21/23 20:51	D3B0372	DB32111
Acenaphthene	ND (0.287)		8270D		1	02/21/23 20:51	D3B0372	DB32111
Acenaphthylene	ND (0.287)		8270D		1	02/21/23 20:51	D3B0372	DB32111
Anthracene	ND (0.287)		8270D		1	02/21/23 20:51	D3B0372	DB32111
Benzo(a)anthracene	ND (0.287)		8270D		1	02/21/23 20:51	D3B0372	DB32111
Benzo(a)pyrene	ND (0.287)		8270D		1	02/21/23 20:51	D3B0372	DB32111
Benzo(b)fluoranthene	ND (0.287)		8270D		1	02/21/23 20:51	D3B0372	DB32111
Benzo(g,h,i)perylene	ND (0.287)		8270D		1	02/21/23 20:51	D3B0372	DB32111
Benzo(k)fluoranthene	ND (0.287)		8270D		1	02/21/23 20:51	D3B0372	DB32111
Chrysene	ND (0.287)		8270D		1	02/21/23 20:51	D3B0372	DB32111
Dibenzo(a,h)Anthracene	ND (0.287)		8270D		1	02/21/23 20:51	D3B0372	DB32111
Fluoranthene	ND (0.287)		8270D		1	02/21/23 20:51	D3B0372	DB32111
Fluorene	ND (0.287)		8270D		1	02/21/23 20:51	D3B0372	DB32111
Indeno(1,2,3-cd)Pyrene	ND (0.287)		8270D		1	02/21/23 20:51	D3B0372	DB32111
Naphthalene	ND (0.287)		8270D		1	02/21/23 20:51	D3B0372	DB32111
Phenanthrene	ND (0.287)		8270D		1	02/21/23 20:51	D3B0372	DB32111
Pyrene	ND (0.287)		8270D		1	02/21/23 20:51	D3B0372	DB32111

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichlorobenzene-d4	*67 %*		*30-130*
Surrogate: 2-Fluorobiphenyl	*73 %*		*30-130*
Surrogate: Nitrobenzene-d5	*69 %*		*30-130*
Surrogate: p-Terphenyl-d14	*89 %*		*30-130*

CERTIFICATE OF ANALYSIS

Client Name: Weston and Sampson Engineers, Inc.
Client Project ID: Claxton Field
Client Sample ID: B-201 - 0-1
Date Sampled: 02/16/23 10:45

ESS Laboratory Work Order: 23B0634
ESS Laboratory Sample ID: 23B0634-01
Sample Matrix: Soil

Subcontracted Analysis

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Units	Batch
Asbestos	**See Attached** (N/A)								

CERTIFICATE OF ANALYSIS

Client Name: Weston and Sampson Engineers, Inc.
Client Project ID: Claxton Field
Client Sample ID: B-201 - 2-4
Date Sampled: 02/16/23 10:45
Percent Solids: 84

ESS Laboratory Work Order: 23B0634
ESS Laboratory Sample ID: 23B0634-02
Sample Matrix: Soil
Units: mg/kg dry

Extraction Method: 3050B

Total Metals

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Antimony	ND (5.24)		6010C		1	CEV	02/21/23 11:02	2.27	100	DB32002
Arsenic	**8.29** (2.62)		6010C		1	CEV	02/21/23 11:02	2.27	100	DB32002
Barium	**409** (2.62)		6010C		1	CEV	02/21/23 11:02	2.27	100	DB32002
Beryllium	ND (0.12)		6010C		1	CEV	02/21/23 11:02	2.27	100	DB32002
Cadmium	**8.91** (0.52)		6010C		1	CEV	02/21/23 11:02	2.27	100	DB32002
Chromium	**104** (5.24)		6010C		5	CEV	02/22/23 16:19	2.27	100	DB32002
Lead	**399** (26.2)		6010C		5	CEV	02/22/23 16:19	2.27	100	DB32002
Mercury	**0.271** (0.039)		7471B		1	YIV	02/23/23 10:43	0.61	40	DB32003
Nickel	**107** (2.62)		6010C		1	CEV	02/21/23 11:02	2.27	100	DB32002
Selenium	ND (1.05)		6020A		1	BJV	02/23/23 16:50	2.27	100	DB32002
Silver	**EL** ND (2.62)		6010C		5	CEV	02/22/23 16:19	2.27	100	DB32002
Thallium	ND (5.24)		6010C		1	CEV	02/21/23 11:02	2.27	100	DB32002
Vanadium	**39.8** (1.05)		6010C		1	CEV	02/21/23 11:02	2.27	100	DB32002
Zinc	**1630** (26.2)		6010C		10	CEV	02/22/23 16:17	2.27	100	DB32002

CERTIFICATE OF ANALYSIS

Client Name: Weston and Sampson Engineers, Inc.
Client Project ID: Claxton Field
Client Sample ID: B-201 - 2-4
Date Sampled: 02/16/23 10:45
Percent Solids: 84
Initial Volume: 19.7g
Final Volume: 1ml
Extraction Method: 3546

ESS Laboratory Work Order: 23B0634
ESS Laboratory Sample ID: 23B0634-02
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 2/21/23 12:35

8270D Polynuclear Aromatic Hydrocarbons

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
2-Methylnaphthalene	ND (0.302)		8270D		1	02/21/23 21:21	D3B0372	DB32111
Acenaphthene	ND (0.302)		8270D		1	02/21/23 21:21	D3B0372	DB32111
Acenaphthylene	ND (0.302)		8270D		1	02/21/23 21:21	D3B0372	DB32111
Anthracene	ND (0.302)		8270D		1	02/21/23 21:21	D3B0372	DB32111
Benzo(a)anthracene	**0.523** (0.302)		8270D		1	02/21/23 21:21	D3B0372	DB32111
Benzo(a)pyrene	**0.517** (0.302)		8270D		1	02/21/23 21:21	D3B0372	DB32111
Benzo(b)fluoranthene	**0.338** (0.302)		8270D		1	02/21/23 21:21	D3B0372	DB32111
Benzo(g,h,i)perylene	**0.402** (0.302)		8270D		1	02/21/23 21:21	D3B0372	DB32111
Benzo(k)fluoranthene	**0.321** (0.302)		8270D		1	02/21/23 21:21	D3B0372	DB32111
Chrysene	**0.763** (0.302)		8270D		1	02/21/23 21:21	D3B0372	DB32111
Dibenzo(a,h)Anthracene	ND (0.302)		8270D		1	02/21/23 21:21	D3B0372	DB32111
Fluoranthene	**0.729** (0.302)		8270D		1	02/21/23 21:21	D3B0372	DB32111
Fluorene	ND (0.302)		8270D		1	02/21/23 21:21	D3B0372	DB32111
Indeno(1,2,3-cd)Pyrene	**0.319** (0.302)		8270D		1	02/21/23 21:21	D3B0372	DB32111
Naphthalene	ND (0.302)		8270D		1	02/21/23 21:21	D3B0372	DB32111
Phenanthrene	**0.791** (0.302)		8270D		1	02/21/23 21:21	D3B0372	DB32111
Pyrene	**1.10** (0.302)		8270D		1	02/21/23 21:21	D3B0372	DB32111

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichlorobenzene-d4	*67 %*		*30-130*
Surrogate: 2-Fluorobiphenyl	*78 %*		*30-130*
Surrogate: Nitrobenzene-d5	*69 %*		*30-130*
Surrogate: p-Terphenyl-d14	*85 %*		*30-130*

CERTIFICATE OF ANALYSIS

Client Name: Weston and Sampson Engineers, Inc.
Client Project ID: Claxton Field
Client Sample ID: B-201 - 2-4
Date Sampled: 02/16/23 10:45

ESS Laboratory Work Order: 23B0634
ESS Laboratory Sample ID: 23B0634-02
Sample Matrix: Soil

Subcontracted Analysis

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Units	Batch
Asbestos	**See Attached** (N/A)								

CERTIFICATE OF ANALYSIS

Client Name: Weston and Sampson Engineers, Inc.
Client Project ID: Claxton Field
Client Sample ID: B-201 - 4-6
Date Sampled: 02/16/23 10:45
Percent Solids: 79

ESS Laboratory Work Order: 23B0634
ESS Laboratory Sample ID: 23B0634-03
Sample Matrix: Soil
Units: mg/kg dry

Extraction Method: 3050B

Total Metals

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Antimony	ND (5.74)		6010C		1	CEV	02/21/23 11:04	2.2	100	DB32002
Arsenic	**5.45** (2.87)		6010C		1	CEV	02/21/23 11:04	2.2	100	DB32002
Barium	**78.0** (2.87)		6010C		1	CEV	02/21/23 11:04	2.2	100	DB32002
Beryllium	ND (0.13)		6010C		1	CEV	02/21/23 11:04	2.2	100	DB32002
Cadmium	**0.63** (0.57)		6010C		1	CEV	02/21/23 11:04	2.2	100	DB32002
Chromium	**19.5** (5.74)		6010C		5	CEV	02/23/23 10:36	2.2	100	DB32002
Lead	**302** (28.7)		6010C		5	CEV	02/23/23 10:36	2.2	100	DB32002
Mercury	**0.107** (0.036)		7471B		1	YIV	02/23/23 10:45	0.69	40	DB32003
Nickel	**27.8** (2.87)		6010C		1	CEV	02/21/23 11:04	2.2	100	DB32002
Selenium	ND (1.15)		6020A		1	BJV	02/23/23 16:56	2.2	100	DB32002
Silver	ND (2.87)		6010C		5	CEV	02/23/23 10:36	2.2	100	DB32002
Thallium	ND (5.74)		6010C		1	CEV	02/21/23 11:04	2.2	100	DB32002
Vanadium	**13.9** (1.15)		6010C		1	CEV	02/21/23 11:04	2.2	100	DB32002
Zinc	**356** (2.87)		6010C		1	CEV	02/21/23 11:04	2.2	100	DB32002

CERTIFICATE OF ANALYSIS

Client Name: Weston and Sampson Engineers, Inc.
Client Project ID: Claxton Field
Client Sample ID: B-201 - 4-6
Date Sampled: 02/16/23 10:45
Percent Solids: 79
Initial Volume: 19.6g
Final Volume: 1ml
Extraction Method: 3546

ESS Laboratory Work Order: 23B0634
ESS Laboratory Sample ID: 23B0634-03
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 2/21/23 12:35

8270D Polynuclear Aromatic Hydrocarbons

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
2-Methylnaphthalene	ND (0.645)		8270D		2	02/21/23 21:51	D3B0372	DB32111
Acenaphthene	ND (0.645)		8270D		2	02/21/23 21:51	D3B0372	DB32111
Acenaphthylene	ND (0.645)		8270D		2	02/21/23 21:51	D3B0372	DB32111
Anthracene	ND (0.645)		8270D		2	02/21/23 21:51	D3B0372	DB32111
Benzo(a)anthracene	**0.827** (0.645)		8270D		2	02/21/23 21:51	D3B0372	DB32111
Benzo(a)pyrene	**0.790** (0.645)		8270D		2	02/21/23 21:51	D3B0372	DB32111
Benzo(b)fluoranthene	ND (0.645)		8270D		2	02/21/23 21:51	D3B0372	DB32111
Benzo(g,h,i)perylene	ND (0.645)		8270D		2	02/21/23 21:51	D3B0372	DB32111
Benzo(k)fluoranthene	ND (0.645)		8270D		2	02/21/23 21:51	D3B0372	DB32111
Chrysene	**1.16** (0.645)		8270D		2	02/21/23 21:51	D3B0372	DB32111
Dibenzo(a,h)Anthracene	ND (0.645)		8270D		2	02/21/23 21:51	D3B0372	DB32111
Fluoranthene	**0.927** (0.645)		8270D		2	02/21/23 21:51	D3B0372	DB32111
Fluorene	ND (0.645)		8270D		2	02/21/23 21:51	D3B0372	DB32111
Indeno(1,2,3-cd)Pyrene	ND (0.645)		8270D		2	02/21/23 21:51	D3B0372	DB32111
Naphthalene	ND (0.645)		8270D		2	02/21/23 21:51	D3B0372	DB32111
Phenanthrene	**0.663** (0.645)		8270D		2	02/21/23 21:51	D3B0372	DB32111
Pyrene	**1.49** (0.645)		8270D		2	02/21/23 21:51	D3B0372	DB32111

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichlorobenzene-d4	*80 %*		*30-130*
Surrogate: 2-Fluorobiphenyl	*87 %*		*30-130*
Surrogate: Nitrobenzene-d5	*80 %*		*30-130*
Surrogate: p-Terphenyl-d14	*89 %*		*30-130*

CERTIFICATE OF ANALYSIS

Client Name: Weston and Sampson Engineers, Inc.
Client Project ID: Claxton Field
Client Sample ID: B-201 - 4-6
Date Sampled: 02/16/23 10:45

ESS Laboratory Work Order: 23B0634
ESS Laboratory Sample ID: 23B0634-03
Sample Matrix: Soil

Subcontracted Analysis

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Units	Batch
Asbestos	**See Attached** (N/A)								

CERTIFICATE OF ANALYSIS

Client Name: Weston and Sampson Engineers, Inc.
Client Project ID: Claxton Field
Client Sample ID: B-202 - 0-1
Date Sampled: 02/16/23 10:15
Percent Solids: 97

ESS Laboratory Work Order: 23B0634
ESS Laboratory Sample ID: 23B0634-04
Sample Matrix: Soil
Units: mg/kg dry

Extraction Method: 3050B

Total Metals

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Antimony	ND (5.10)		6010C		1	CEV	02/21/23 11:06	2.03	100	DB32002
Arsenic	**3.13** (2.55)		6010C		1	CEV	02/21/23 11:06	2.03	100	DB32002
Barium	**46.3** (2.55)		6010C		1	CEV	02/21/23 11:06	2.03	100	DB32002
Beryllium	**0.34** (0.11)		6010C		1	CEV	02/21/23 11:06	2.03	100	DB32002
Cadmium	ND (0.51)		6010C		1	CEV	02/21/23 11:06	2.03	100	DB32002
Chromium	**11.7** (1.02)		6010C		1	CEV	02/21/23 11:06	2.03	100	DB32002
Lead	**129** (5.10)		6010C		1	CEV	02/21/23 11:06	2.03	100	DB32002
Mercury	**0.085** (0.030)		7471B		1	YIV	02/23/23 10:51	0.69	40	DB32003
Nickel	**8.20** (2.55)		6010C		1	CEV	02/21/23 11:06	2.03	100	DB32002
Selenium	ND (5.10)		6010C		1	CEV	02/21/23 11:06	2.03	100	DB32002
Silver	ND (0.51)		6010C		1	CEV	02/21/23 11:06	2.03	100	DB32002
Thallium	ND (5.10)		6010C		1	CEV	02/21/23 11:06	2.03	100	DB32002
Vanadium	**15.4** (1.02)		6010C		1	CEV	02/21/23 11:06	2.03	100	DB32002
Zinc	**76.8** (2.55)		6010C		1	CEV	02/21/23 11:06	2.03	100	DB32002

CERTIFICATE OF ANALYSIS

Client Name: Weston and Sampson Engineers, Inc.
Client Project ID: Claxton Field
Client Sample ID: B-202 - 0-1
Date Sampled: 02/16/23 10:15
Percent Solids: 97
Initial Volume: 20.8g
Final Volume: 1ml
Extraction Method: 3546

ESS Laboratory Work Order: 23B0634
ESS Laboratory Sample ID: 23B0634-04
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 2/21/23 12:35

8270D Polynuclear Aromatic Hydrocarbons

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
2-Methylnaphthalene	ND (0.498)		8270D		2	02/21/23 22:21	D3B0372	DB32111
Acenaphthene	ND (0.498)		8270D		2	02/21/23 22:21	D3B0372	DB32111
Acenaphthylene	ND (0.498)		8270D		2	02/21/23 22:21	D3B0372	DB32111
Anthracene	ND (0.498)		8270D		2	02/21/23 22:21	D3B0372	DB32111
Benzo(a)anthracene	**0.871** (0.498)		8270D		2	02/21/23 22:21	D3B0372	DB32111
Benzo(a)pyrene	**0.850** (0.498)		8270D		2	02/21/23 22:21	D3B0372	DB32111
Benzo(b)fluoranthene	**0.667** (0.498)		8270D		2	02/21/23 22:21	D3B0372	DB32111
Benzo(g,h,i)perylene	ND (0.498)		8270D		2	02/21/23 22:21	D3B0372	DB32111
Benzo(k)fluoranthene	**0.623** (0.498)		8270D		2	02/21/23 22:21	D3B0372	DB32111
Chrysene	**0.975** (0.498)		8270D		2	02/21/23 22:21	D3B0372	DB32111
Dibenzo(a,h)Anthracene	ND (0.498)		8270D		2	02/21/23 22:21	D3B0372	DB32111
Fluoranthene	**1.82** (0.498)		8270D		2	02/21/23 22:21	D3B0372	DB32111
Fluorene	ND (0.498)		8270D		2	02/21/23 22:21	D3B0372	DB32111
Indeno(1,2,3-cd)Pyrene	ND (0.498)		8270D		2	02/21/23 22:21	D3B0372	DB32111
Naphthalene	ND (0.498)		8270D		2	02/21/23 22:21	D3B0372	DB32111
Phenanthrene	**1.17** (0.498)		8270D		2	02/21/23 22:21	D3B0372	DB32111
Pyrene	**1.60** (0.498)		8270D		2	02/21/23 22:21	D3B0372	DB32111

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichlorobenzene-d4	*77 %*		*30-130*
Surrogate: 2-Fluorobiphenyl	*83 %*		*30-130*
Surrogate: Nitrobenzene-d5	*82 %*		*30-130*
Surrogate: p-Terphenyl-d14	*86 %*		*30-130*

CERTIFICATE OF ANALYSIS

Client Name: Weston and Sampson Engineers, Inc.
Client Project ID: Claxton Field
Client Sample ID: B-202 - 0-1
Date Sampled: 02/16/23 10:15

ESS Laboratory Work Order: 23B0634
ESS Laboratory Sample ID: 23B0634-04
Sample Matrix: Soil

Subcontracted Analysis

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Units	Batch
Asbestos	**See Attached** (N/A)								

CERTIFICATE OF ANALYSIS

Client Name: Weston and Sampson Engineers, Inc.
Client Project ID: Claxton Field
Client Sample ID: B-202 - 2-4
Date Sampled: 02/16/23 10:15
Percent Solids: 79

ESS Laboratory Work Order: 23B0634
ESS Laboratory Sample ID: 23B0634-05
Sample Matrix: Soil
Units: mg/kg dry

Extraction Method: 3050B

Total Metals

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Antimony	ND (5.94)		6010C		1	CEV	02/21/23 11:08	2.14	100	DB32002
Arsenic	**40.6** (2.97)		6010C		1	CEV	02/21/23 11:08	2.14	100	DB32002
Barium	**304** (2.97)		6010C		1	CEV	02/21/23 11:08	2.14	100	DB32002
Beryllium	**0.27** (0.13)		6010C		1	CEV	02/21/23 11:08	2.14	100	DB32002
Cadmium	**3.11** (0.59)		6010C		1	CEV	02/21/23 11:08	2.14	100	DB32002
Chromium	**35.5** (5.94)		6010C		5	CEV	02/23/23 10:38	2.14	100	DB32002
Lead	**1030** (29.7)		6010C		5	CEV	02/23/23 10:38	2.14	100	DB32002
Mercury	**0.647** (0.040)		7471B		1	YIV	02/23/23 10:54	0.63	40	DB32003
Nickel	**32.8** (2.97)		6010C		1	CEV	02/21/23 11:08	2.14	100	DB32002
Selenium	ND (1.19)		6020A		1	BJV	02/23/23 17:01	2.14	100	DB32002
Silver	**EL** ND (2.97)		6010C		5	CEV	02/23/23 10:38	2.14	100	DB32002
Thallium	ND (5.94)		6010C		1	CEV	02/21/23 11:08	2.14	100	DB32002
Vanadium	**25.1** (1.19)		6010C		1	CEV	02/21/23 11:08	2.14	100	DB32002
Zinc	**639** (2.97)		6010C		1	CEV	02/21/23 11:08	2.14	100	DB32002

CERTIFICATE OF ANALYSIS

Client Name: Weston and Sampson Engineers, Inc.
Client Project ID: Claxton Field
Client Sample ID: B-202 - 2-4
Date Sampled: 02/16/23 10:15
Percent Solids: 79
Initial Volume: 20.7g
Final Volume: 1ml
Extraction Method: 3546

ESS Laboratory Work Order: 23B0634
ESS Laboratory Sample ID: 23B0634-05
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 2/21/23 12:35

8270D Polynuclear Aromatic Hydrocarbons

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
2-Methylnaphthalene	ND (0.307)		8270D		1	02/21/23 22:51	D3B0372	DB32111
Acenaphthene	ND (0.307)		8270D		1	02/21/23 22:51	D3B0372	DB32111
Acenaphthylene	ND (0.307)		8270D		1	02/21/23 22:51	D3B0372	DB32111
Anthracene	ND (0.307)		8270D		1	02/21/23 22:51	D3B0372	DB32111
Benzo(a)anthracene	ND (0.307)		8270D		1	02/21/23 22:51	D3B0372	DB32111
Benzo(a)pyrene	ND (0.307)		8270D		1	02/21/23 22:51	D3B0372	DB32111
Benzo(b)fluoranthene	ND (0.307)		8270D		1	02/21/23 22:51	D3B0372	DB32111
Benzo(g,h,i)perylene	ND (0.307)		8270D		1	02/21/23 22:51	D3B0372	DB32111
Benzo(k)fluoranthene	ND (0.307)		8270D		1	02/21/23 22:51	D3B0372	DB32111
Chrysene	ND (0.307)		8270D		1	02/21/23 22:51	D3B0372	DB32111
Dibenzo(a,h)Anthracene	ND (0.307)		8270D		1	02/21/23 22:51	D3B0372	DB32111
Fluoranthene	ND (0.307)		8270D		1	02/21/23 22:51	D3B0372	DB32111
Fluorene	ND (0.307)		8270D		1	02/21/23 22:51	D3B0372	DB32111
Indeno(1,2,3-cd)Pyrene	ND (0.307)		8270D		1	02/21/23 22:51	D3B0372	DB32111
Naphthalene	ND (0.307)		8270D		1	02/21/23 22:51	D3B0372	DB32111
Phenanthrene	ND (0.307)		8270D		1	02/21/23 22:51	D3B0372	DB32111
Pyrene	ND (0.307)		8270D		1	02/21/23 22:51	D3B0372	DB32111

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichlorobenzene-d4	*73 %*		*30-130*
Surrogate: 2-Fluorobiphenyl	*79 %*		*30-130*
Surrogate: Nitrobenzene-d5	*75 %*		*30-130*
Surrogate: p-Terphenyl-d14	*86 %*		*30-130*

CERTIFICATE OF ANALYSIS

Client Name: Weston and Sampson Engineers, Inc.
Client Project ID: Claxton Field
Client Sample ID: B-202 - 2-4
Date Sampled: 02/16/23 10:15

ESS Laboratory Work Order: 23B0634
ESS Laboratory Sample ID: 23B0634-05
Sample Matrix: Soil

Subcontracted Analysis

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Units	Batch
Asbestos	**See Attached** (N/A)								

CERTIFICATE OF ANALYSIS

Client Name: Weston and Sampson Engineers, Inc.
Client Project ID: Claxton Field
Client Sample ID: B-203 - 0-1
Date Sampled: 02/16/23 13:30
Percent Solids: 68

ESS Laboratory Work Order: 23B0634
ESS Laboratory Sample ID: 23B0634-06
Sample Matrix: Soil
Units: mg/kg dry

Extraction Method: 3050B

Total Metals

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Antimony	ND (1.36)		6020A		1	BJV	02/23/23 17:07	2.14	100	DB32002
Arsenic	**8.88** (3.41)		6010C		1	CEV	02/21/23 11:20	2.14	100	DB32002
Barium	**72.5** (3.41)		6010C		1	CEV	02/21/23 11:20	2.14	100	DB32002
Beryllium	**0.65** (0.30)		6010C		2	CEV	02/22/23 16:21	2.14	100	DB32002
Cadmium	ND (0.68)		6010C		1	CEV	02/21/23 11:20	2.14	100	DB32002
Chromium	**27.1** (1.36)		6010C		1	CEV	02/21/23 11:20	2.14	100	DB32002
Lead	**50.2** (6.82)		6010C		1	CEV	02/21/23 11:20	2.14	100	DB32002
Mercury	**0.114** (0.048)		7471B		1	YIV	02/23/23 10:56	0.6	40	DB32003
Nickel	**16.5** (3.41)		6010C		1	CEV	02/21/23 11:20	2.14	100	DB32002
Selenium	ND (6.82)		6010C		1	CEV	02/21/23 11:20	2.14	100	DB32002
Silver	ND (0.68)		6010C		1	CEV	02/21/23 11:20	2.14	100	DB32002
Thallium	ND (0.68)		6020A		1	BJV	02/23/23 17:07	2.14	100	DB32002
Vanadium	**34.7** (1.36)		6010C		1	CEV	02/21/23 11:20	2.14	100	DB32002
Zinc	**75.1** (3.41)		6010C		1	CEV	02/21/23 11:20	2.14	100	DB32002

CERTIFICATE OF ANALYSIS

Client Name: Weston and Sampson Engineers, Inc.
Client Project ID: Claxton Field
Client Sample ID: B-203 - 0-1
Date Sampled: 02/16/23 13:30
Percent Solids: 68
Initial Volume: 19.3g
Final Volume: 1ml
Extraction Method: 3546

ESS Laboratory Work Order: 23B0634
ESS Laboratory Sample ID: 23B0634-06
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 2/21/23 12:35

8270D Polynuclear Aromatic Hydrocarbons

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
2-Methylnaphthalene	ND (0.378)		8270D		1	02/21/23 23:21	D3B0372	DB32111
Acenaphthene	ND (0.378)		8270D		1	02/21/23 23:21	D3B0372	DB32111
Acenaphthylene	ND (0.378)		8270D		1	02/21/23 23:21	D3B0372	DB32111
Anthracene	ND (0.378)		8270D		1	02/21/23 23:21	D3B0372	DB32111
Benzo(a)anthracene	ND (0.378)		8270D		1	02/21/23 23:21	D3B0372	DB32111
Benzo(a)pyrene	ND (0.378)		8270D		1	02/21/23 23:21	D3B0372	DB32111
Benzo(b)fluoranthene	ND (0.378)		8270D		1	02/21/23 23:21	D3B0372	DB32111
Benzo(g,h,i)perylene	ND (0.378)		8270D		1	02/21/23 23:21	D3B0372	DB32111
Benzo(k)fluoranthene	ND (0.378)		8270D		1	02/21/23 23:21	D3B0372	DB32111
Chrysene	ND (0.378)		8270D		1	02/21/23 23:21	D3B0372	DB32111
Dibenzo(a,h)Anthracene	ND (0.378)		8270D		1	02/21/23 23:21	D3B0372	DB32111
Fluoranthene	ND (0.378)		8270D		1	02/21/23 23:21	D3B0372	DB32111
Fluorene	ND (0.378)		8270D		1	02/21/23 23:21	D3B0372	DB32111
Indeno(1,2,3-cd)Pyrene	ND (0.378)		8270D		1	02/21/23 23:21	D3B0372	DB32111
Naphthalene	ND (0.378)		8270D		1	02/21/23 23:21	D3B0372	DB32111
Phenanthrene	ND (0.378)		8270D		1	02/21/23 23:21	D3B0372	DB32111
Pyrene	ND (0.378)		8270D		1	02/21/23 23:21	D3B0372	DB32111

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichlorobenzene-d4	*74 %*		*30-130*
Surrogate: 2-Fluorobiphenyl	*78 %*		*30-130*
Surrogate: Nitrobenzene-d5	*79 %*		*30-130*
Surrogate: p-Terphenyl-d14	*88 %*		*30-130*

CERTIFICATE OF ANALYSIS

Client Name: Weston and Sampson Engineers, Inc.
Client Project ID: Claxton Field
Client Sample ID: B-203 - 0-1
Date Sampled: 02/16/23 13:30

ESS Laboratory Work Order: 23B0634
ESS Laboratory Sample ID: 23B0634-06
Sample Matrix: Soil

Subcontracted Analysis

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Units	Batch
Asbestos	**See Attached** (N/A)								
Dioxin	**See Attached** (N/A)								

CERTIFICATE OF ANALYSIS

Client Name: Weston and Sampson Engineers, Inc.
Client Project ID: Claxton Field
Client Sample ID: B-203 - 2-4
Date Sampled: 02/16/23 13:30
Percent Solids: 79

ESS Laboratory Work Order: 23B0634
ESS Laboratory Sample ID: 23B0634-07
Sample Matrix: Soil
Units: mg/kg dry

Extraction Method: 3050B

Total Metals

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Antimony	ND (6.18)		6010C		1	CEV	02/21/23 11:22	2.05	100	DB32002
Arsenic	**7.17** (3.09)		6010C		1	CEV	02/21/23 11:22	2.05	100	DB32002
Barium	**167** (3.09)		6010C		1	CEV	02/21/23 11:22	2.05	100	DB32002
Beryllium	**0.33** (0.14)		6010C		1	CEV	02/21/23 11:22	2.05	100	DB32002
Cadmium	**1.27** (0.62)		6010C		1	CEV	02/21/23 11:22	2.05	100	DB32002
Chromium	**22.2** (1.24)		6010C		1	CEV	02/21/23 11:22	2.05	100	DB32002
Lead	**319** (6.18)		6010C		1	CEV	02/21/23 11:22	2.05	100	DB32002
Mercury	**0.193** (0.036)		7471B		1	YIV	02/23/23 10:58	0.69	40	DB32003
Nickel	**13.2** (3.09)		6010C		1	CEV	02/21/23 11:22	2.05	100	DB32002
Selenium	ND (6.18)		6010C		1	CEV	02/21/23 11:22	2.05	100	DB32002
Silver	ND (0.62)		6010C		1	CEV	02/21/23 11:22	2.05	100	DB32002
Thallium	ND (6.18)		6010C		1	CEV	02/21/23 11:22	2.05	100	DB32002
Vanadium	**21.9** (1.24)		6010C		1	CEV	02/21/23 11:22	2.05	100	DB32002
Zinc	**443** (3.09)		6010C		1	CEV	02/21/23 11:22	2.05	100	DB32002

CERTIFICATE OF ANALYSIS

Client Name: Weston and Sampson Engineers, Inc.
Client Project ID: Claxton Field
Client Sample ID: B-203 - 2-4
Date Sampled: 02/16/23 13:30
Percent Solids: 79
Initial Volume: 19.1g
Final Volume: 1ml
Extraction Method: 3546

ESS Laboratory Work Order: 23B0634
ESS Laboratory Sample ID: 23B0634-07
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 2/21/23 12:35

8270D Polynuclear Aromatic Hydrocarbons

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
2-Methylnaphthalene	ND (0.332)		8270D		1	02/21/23 23:52	D3B0372	DB32111
Acenaphthene	ND (0.332)		8270D		1	02/21/23 23:52	D3B0372	DB32111
Acenaphthylene	ND (0.332)		8270D		1	02/21/23 23:52	D3B0372	DB32111
Anthracene	ND (0.332)		8270D		1	02/21/23 23:52	D3B0372	DB32111
Benzo(a)anthracene	**0.457** (0.332)		8270D		1	02/21/23 23:52	D3B0372	DB32111
Benzo(a)pyrene	**0.472** (0.332)		8270D		1	02/21/23 23:52	D3B0372	DB32111
Benzo(b)fluoranthene	**0.417** (0.332)		8270D		1	02/21/23 23:52	D3B0372	DB32111
Benzo(g,h,i)perylene	ND (0.332)		8270D		1	02/21/23 23:52	D3B0372	DB32111
Benzo(k)fluoranthene	**0.378** (0.332)		8270D		1	02/21/23 23:52	D3B0372	DB32111
Chrysene	**0.539** (0.332)		8270D		1	02/21/23 23:52	D3B0372	DB32111
Dibenzo(a,h)Anthracene	ND (0.332)		8270D		1	02/21/23 23:52	D3B0372	DB32111
Fluoranthene	**0.900** (0.332)		8270D		1	02/21/23 23:52	D3B0372	DB32111
Fluorene	ND (0.332)		8270D		1	02/21/23 23:52	D3B0372	DB32111
Indeno(1,2,3-cd)Pyrene	ND (0.332)		8270D		1	02/21/23 23:52	D3B0372	DB32111
Naphthalene	ND (0.332)		8270D		1	02/21/23 23:52	D3B0372	DB32111
Phenanthrene	**0.546** (0.332)		8270D		1	02/21/23 23:52	D3B0372	DB32111
Pyrene	**0.752** (0.332)		8270D		1	02/21/23 23:52	D3B0372	DB32111

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichlorobenzene-d4	*78 %*		*30-130*
Surrogate: 2-Fluorobiphenyl	*83 %*		*30-130*
Surrogate: Nitrobenzene-d5	*79 %*		*30-130*
Surrogate: p-Terphenyl-d14	*85 %*		*30-130*

CERTIFICATE OF ANALYSIS

Client Name: Weston and Sampson Engineers, Inc.
Client Project ID: Claxton Field
Client Sample ID: B-203 - 2-4
Date Sampled: 02/16/23 13:30

ESS Laboratory Work Order: 23B0634
ESS Laboratory Sample ID: 23B0634-07
Sample Matrix: Soil

Subcontracted Analysis

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Units	Batch
Asbestos	**See Attached** (N/A)								
Dioxin	**See Attached** (N/A)								

CERTIFICATE OF ANALYSIS

Client Name: Weston and Sampson Engineers, Inc.
Client Project ID: Claxton Field
Client Sample ID: B-203 - 4-6
Date Sampled: 02/16/23 13:30
Percent Solids: 77

ESS Laboratory Work Order: 23B0634
ESS Laboratory Sample ID: 23B0634-08
Sample Matrix: Soil
Units: mg/kg dry

Extraction Method: 3050B

Total Metals

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Antimony	**11.9** (1.26)		6020A		1	BJV	02/23/23 17:13	2.05	100	DB32002
Arsenic	**10.9** (3.16)		6010C		1	CEV	02/21/23 11:24	2.05	100	DB32002
Barium	**155** (3.16)		6010C		1	CEV	02/21/23 11:24	2.05	100	DB32002
Beryllium	**0.63** (0.14)		6010C		1	CEV	02/21/23 11:24	2.05	100	DB32002
Cadmium	ND (0.63)		6010C		1	CEV	02/21/23 11:24	2.05	100	DB32002
Chromium	**8.12** (1.26)		6010C		1	CEV	02/21/23 11:24	2.05	100	DB32002
Lead	**147** (6.31)		6010C		1	CEV	02/21/23 11:24	2.05	100	DB32002
Mercury	**0.370** (0.043)		7471B		1	YIV	02/23/23 11:00	0.6	40	DB32003
Nickel	**18.2** (3.16)		6010C		1	CEV	02/21/23 11:24	2.05	100	DB32002
Selenium	ND (6.31)		6010C		1	CEV	02/21/23 11:24	2.05	100	DB32002
Silver	ND (0.63)		6010C		1	CEV	02/21/23 11:24	2.05	100	DB32002
Thallium	ND (6.31)		6010C		1	CEV	02/21/23 11:24	2.05	100	DB32002
Vanadium	**24.7** (1.26)		6010C		1	CEV	02/21/23 11:24	2.05	100	DB32002
Zinc	**613** (3.16)		6010C		1	CEV	02/21/23 11:24	2.05	100	DB32002

CERTIFICATE OF ANALYSIS

Client Name: Weston and Sampson Engineers, Inc.
Client Project ID: Claxton Field
Client Sample ID: B-203 - 4-6
Date Sampled: 02/16/23 13:30
Percent Solids: 77
Initial Volume: 19.6g
Final Volume: 1ml
Extraction Method: 3546

ESS Laboratory Work Order: 23B0634
ESS Laboratory Sample ID: 23B0634-08
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 2/21/23 12:35

8270D Polynuclear Aromatic Hydrocarbons

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
2-Methylnaphthalene	ND (0.330)		8270D		1	02/22/23 0:22	D3B0372	DB32111
Acenaphthene	ND (0.330)		8270D		1	02/22/23 0:22	D3B0372	DB32111
Acenaphthylene	ND (0.330)		8270D		1	02/22/23 0:22	D3B0372	DB32111
Anthracene	ND (0.330)		8270D		1	02/22/23 0:22	D3B0372	DB32111
Benzo(a)anthracene	**0.856** (0.330)		8270D		1	02/22/23 0:22	D3B0372	DB32111
Benzo(a)pyrene	**0.911** (0.330)		8270D		1	02/22/23 0:22	D3B0372	DB32111
Benzo(b)fluoranthene	**0.788** (0.330)		8270D		1	02/22/23 0:22	D3B0372	DB32111
Benzo(g,h,i)perylene	**0.514** (0.330)		8270D		1	02/22/23 0:22	D3B0372	DB32111
Benzo(k)fluoranthene	**0.729** (0.330)		8270D		1	02/22/23 0:22	D3B0372	DB32111
Chrysene	**0.961** (0.330)		8270D		1	02/22/23 0:22	D3B0372	DB32111
Dibenzo(a,h)Anthracene	ND (0.330)		8270D		1	02/22/23 0:22	D3B0372	DB32111
Fluoranthene	**1.59** (0.330)		8270D		1	02/22/23 0:22	D3B0372	DB32111
Fluorene	ND (0.330)		8270D		1	02/22/23 0:22	D3B0372	DB32111
Indeno(1,2,3-cd)Pyrene	**0.580** (0.330)		8270D		1	02/22/23 0:22	D3B0372	DB32111
Naphthalene	ND (0.330)		8270D		1	02/22/23 0:22	D3B0372	DB32111
Phenanthrene	**0.645** (0.330)		8270D		1	02/22/23 0:22	D3B0372	DB32111
Pyrene	**1.30** (0.330)		8270D		1	02/22/23 0:22	D3B0372	DB32111

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichlorobenzene-d4	*76 %*		*30-130*
Surrogate: 2-Fluorobiphenyl	*81 %*		*30-130*
Surrogate: Nitrobenzene-d5	*78 %*		*30-130*
Surrogate: p-Terphenyl-d14	*83 %*		*30-130*

CERTIFICATE OF ANALYSIS

Client Name: Weston and Sampson Engineers, Inc.
Client Project ID: Claxton Field
Client Sample ID: B-203 - 4-6
Date Sampled: 02/16/23 13:30

ESS Laboratory Work Order: 23B0634
ESS Laboratory Sample ID: 23B0634-08
Sample Matrix: Soil

Subcontracted Analysis

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Units	Batch
Asbestos	**See Attached** (N/A)								
Dioxin	**See Attached** (N/A)								

CERTIFICATE OF ANALYSIS

Client Name: Weston and Sampson Engineers, Inc.
Client Project ID: Claxton Field
Client Sample ID: B-204 - 0-1
Date Sampled: 02/16/23 12:00
Percent Solids: 81

ESS Laboratory Work Order: 23B0634
ESS Laboratory Sample ID: 23B0634-09
Sample Matrix: Soil
Units: mg/kg dry

Extraction Method: 3050B

Total Metals

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Antimony	ND (5.79)		6010C		1	CEV	02/21/23 11:26	2.13	100	DB32002
Arsenic	ND (2.89)		6010C		1	CEV	02/21/23 11:26	2.13	100	DB32002
Barium	**31.8** (2.89)		6010C		1	CEV	02/21/23 11:26	2.13	100	DB32002
Beryllium	**0.32** (0.13)		6010C		1	CEV	02/21/23 11:26	2.13	100	DB32002
Cadmium	ND (0.58)		6010C		1	CEV	02/21/23 11:26	2.13	100	DB32002
Chromium	**14.1** (1.16)		6010C		1	CEV	02/21/23 11:26	2.13	100	DB32002
Lead	**14.6** (5.79)		6010C		1	CEV	02/21/23 11:26	2.13	100	DB32002
Mercury	**0.061** (0.035)		7471B		1	YIV	02/23/23 11:02	0.69	40	DB32003
Nickel	**9.64** (2.89)		6010C		1	CEV	02/21/23 11:26	2.13	100	DB32002
Selenium	ND (5.79)		6010C		1	CEV	02/21/23 11:26	2.13	100	DB32002
Silver	ND (0.58)		6010C		1	CEV	02/21/23 11:26	2.13	100	DB32002
Thallium	ND (5.79)		6010C		1	CEV	02/21/23 11:26	2.13	100	DB32002
Vanadium	**25.3** (1.16)		6010C		1	CEV	02/21/23 11:26	2.13	100	DB32002
Zinc	**32.7** (2.89)		6010C		1	CEV	02/21/23 11:26	2.13	100	DB32002

CERTIFICATE OF ANALYSIS

Client Name: Weston and Sampson Engineers, Inc.
Client Project ID: Claxton Field
Client Sample ID: B-204 - 0-1
Date Sampled: 02/16/23 12:00
Percent Solids: 81
Initial Volume: 20.9g
Final Volume: 1ml
Extraction Method: 3546

ESS Laboratory Work Order: 23B0634
ESS Laboratory Sample ID: 23B0634-09
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 2/21/23 12:35

8270D Polynuclear Aromatic Hydrocarbons

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
2-Methylnaphthalene	ND (0.295)		8270D		1	02/22/23 0:52	D3B0372	DB32111
Acenaphthene	ND (0.295)		8270D		1	02/22/23 0:52	D3B0372	DB32111
Acenaphthylene	ND (0.295)		8270D		1	02/22/23 0:52	D3B0372	DB32111
Anthracene	ND (0.295)		8270D		1	02/22/23 0:52	D3B0372	DB32111
Benzo(a)anthracene	ND (0.295)		8270D		1	02/22/23 0:52	D3B0372	DB32111
Benzo(a)pyrene	ND (0.295)		8270D		1	02/22/23 0:52	D3B0372	DB32111
Benzo(b)fluoranthene	ND (0.295)		8270D		1	02/22/23 0:52	D3B0372	DB32111
Benzo(g,h,i)perylene	ND (0.295)		8270D		1	02/22/23 0:52	D3B0372	DB32111
Benzo(k)fluoranthene	ND (0.295)		8270D		1	02/22/23 0:52	D3B0372	DB32111
Chrysene	ND (0.295)		8270D		1	02/22/23 0:52	D3B0372	DB32111
Dibenzo(a,h)Anthracene	ND (0.295)		8270D		1	02/22/23 0:52	D3B0372	DB32111
Fluoranthene	ND (0.295)		8270D		1	02/22/23 0:52	D3B0372	DB32111
Fluorene	ND (0.295)		8270D		1	02/22/23 0:52	D3B0372	DB32111
Indeno(1,2,3-cd)Pyrene	ND (0.295)		8270D		1	02/22/23 0:52	D3B0372	DB32111
Naphthalene	ND (0.295)		8270D		1	02/22/23 0:52	D3B0372	DB32111
Phenanthrene	ND (0.295)		8270D		1	02/22/23 0:52	D3B0372	DB32111
Pyrene	ND (0.295)		8270D		1	02/22/23 0:52	D3B0372	DB32111

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichlorobenzene-d4	*74 %*		*30-130*
Surrogate: 2-Fluorobiphenyl	*78 %*		*30-130*
Surrogate: Nitrobenzene-d5	*76 %*		*30-130*
Surrogate: p-Terphenyl-d14	*87 %*		*30-130*

CERTIFICATE OF ANALYSIS

Client Name: Weston and Sampson Engineers, Inc.
Client Project ID: Claxton Field
Client Sample ID: B-204 - 0-1
Date Sampled: 02/16/23 12:00

ESS Laboratory Work Order: 23B0634
ESS Laboratory Sample ID: 23B0634-09
Sample Matrix: Soil

Subcontracted Analysis

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Units	Batch
Asbestos	**See Attached** (N/A)								
Dioxin	**See Attached** (N/A)								

CERTIFICATE OF ANALYSIS

Client Name: Weston and Sampson Engineers, Inc.
Client Project ID: Claxton Field
Client Sample ID: B-204 - 2-4
Date Sampled: 02/16/23 12:00
Percent Solids: 96

ESS Laboratory Work Order: 23B0634
ESS Laboratory Sample ID: 23B0634-10
Sample Matrix: Soil
Units: mg/kg dry

Extraction Method: 3050B

Total Metals

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Antimony	ND (4.89)		6010C		1	CEV	02/21/23 11:28	2.14	100	DB32002
Arsenic	ND (2.45)		6010C		1	CEV	02/21/23 11:28	2.14	100	DB32002
Barium	**23.7** (2.45)		6010C		1	CEV	02/21/23 11:28	2.14	100	DB32002
Beryllium	**0.18** (0.11)		6010C		1	CEV	02/21/23 11:28	2.14	100	DB32002
Cadmium	ND (0.49)		6010C		1	CEV	02/21/23 11:28	2.14	100	DB32002
Chromium	**14.0** (0.98)		6010C		1	CEV	02/21/23 11:28	2.14	100	DB32002
Lead	**19.1** (4.89)		6010C		1	CEV	02/21/23 11:28	2.14	100	DB32002
Mercury	**0.091** (0.030)		7471B		1	YIV	02/23/23 11:04	0.69	40	DB32003
Nickel	**7.33** (2.45)		6010C		1	CEV	02/21/23 11:28	2.14	100	DB32002
Selenium	ND (4.89)		6010C		1	CEV	02/21/23 11:28	2.14	100	DB32002
Silver	ND (0.49)		6010C		1	CEV	02/21/23 11:28	2.14	100	DB32002
Thallium	ND (4.89)		6010C		1	CEV	02/21/23 11:28	2.14	100	DB32002
Vanadium	**17.4** (0.98)		6010C		1	CEV	02/21/23 11:28	2.14	100	DB32002
Zinc	**35.5** (2.45)		6010C		1	CEV	02/21/23 11:28	2.14	100	DB32002

CERTIFICATE OF ANALYSIS

Client Name: Weston and Sampson Engineers, Inc.
Client Project ID: Claxton Field
Client Sample ID: B-204 - 2-4
Date Sampled: 02/16/23 12:00
Percent Solids: 96
Initial Volume: 20.5g
Final Volume: 1ml
Extraction Method: 3546

ESS Laboratory Work Order: 23B0634
ESS Laboratory Sample ID: 23B0634-10
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 2/21/23 12:35

8270D Polynuclear Aromatic Hydrocarbons

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
2-Methylnaphthalene	ND (0.255)		8270D		1	02/22/23 1:22	D3B0372	DB32111
Acenaphthene	ND (0.255)		8270D		1	02/22/23 1:22	D3B0372	DB32111
Acenaphthylene	**1.56** (0.255)		8270D		1	02/22/23 1:22	D3B0372	DB32111
Anthracene	**0.601** (0.255)		8270D		1	02/22/23 1:22	D3B0372	DB32111
Benzo(a)anthracene	**2.29** (0.255)		8270D		1	02/22/23 1:22	D3B0372	DB32111
Benzo(a)pyrene	**2.99** (0.255)		8270D		1	02/22/23 1:22	D3B0372	DB32111
Benzo(b)fluoranthene	**1.96** (0.255)		8270D		1	02/22/23 1:22	D3B0372	DB32111
Benzo(g,h,i)perylene	**1.77** (0.255)		8270D		1	02/22/23 1:22	D3B0372	DB32111
Benzo(k)fluoranthene	**1.99** (0.255)		8270D		1	02/22/23 1:22	D3B0372	DB32111
Chrysene	**3.55** (0.255)		8270D		1	02/22/23 1:22	D3B0372	DB32111
Dibenzo(a,h)Anthracene	**0.447** (0.255)		8270D		1	02/22/23 1:22	D3B0372	DB32111
Fluoranthene	**2.89** (0.255)		8270D		1	02/22/23 1:22	D3B0372	DB32111
Fluorene	ND (0.255)		8270D		1	02/22/23 1:22	D3B0372	DB32111
Indeno(1,2,3-cd)Pyrene	**1.70** (0.255)		8270D		1	02/22/23 1:22	D3B0372	DB32111
Naphthalene	ND (0.255)		8270D		1	02/22/23 1:22	D3B0372	DB32111
Phenanthrene	**1.77** (0.255)		8270D		1	02/22/23 1:22	D3B0372	DB32111
Pyrene	**5.05** (0.255)		8270D		1	02/22/23 1:22	D3B0372	DB32111

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichlorobenzene-d4	*75 %*		*30-130*
Surrogate: 2-Fluorobiphenyl	*81 %*		*30-130*
Surrogate: Nitrobenzene-d5	*80 %*		*30-130*
Surrogate: p-Terphenyl-d14	*85 %*		*30-130*

CERTIFICATE OF ANALYSIS

Client Name: Weston and Sampson Engineers, Inc.
Client Project ID: Claxton Field
Client Sample ID: B-204 - 2-4
Date Sampled: 02/16/23 12:00

ESS Laboratory Work Order: 23B0634
ESS Laboratory Sample ID: 23B0634-10
Sample Matrix: Soil

Subcontracted Analysis

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Units	Batch
Asbestos	**See Attached** (N/A)								
Dioxin	**See Attached** (N/A)								

CERTIFICATE OF ANALYSIS

Client Name: Weston and Sampson Engineers, Inc.
Client Project ID: Claxton Field
Client Sample ID: B-204 - 4-6
Date Sampled: 02/16/23 12:00
Percent Solids: 78

ESS Laboratory Work Order: 23B0634
ESS Laboratory Sample ID: 23B0634-11
Sample Matrix: Soil
Units: mg/kg dry

Extraction Method: 3050B

Total Metals

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Antimony	**14.7** (1.15)		6020A		1	BJV	02/23/23 17:18	2.24	100	DB32002
Arsenic	**8.31** (2.88)		6010C		1	CEV	02/21/23 11:38	2.24	100	DB32002
Barium	**336** (2.88)		6010C		1	CEV	02/21/23 11:38	2.24	100	DB32002
Beryllium	ND (0.13)		6010C		1	CEV	02/21/23 11:38	2.24	100	DB32002
Cadmium	**3.05** (0.58)		6010C		1	CEV	02/21/23 11:38	2.24	100	DB32002
Chromium	**88.3** (11.5)		6010C		10	CEV	02/22/23 16:23	2.24	100	DB32002
Lead	**4650** (57.6)		6010C		10	CEV	02/22/23 16:23	2.24	100	DB32002
Mercury	**0.145** (0.039)		7471B		1	YIV	02/23/23 11:18	0.65	40	DB32003
Nickel	**68.7** (2.88)		6010C		1	CEV	02/21/23 11:38	2.24	100	DB32002
Selenium	ND (1.15)		6020A		1	BJV	02/23/23 17:18	2.24	100	DB32002
Silver	**EL** ND (5.76)		6010C		10	CEV	02/22/23 16:23	2.24	100	DB32002
Thallium	ND (5.76)		6010C		1	CEV	02/21/23 11:38	2.24	100	DB32002
Vanadium	**23.8** (1.15)		6010C		1	CEV	02/21/23 11:38	2.24	100	DB32002
Zinc	**1120** (2.88)		6010C		1	CEV	02/21/23 11:38	2.24	100	DB32002

CERTIFICATE OF ANALYSIS

Client Name: Weston and Sampson Engineers, Inc.
Client Project ID: Claxton Field
Client Sample ID: B-204 - 4-6
Date Sampled: 02/16/23 12:00
Percent Solids: 78
Initial Volume: 20.2g
Final Volume: 1ml
Extraction Method: 3546

ESS Laboratory Work Order: 23B0634
ESS Laboratory Sample ID: 23B0634-11
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 2/21/23 12:35

8270D Polynuclear Aromatic Hydrocarbons

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
2-Methylnaphthalene	ND (0.319)		8270D		1	02/22/23 1:52	D3B0372	DB32111
Acenaphthene	ND (0.319)		8270D		1	02/22/23 1:52	D3B0372	DB32111
Acenaphthylene	ND (0.319)		8270D		1	02/22/23 1:52	D3B0372	DB32111
Anthracene	ND (0.319)		8270D		1	02/22/23 1:52	D3B0372	DB32111
Benzo(a)anthracene	ND (0.319)		8270D		1	02/22/23 1:52	D3B0372	DB32111
Benzo(a)pyrene	ND (0.319)		8270D		1	02/22/23 1:52	D3B0372	DB32111
Benzo(b)fluoranthene	ND (0.319)		8270D		1	02/22/23 1:52	D3B0372	DB32111
Benzo(g,h,i)perylene	ND (0.319)		8270D		1	02/22/23 1:52	D3B0372	DB32111
Benzo(k)fluoranthene	ND (0.319)		8270D		1	02/22/23 1:52	D3B0372	DB32111
Chrysene	ND (0.319)		8270D		1	02/22/23 1:52	D3B0372	DB32111
Dibenzo(a,h)Anthracene	ND (0.319)		8270D		1	02/22/23 1:52	D3B0372	DB32111
Fluoranthene	ND (0.319)		8270D		1	02/22/23 1:52	D3B0372	DB32111
Fluorene	ND (0.319)		8270D		1	02/22/23 1:52	D3B0372	DB32111
Indeno(1,2,3-cd)Pyrene	ND (0.319)		8270D		1	02/22/23 1:52	D3B0372	DB32111
Naphthalene	ND (0.319)		8270D		1	02/22/23 1:52	D3B0372	DB32111
Phenanthrene	ND (0.319)		8270D		1	02/22/23 1:52	D3B0372	DB32111
Pyrene	ND (0.319)		8270D		1	02/22/23 1:52	D3B0372	DB32111

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichlorobenzene-d4	*83 %*		*30-130*
Surrogate: 2-Fluorobiphenyl	*86 %*		*30-130*
Surrogate: Nitrobenzene-d5	*84 %*		*30-130*
Surrogate: p-Terphenyl-d14	*85 %*		*30-130*

CERTIFICATE OF ANALYSIS

Client Name: Weston and Sampson Engineers, Inc.
Client Project ID: Claxton Field
Client Sample ID: B-204 - 4-6
Date Sampled: 02/16/23 12:00

ESS Laboratory Work Order: 23B0634
ESS Laboratory Sample ID: 23B0634-11
Sample Matrix: Soil

Subcontracted Analysis

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Units	Batch
Asbestos	**See Attached** (N/A)								
Dioxin	**See Attached** (N/A)								

CERTIFICATE OF ANALYSIS

Client Name: Weston and Sampson Engineers, Inc.
Client Project ID: Claxton Field
Client Sample ID: B-205 - 0-1
Date Sampled: 02/16/23 14:30
Percent Solids: 87

ESS Laboratory Work Order: 23B0634
ESS Laboratory Sample ID: 23B0634-12
Sample Matrix: Soil
Units: mg/kg dry

Extraction Method: 3050B

Total Metals

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Antimony	ND (5.61)		6010C		1	CEV	02/21/23 11:46	2.06	100	DB32002
Arsenic	ND (2.81)		6010C		1	CEV	02/21/23 11:46	2.06	100	DB32002
Barium	**23.7** (2.81)		6010C		1	CEV	02/21/23 11:46	2.06	100	DB32002
Beryllium	**0.25** (0.12)		6010C		1	CEV	02/21/23 11:46	2.06	100	DB32002
Cadmium	ND (0.56)		6010C		1	CEV	02/21/23 11:46	2.06	100	DB32002
Chromium	**14.5** (1.12)		6010C		1	CEV	02/21/23 11:46	2.06	100	DB32002
Lead	**22.1** (5.61)		6010C		1	CEV	02/21/23 11:46	2.06	100	DB32002
Mercury	**0.065** (0.035)		7471B		1	YIV	02/23/23 11:20	0.66	40	DB32003
Nickel	**8.15** (2.81)		6010C		1	CEV	02/21/23 11:46	2.06	100	DB32002
Selenium	ND (5.61)		6010C		1	CEV	02/21/23 11:46	2.06	100	DB32002
Silver	ND (0.56)		6010C		1	CEV	02/21/23 11:46	2.06	100	DB32002
Thallium	ND (5.61)		6010C		1	CEV	02/21/23 11:46	2.06	100	DB32002
Vanadium	**18.7** (1.12)		6010C		1	CEV	02/21/23 11:46	2.06	100	DB32002
Zinc	**29.2** (2.81)		6010C		1	CEV	02/21/23 11:46	2.06	100	DB32002

CERTIFICATE OF ANALYSIS

Client Name: Weston and Sampson Engineers, Inc.
Client Project ID: Claxton Field
Client Sample ID: B-205 - 0-1
Date Sampled: 02/16/23 14:30
Percent Solids: 87
Initial Volume: 19.6g
Final Volume: 1ml
Extraction Method: 3546

ESS Laboratory Work Order: 23B0634
ESS Laboratory Sample ID: 23B0634-12
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 2/21/23 12:35

8270D Polynuclear Aromatic Hydrocarbons

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
2-Methylnaphthalene	ND (0.295)		8270D		1	02/22/23 2:22	D3B0372	DB32111
Acenaphthene	ND (0.295)		8270D		1	02/22/23 2:22	D3B0372	DB32111
Acenaphthylene	ND (0.295)		8270D		1	02/22/23 2:22	D3B0372	DB32111
Anthracene	ND (0.295)		8270D		1	02/22/23 2:22	D3B0372	DB32111
Benzo(a)anthracene	ND (0.295)		8270D		1	02/22/23 2:22	D3B0372	DB32111
Benzo(a)pyrene	ND (0.295)		8270D		1	02/22/23 2:22	D3B0372	DB32111
Benzo(b)fluoranthene	ND (0.295)		8270D		1	02/22/23 2:22	D3B0372	DB32111
Benzo(g,h,i)perylene	ND (0.295)		8270D		1	02/22/23 2:22	D3B0372	DB32111
Benzo(k)fluoranthene	ND (0.295)		8270D		1	02/22/23 2:22	D3B0372	DB32111
Chrysene	ND (0.295)		8270D		1	02/22/23 2:22	D3B0372	DB32111
Dibenzo(a,h)Anthracene	ND (0.295)		8270D		1	02/22/23 2:22	D3B0372	DB32111
Fluoranthene	ND (0.295)		8270D		1	02/22/23 2:22	D3B0372	DB32111
Fluorene	ND (0.295)		8270D		1	02/22/23 2:22	D3B0372	DB32111
Indeno(1,2,3-cd)Pyrene	ND (0.295)		8270D		1	02/22/23 2:22	D3B0372	DB32111
Naphthalene	ND (0.295)		8270D		1	02/22/23 2:22	D3B0372	DB32111
Phenanthrene	ND (0.295)		8270D		1	02/22/23 2:22	D3B0372	DB32111
Pyrene	ND (0.295)		8270D		1	02/22/23 2:22	D3B0372	DB32111

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichlorobenzene-d4	*74 %*		*30-130*
Surrogate: 2-Fluorobiphenyl	*79 %*		*30-130*
Surrogate: Nitrobenzene-d5	*75 %*		*30-130*
Surrogate: p-Terphenyl-d14	*87 %*		*30-130*

CERTIFICATE OF ANALYSIS

Client Name: Weston and Sampson Engineers, Inc.
Client Project ID: Claxton Field
Client Sample ID: B-205 - 0-1
Date Sampled: 02/16/23 14:30

ESS Laboratory Work Order: 23B0634
ESS Laboratory Sample ID: 23B0634-12
Sample Matrix: Soil

Subcontracted Analysis

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Units	Batch
Asbestos	**See Attached** (N/A)								
Dioxin	**See Attached** (N/A)								

CERTIFICATE OF ANALYSIS

Client Name: Weston and Sampson Engineers, Inc.
Client Project ID: Claxton Field
Client Sample ID: B-205 - 2-4
Date Sampled: 02/16/23 14:30
Percent Solids: 91

ESS Laboratory Work Order: 23B0634
ESS Laboratory Sample ID: 23B0634-13
Sample Matrix: Soil
Units: mg/kg dry

Extraction Method: 3050B

Total Metals

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Antimony	ND (5.45)		6010C		1	CEV	02/21/23 11:48	2.01	100	DB32002
Arsenic	**3.15** (2.73)		6010C		1	CEV	02/21/23 11:48	2.01	100	DB32002
Barium	**47.9** (2.73)		6010C		1	CEV	02/21/23 11:48	2.01	100	DB32002
Beryllium	**0.25** (0.12)		6010C		1	CEV	02/21/23 11:48	2.01	100	DB32002
Cadmium	ND (0.55)		6010C		1	CEV	02/21/23 11:48	2.01	100	DB32002
Chromium	**14.9** (1.09)		6010C		1	CEV	02/21/23 11:48	2.01	100	DB32002
Lead	**50.6** (5.45)		6010C		1	CEV	02/21/23 11:48	2.01	100	DB32002
Mercury	**0.409** (0.034)		7471B		1	YIV	02/23/23 11:22	0.64	40	DB32003
Nickel	**12.0** (2.73)		6010C		1	CEV	02/21/23 11:48	2.01	100	DB32002
Selenium	ND (5.45)		6010C		1	CEV	02/21/23 11:48	2.01	100	DB32002
Silver	ND (0.55)		6010C		1	CEV	02/21/23 11:48	2.01	100	DB32002
Thallium	ND (5.45)		6010C		1	CEV	02/21/23 11:48	2.01	100	DB32002
Vanadium	**35.1** (1.09)		6010C		1	CEV	02/21/23 11:48	2.01	100	DB32002
Zinc	**69.0** (2.73)		6010C		1	CEV	02/21/23 11:48	2.01	100	DB32002

CERTIFICATE OF ANALYSIS

Client Name: Weston and Sampson Engineers, Inc.
Client Project ID: Claxton Field
Client Sample ID: B-205 - 2-4
Date Sampled: 02/16/23 14:30
Percent Solids: 91
Initial Volume: 19.5g
Final Volume: 1ml
Extraction Method: 3546

ESS Laboratory Work Order: 23B0634
ESS Laboratory Sample ID: 23B0634-13
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 2/21/23 12:35

8270D Polynuclear Aromatic Hydrocarbons

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
2-Methylnaphthalene	ND (0.281)		8270D		1	02/22/23 2:52	D3B0372	DB32111
Acenaphthene	ND (0.281)		8270D		1	02/22/23 2:52	D3B0372	DB32111
Acenaphthylene	ND (0.281)		8270D		1	02/22/23 2:52	D3B0372	DB32111
Anthracene	ND (0.281)		8270D		1	02/22/23 2:52	D3B0372	DB32111
Benzo(a)anthracene	ND (0.281)		8270D		1	02/22/23 2:52	D3B0372	DB32111
Benzo(a)pyrene	ND (0.281)		8270D		1	02/22/23 2:52	D3B0372	DB32111
Benzo(b)fluoranthene	ND (0.281)		8270D		1	02/22/23 2:52	D3B0372	DB32111
Benzo(g,h,i)perylene	ND (0.281)		8270D		1	02/22/23 2:52	D3B0372	DB32111
Benzo(k)fluoranthene	ND (0.281)		8270D		1	02/22/23 2:52	D3B0372	DB32111
Chrysene	**0.318** (0.281)		8270D		1	02/22/23 2:52	D3B0372	DB32111
Dibenzo(a,h)Anthracene	ND (0.281)		8270D		1	02/22/23 2:52	D3B0372	DB32111
Fluoranthene	ND (0.281)		8270D		1	02/22/23 2:52	D3B0372	DB32111
Fluorene	ND (0.281)		8270D		1	02/22/23 2:52	D3B0372	DB32111
Indeno(1,2,3-cd)Pyrene	ND (0.281)		8270D		1	02/22/23 2:52	D3B0372	DB32111
Naphthalene	ND (0.281)		8270D		1	02/22/23 2:52	D3B0372	DB32111
Phenanthrene	ND (0.281)		8270D		1	02/22/23 2:52	D3B0372	DB32111
Pyrene	**0.360** (0.281)		8270D		1	02/22/23 2:52	D3B0372	DB32111

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichlorobenzene-d4	*78 %*		*30-130*
Surrogate: 2-Fluorobiphenyl	*85 %*		*30-130*
Surrogate: Nitrobenzene-d5	*83 %*		*30-130*
Surrogate: p-Terphenyl-d14	*91 %*		*30-130*

CERTIFICATE OF ANALYSIS

Client Name: Weston and Sampson Engineers, Inc.
Client Project ID: Claxton Field
Client Sample ID: B-205 - 2-4
Date Sampled: 02/16/23 14:30

ESS Laboratory Work Order: 23B0634
ESS Laboratory Sample ID: 23B0634-13
Sample Matrix: Soil

Subcontracted Analysis

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Units	Batch
Asbestos	**See Attached** (N/A)								
Dioxin	**See Attached** (N/A)								

CERTIFICATE OF ANALYSIS

Client Name: Weston and Sampson Engineers, Inc.
Client Project ID: Claxton Field
Client Sample ID: B-205 - 4-6
Date Sampled: 02/16/23 14:30
Percent Solids: 76

ESS Laboratory Work Order: 23B0634
ESS Laboratory Sample ID: 23B0634-14
Sample Matrix: Soil
Units: mg/kg dry

Extraction Method: 3050B

Total Metals

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Antimony	ND (5.83)		6010C		1	CEV	02/21/23 11:50	2.27	100	DB32002
Arsenic	**10.6** (2.92)		6010C		1	CEV	02/21/23 11:50	2.27	100	DB32002
Barium	**155** (2.92)		6010C		1	CEV	02/21/23 11:50	2.27	100	DB32002
Beryllium	**0.67** (0.13)		6010C		1	CEV	02/21/23 11:50	2.27	100	DB32002
Cadmium	ND (0.58)		6010C		1	CEV	02/21/23 11:50	2.27	100	DB32002
Chromium	**10.4** (1.17)		6010C		1	CEV	02/21/23 11:50	2.27	100	DB32002
Lead	**1650** (5.83)		6010C		1	CEV	02/21/23 11:50	2.27	100	DB32002
Mercury	**0.654** (0.040)		7471B		1	YIV	02/23/23 11:25	0.66	40	DB32003
Nickel	**16.8** (2.92)		6010C		1	CEV	02/21/23 11:50	2.27	100	DB32002
Selenium	ND (5.83)		6010C		1	CEV	02/21/23 11:50	2.27	100	DB32002
Silver	ND (0.58)		6010C		1	CEV	02/21/23 11:50	2.27	100	DB32002
Thallium	ND (5.83)		6010C		1	CEV	02/21/23 11:50	2.27	100	DB32002
Vanadium	**38.2** (1.17)		6010C		1	CEV	02/21/23 11:50	2.27	100	DB32002
Zinc	**329** (2.92)		6010C		1	CEV	02/21/23 11:50	2.27	100	DB32002

CERTIFICATE OF ANALYSIS

Client Name: Weston and Sampson Engineers, Inc.
Client Project ID: Claxton Field
Client Sample ID: B-205 - 4-6
Date Sampled: 02/16/23 14:30
Percent Solids: 76
Initial Volume: 19.1g
Final Volume: 1ml
Extraction Method: 3546

ESS Laboratory Work Order: 23B0634
ESS Laboratory Sample ID: 23B0634-14
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 2/21/23 12:35

8270D Polynuclear Aromatic Hydrocarbons

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
2-Methylnaphthalene	ND (0.346)		8270D		1	02/22/23 3:22	D3B0372	DB32111
Acenaphthene	ND (0.346)		8270D		1	02/22/23 3:22	D3B0372	DB32111
Acenaphthylene	ND (0.346)		8270D		1	02/22/23 3:22	D3B0372	DB32111
Anthracene	ND (0.346)		8270D		1	02/22/23 3:22	D3B0372	DB32111
Benzo(a)anthracene	ND (0.346)		8270D		1	02/22/23 3:22	D3B0372	DB32111
Benzo(a)pyrene	ND (0.346)		8270D		1	02/22/23 3:22	D3B0372	DB32111
Benzo(b)fluoranthene	ND (0.346)		8270D		1	02/22/23 3:22	D3B0372	DB32111
Benzo(g,h,i)perylene	ND (0.346)		8270D		1	02/22/23 3:22	D3B0372	DB32111
Benzo(k)fluoranthene	ND (0.346)		8270D		1	02/22/23 3:22	D3B0372	DB32111
Chrysene	ND (0.346)		8270D		1	02/22/23 3:22	D3B0372	DB32111
Dibenzo(a,h)Anthracene	ND (0.346)		8270D		1	02/22/23 3:22	D3B0372	DB32111
Fluoranthene	ND (0.346)		8270D		1	02/22/23 3:22	D3B0372	DB32111
Fluorene	ND (0.346)		8270D		1	02/22/23 3:22	D3B0372	DB32111
Indeno(1,2,3-cd)Pyrene	ND (0.346)		8270D		1	02/22/23 3:22	D3B0372	DB32111
Naphthalene	ND (0.346)		8270D		1	02/22/23 3:22	D3B0372	DB32111
Phenanthrene	ND (0.346)		8270D		1	02/22/23 3:22	D3B0372	DB32111
Pyrene	ND (0.346)		8270D		1	02/22/23 3:22	D3B0372	DB32111

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichlorobenzene-d4	*78 %*		*30-130*
Surrogate: 2-Fluorobiphenyl	*84 %*		*30-130*
Surrogate: Nitrobenzene-d5	*82 %*		*30-130*
Surrogate: p-Terphenyl-d14	*92 %*		*30-130*

CERTIFICATE OF ANALYSIS

Client Name: Weston and Sampson Engineers, Inc.
Client Project ID: Claxton Field
Client Sample ID: B-205 - 4-6
Date Sampled: 02/16/23 14:30

ESS Laboratory Work Order: 23B0634
ESS Laboratory Sample ID: 23B0634-14
Sample Matrix: Soil

Subcontracted Analysis

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Units	Batch
Asbestos	**See Attached** (N/A)								
Dioxin	**See Attached** (N/A)								

CERTIFICATE OF ANALYSIS

Client Name: Weston and Sampson Engineers, Inc.
Client Project ID: Claxton Field
Client Sample ID: B-206 - 0-1
Date Sampled: 02/16/23 15:15
Percent Solids: 80

ESS Laboratory Work Order: 23B0634
ESS Laboratory Sample ID: 23B0634-15
Sample Matrix: Soil
Units: mg/kg dry

Extraction Method: 3050B

Total Metals

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Antimony	ND (5.86)		6010C		1	CEV	02/21/23 11:52	2.14	100	DB32002
Arsenic	**5.03** (2.93)		6010C		1	CEV	02/21/23 11:52	2.14	100	DB32002
Barium	**104** (2.93)		6010C		1	CEV	02/21/23 11:52	2.14	100	DB32002
Beryllium	**0.39** (0.13)		6010C		1	CEV	02/21/23 11:52	2.14	100	DB32002
Cadmium	ND (0.59)		6010C		1	CEV	02/21/23 11:52	2.14	100	DB32002
Chromium	**17.4** (1.17)		6010C		1	CEV	02/21/23 11:52	2.14	100	DB32002
Lead	**330** (5.86)		6010C		1	CEV	02/21/23 11:52	2.14	100	DB32002
Mercury	**0.088** (0.036)		7471B		1	YIV	02/23/23 11:27	0.69	40	DB32003
Nickel	**16.4** (2.93)		6010C		1	CEV	02/21/23 11:52	2.14	100	DB32002
Selenium	ND (5.86)		6010C		1	CEV	02/21/23 11:52	2.14	100	DB32002
Silver	ND (0.59)		6010C		1	CEV	02/21/23 11:52	2.14	100	DB32002
Thallium	ND (5.86)		6010C		1	CEV	02/21/23 11:52	2.14	100	DB32002
Vanadium	**24.3** (1.17)		6010C		1	CEV	02/21/23 11:52	2.14	100	DB32002
Zinc	**199** (2.93)		6010C		1	CEV	02/21/23 11:52	2.14	100	DB32002

CERTIFICATE OF ANALYSIS

Client Name: Weston and Sampson Engineers, Inc.
Client Project ID: Claxton Field
Client Sample ID: B-206 - 0-1
Date Sampled: 02/16/23 15:15
Percent Solids: 80
Initial Volume: 19.9g
Final Volume: 1ml
Extraction Method: 3546

ESS Laboratory Work Order: 23B0634
ESS Laboratory Sample ID: 23B0634-15
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 2/21/23 12:35

8270D Polynuclear Aromatic Hydrocarbons

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
2-Methylnaphthalene	ND (0.315)		8270D		1	02/22/23 3:52	D3B0372	DB32111
Acenaphthene	ND (0.315)		8270D		1	02/22/23 3:52	D3B0372	DB32111
Acenaphthylene	ND (0.315)		8270D		1	02/22/23 3:52	D3B0372	DB32111
Anthracene	ND (0.315)		8270D		1	02/22/23 3:52	D3B0372	DB32111
Benzo(a)anthracene	ND (0.315)		8270D		1	02/22/23 3:52	D3B0372	DB32111
Benzo(a)pyrene	ND (0.315)		8270D		1	02/22/23 3:52	D3B0372	DB32111
Benzo(b)fluoranthene	ND (0.315)		8270D		1	02/22/23 3:52	D3B0372	DB32111
Benzo(g,h,i)perylene	ND (0.315)		8270D		1	02/22/23 3:52	D3B0372	DB32111
Benzo(k)fluoranthene	ND (0.315)		8270D		1	02/22/23 3:52	D3B0372	DB32111
Chrysene	ND (0.315)		8270D		1	02/22/23 3:52	D3B0372	DB32111
Dibenzo(a,h)Anthracene	ND (0.315)		8270D		1	02/22/23 3:52	D3B0372	DB32111
Fluoranthene	ND (0.315)		8270D		1	02/22/23 3:52	D3B0372	DB32111
Fluorene	ND (0.315)		8270D		1	02/22/23 3:52	D3B0372	DB32111
Indeno(1,2,3-cd)Pyrene	ND (0.315)		8270D		1	02/22/23 3:52	D3B0372	DB32111
Naphthalene	ND (0.315)		8270D		1	02/22/23 3:52	D3B0372	DB32111
Phenanthrene	ND (0.315)		8270D		1	02/22/23 3:52	D3B0372	DB32111
Pyrene	ND (0.315)		8270D		1	02/22/23 3:52	D3B0372	DB32111

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichlorobenzene-d4	*83 %*		*30-130*
Surrogate: 2-Fluorobiphenyl	*88 %*		*30-130*
Surrogate: Nitrobenzene-d5	*86 %*		*30-130*
Surrogate: p-Terphenyl-d14	*92 %*		*30-130*

CERTIFICATE OF ANALYSIS

Client Name: Weston and Sampson Engineers, Inc.
Client Project ID: Claxton Field
Client Sample ID: B-206 - 0-1
Date Sampled: 02/16/23 15:15

ESS Laboratory Work Order: 23B0634
ESS Laboratory Sample ID: 23B0634-15
Sample Matrix: Soil

Subcontracted Analysis

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Units	Batch
Asbestos	**See Attached** (N/A)								

CERTIFICATE OF ANALYSIS

Client Name: Weston and Sampson Engineers, Inc.
Client Project ID: Claxton Field
Client Sample ID: B-206 - 2-4
Date Sampled: 02/16/23 15:15
Percent Solids: 84

ESS Laboratory Work Order: 23B0634
ESS Laboratory Sample ID: 23B0634-16
Sample Matrix: Soil
Units: mg/kg dry

Extraction Method: 3050B

Total Metals

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Antimony	**6.85** (1.06)		6020A		1	BJV	02/23/23 17:24	2.24	100	DB32002
Arsenic	**13.9** (2.65)		6010C		1	CEV	02/21/23 11:54	2.24	100	DB32002
Barium	**85.9** (2.65)		6010C		1	CEV	02/21/23 11:54	2.24	100	DB32002
Beryllium	**0.33** (0.12)		6010C		1	CEV	02/21/23 11:54	2.24	100	DB32002
Cadmium	ND (0.53)		6010C		1	CEV	02/21/23 11:54	2.24	100	DB32002
Chromium	**16.0** (2.12)		6010C		2	CEV	02/22/23 16:31	2.24	100	DB32002
Lead	**319** (10.6)		6010C		2	CEV	02/22/23 16:31	2.24	100	DB32002
Mercury	**0.223** (0.039)		7471B		1	YIV	02/23/23 11:29	0.6	40	DB32003
Nickel	**37.4** (2.65)		6010C		1	CEV	02/21/23 11:54	2.24	100	DB32002
Selenium	ND (1.06)		6020A		1	BJV	02/23/23 17:24	2.24	100	DB32002
Silver	**EL** ND (1.06)		6010C		2	CEV	02/22/23 16:31	2.24	100	DB32002
Thallium	ND (5.30)		6010C		1	CEV	02/21/23 11:54	2.24	100	DB32002
Vanadium	**21.5** (1.06)		6010C		1	CEV	02/21/23 11:54	2.24	100	DB32002
Zinc	**341** (2.65)		6010C		1	CEV	02/21/23 11:54	2.24	100	DB32002

CERTIFICATE OF ANALYSIS

Client Name: Weston and Sampson Engineers, Inc.
Client Project ID: Claxton Field
Client Sample ID: B-206 - 2-4
Date Sampled: 02/16/23 15:15
Percent Solids: 84
Initial Volume: 20.9g
Final Volume: 1ml
Extraction Method: 3546

ESS Laboratory Work Order: 23B0634
ESS Laboratory Sample ID: 23B0634-16
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 2/21/23 12:35

8270D Polynuclear Aromatic Hydrocarbons

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
2-Methylnaphthalene	ND (0.284)		8270D		1	02/21/23 23:09	D3B0383	DB32111
Acenaphthene	ND (0.284)		8270D		1	02/21/23 23:09	D3B0383	DB32111
Acenaphthylene	ND (0.284)		8270D		1	02/21/23 23:09	D3B0383	DB32111
Anthracene	ND (0.284)		8270D		1	02/21/23 23:09	D3B0383	DB32111
Benzo(a)anthracene	ND (0.284)		8270D		1	02/21/23 23:09	D3B0383	DB32111
Benzo(a)pyrene	ND (0.284)		8270D		1	02/21/23 23:09	D3B0383	DB32111
Benzo(b)fluoranthene	ND (0.284)		8270D		1	02/21/23 23:09	D3B0383	DB32111
Benzo(g,h,i)perylene	ND (0.284)		8270D		1	02/21/23 23:09	D3B0383	DB32111
Benzo(k)fluoranthene	ND (0.284)		8270D		1	02/21/23 23:09	D3B0383	DB32111
Chrysene	ND (0.284)		8270D		1	02/21/23 23:09	D3B0383	DB32111
Dibenzo(a,h)Anthracene	ND (0.284)		8270D		1	02/21/23 23:09	D3B0383	DB32111
Fluoranthene	ND (0.284)		8270D		1	02/21/23 23:09	D3B0383	DB32111
Fluorene	ND (0.284)		8270D		1	02/21/23 23:09	D3B0383	DB32111
Indeno(1,2,3-cd)Pyrene	ND (0.284)		8270D		1	02/21/23 23:09	D3B0383	DB32111
Naphthalene	ND (0.284)		8270D		1	02/21/23 23:09	D3B0383	DB32111
Phenanthrene	ND (0.284)		8270D		1	02/21/23 23:09	D3B0383	DB32111
Pyrene	ND (0.284)		8270D		1	02/21/23 23:09	D3B0383	DB32111

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichlorobenzene-d4	*83 %*		*30-130*
Surrogate: 2-Fluorobiphenyl	*84 %*		*30-130*
Surrogate: Nitrobenzene-d5	*79 %*		*30-130*
Surrogate: p-Terphenyl-d14	*97 %*		*30-130*

CERTIFICATE OF ANALYSIS

Client Name: Weston and Sampson Engineers, Inc.
Client Project ID: Claxton Field
Client Sample ID: B-206 - 2-4
Date Sampled: 02/16/23 15:15

ESS Laboratory Work Order: 23B0634
ESS Laboratory Sample ID: 23B0634-16
Sample Matrix: Soil

Subcontracted Analysis

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Units	Batch
Asbestos	**See Attached** (N/A)								

CERTIFICATE OF ANALYSIS

Client Name: Weston and Sampson Engineers, Inc.
Client Project ID: Claxton Field
Client Sample ID: B-206 - 4-5
Date Sampled: 02/16/23 15:15
Percent Solids: 91

ESS Laboratory Work Order: 23B0634
ESS Laboratory Sample ID: 23B0634-17
Sample Matrix: Soil
Units: mg/kg dry

Extraction Method: 3050B

Total Metals

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Antimony	ND (4.98)		6010C		1	CEV	02/21/23 11:57	2.21	100	DB32002
Arsenic	ND (2.49)		6010C		1	CEV	02/21/23 11:57	2.21	100	DB32002
Barium	**57.2** (2.49)		6010C		1	CEV	02/21/23 11:57	2.21	100	DB32002
Beryllium	**0.34** (0.11)		6010C		1	CEV	02/21/23 11:57	2.21	100	DB32002
Cadmium	ND (0.50)		6010C		1	CEV	02/21/23 11:57	2.21	100	DB32002
Chromium	**12.0** (1.00)		6010C		1	CEV	02/21/23 11:57	2.21	100	DB32002
Lead	**EL** ND (9.97)		6010C		2	CEV	02/22/23 16:33	2.21	100	DB32002
Mercury	**0.034** (0.034)		7471B		1	YIV	02/23/23 11:31	0.64	40	DB32003
Nickel	**8.75** (2.49)		6010C		1	CEV	02/21/23 11:57	2.21	100	DB32002
Selenium	ND (4.98)		6010C		1	CEV	02/21/23 11:57	2.21	100	DB32002
Silver	ND (0.50)		6010C		1	CEV	02/21/23 11:57	2.21	100	DB32002
Thallium	ND (4.98)		6010C		1	CEV	02/21/23 11:57	2.21	100	DB32002
Vanadium	**21.7** (1.00)		6010C		1	CEV	02/21/23 11:57	2.21	100	DB32002
Zinc	**24.9** (2.49)		6010C		1	CEV	02/21/23 11:57	2.21	100	DB32002

CERTIFICATE OF ANALYSIS

Client Name: Weston and Sampson Engineers, Inc.
Client Project ID: Claxton Field
Client Sample ID: B-206 - 4-5
Date Sampled: 02/16/23 15:15
Percent Solids: 91
Initial Volume: 20.9g
Final Volume: 1ml
Extraction Method: 3546

ESS Laboratory Work Order: 23B0634
ESS Laboratory Sample ID: 23B0634-17
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 2/21/23 12:35

8270D Polynuclear Aromatic Hydrocarbons

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
2-Methylnaphthalene	ND (0.263)		8270D		1	02/21/23 23:40	D3B0383	DB32111
Acenaphthene	ND (0.263)		8270D		1	02/21/23 23:40	D3B0383	DB32111
Acenaphthylene	ND (0.263)		8270D		1	02/21/23 23:40	D3B0383	DB32111
Anthracene	ND (0.263)		8270D		1	02/21/23 23:40	D3B0383	DB32111
Benzo(a)anthracene	ND (0.263)		8270D		1	02/21/23 23:40	D3B0383	DB32111
Benzo(a)pyrene	ND (0.263)		8270D		1	02/21/23 23:40	D3B0383	DB32111
Benzo(b)fluoranthene	ND (0.263)		8270D		1	02/21/23 23:40	D3B0383	DB32111
Benzo(g,h,i)perylene	ND (0.263)		8270D		1	02/21/23 23:40	D3B0383	DB32111
Benzo(k)fluoranthene	ND (0.263)		8270D		1	02/21/23 23:40	D3B0383	DB32111
Chrysene	ND (0.263)		8270D		1	02/21/23 23:40	D3B0383	DB32111
Dibenzo(a,h)Anthracene	ND (0.263)		8270D		1	02/21/23 23:40	D3B0383	DB32111
Fluoranthene	ND (0.263)		8270D		1	02/21/23 23:40	D3B0383	DB32111
Fluorene	ND (0.263)		8270D		1	02/21/23 23:40	D3B0383	DB32111
Indeno(1,2,3-cd)Pyrene	ND (0.263)		8270D		1	02/21/23 23:40	D3B0383	DB32111
Naphthalene	ND (0.263)		8270D		1	02/21/23 23:40	D3B0383	DB32111
Phenanthrene	ND (0.263)		8270D		1	02/21/23 23:40	D3B0383	DB32111
Pyrene	ND (0.263)		8270D		1	02/21/23 23:40	D3B0383	DB32111

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichlorobenzene-d4	*85 %*		*30-130*
Surrogate: 2-Fluorobiphenyl	*85 %*		*30-130*
Surrogate: Nitrobenzene-d5	*83 %*		*30-130*
Surrogate: p-Terphenyl-d14	*98 %*		*30-130*

CERTIFICATE OF ANALYSIS

Client Name: Weston and Sampson Engineers, Inc.
Client Project ID: Claxton Field
Client Sample ID: B-206 - 4-5
Date Sampled: 02/16/23 15:15

ESS Laboratory Work Order: 23B0634
ESS Laboratory Sample ID: 23B0634-17
Sample Matrix: Soil

Subcontracted Analysis

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Units	Batch
Asbestos	**See Attached** (N/A)								

CERTIFICATE OF ANALYSIS

Client Name: Weston and Sampson Engineers, Inc.
Client Project ID: Claxton Field
Client Sample ID: B-207F - 4-6
Date Sampled: 02/16/23 15:30
Percent Solids: 86

ESS Laboratory Work Order: 23B0634
ESS Laboratory Sample ID: 23B0634-18
Sample Matrix: Soil
Units: mg/kg dry

Extraction Method: 3050B

Total Metals

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Antimony	ND (5.62)		6010C		1	CEV	02/21/23 11:59	2.06	100	DB32002
Arsenic	**8.13** (2.81)		6010C		1	CEV	02/21/23 11:59	2.06	100	DB32002
Barium	**287** (2.81)		6010C		1	CEV	02/21/23 11:59	2.06	100	DB32002
Beryllium	**0.33** (0.12)		6010C		1	CEV	02/21/23 11:59	2.06	100	DB32002
Cadmium	**1.85** (0.56)		6010C		1	CEV	02/21/23 11:59	2.06	100	DB32002
Chromium	**20.2** (1.12)		6010C		1	CEV	02/21/23 11:59	2.06	100	DB32002
Lead	**455** (5.62)		6010C		1	CEV	02/21/23 11:59	2.06	100	DB32002
Mercury	**0.406** (0.033)		7471B		1	YIV	02/23/23 11:33	0.69	40	DB32003
Nickel	**23.6** (2.81)		6010C		1	CEV	02/21/23 11:59	2.06	100	DB32002
Selenium	ND (5.62)		6010C		1	CEV	02/21/23 11:59	2.06	100	DB32002
Silver	ND (0.56)		6010C		1	CEV	02/21/23 11:59	2.06	100	DB32002
Thallium	ND (5.62)		6010C		1	CEV	02/21/23 11:59	2.06	100	DB32002
Vanadium	**18.9** (1.12)		6010C		1	CEV	02/21/23 11:59	2.06	100	DB32002
Zinc	**926** (2.81)		6010C		1	CEV	02/21/23 11:59	2.06	100	DB32002

CERTIFICATE OF ANALYSIS

Client Name: Weston and Sampson Engineers, Inc.
Client Project ID: Claxton Field
Client Sample ID: B-207F - 4-6
Date Sampled: 02/16/23 15:30
Percent Solids: 86
Initial Volume: 20.8g
Final Volume: 1ml
Extraction Method: 3546

ESS Laboratory Work Order: 23B0634
ESS Laboratory Sample ID: 23B0634-18
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 2/21/23 12:35

8270D Polynuclear Aromatic Hydrocarbons

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
2-Methylnaphthalene	ND (0.278)		8270D		1	02/22/23 0:11	D3B0383	DB32111
Acenaphthene	ND (0.278)		8270D		1	02/22/23 0:11	D3B0383	DB32111
Acenaphthylene	ND (0.278)		8270D		1	02/22/23 0:11	D3B0383	DB32111
Anthracene	ND (0.278)		8270D		1	02/22/23 0:11	D3B0383	DB32111
Benzo(a)anthracene	**0.911** (0.278)		8270D		1	02/22/23 0:11	D3B0383	DB32111
Benzo(a)pyrene	**0.830** (0.278)		8270D		1	02/22/23 0:11	D3B0383	DB32111
Benzo(b)fluoranthene	**0.802** (0.278)		8270D		1	02/22/23 0:11	D3B0383	DB32111
Benzo(g,h,i)perylene	**0.428** (0.278)		8270D		1	02/22/23 0:11	D3B0383	DB32111
Benzo(k)fluoranthene	**0.486** (0.278)		8270D		1	02/22/23 0:11	D3B0383	DB32111
Chrysene	**0.922** (0.278)		8270D		1	02/22/23 0:11	D3B0383	DB32111
Dibenzo(a,h)Anthracene	ND (0.278)		8270D		1	02/22/23 0:11	D3B0383	DB32111
Fluoranthene	**1.56** (0.278)		8270D		1	02/22/23 0:11	D3B0383	DB32111
Fluorene	ND (0.278)		8270D		1	02/22/23 0:11	D3B0383	DB32111
Indeno(1,2,3-cd)Pyrene	**0.492** (0.278)		8270D		1	02/22/23 0:11	D3B0383	DB32111
Naphthalene	ND (0.278)		8270D		1	02/22/23 0:11	D3B0383	DB32111
Phenanthrene	**0.956** (0.278)		8270D		1	02/22/23 0:11	D3B0383	DB32111
Pyrene	**1.59** (0.278)		8270D		1	02/22/23 0:11	D3B0383	DB32111

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichlorobenzene-d4	*87 %*		*30-130*
Surrogate: 2-Fluorobiphenyl	*85 %*		*30-130*
Surrogate: Nitrobenzene-d5	*81 %*		*30-130*
Surrogate: p-Terphenyl-d14	*91 %*		*30-130*

CERTIFICATE OF ANALYSIS

Client Name: Weston and Sampson Engineers, Inc.
Client Project ID: Claxton Field
Client Sample ID: B-207F - 4-6
Date Sampled: 02/16/23 15:30

ESS Laboratory Work Order: 23B0634
ESS Laboratory Sample ID: 23B0634-18
Sample Matrix: Soil

Subcontracted Analysis

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Units	Batch
Asbestos	**See Attached** (N/A)								

CERTIFICATE OF ANALYSIS

Client Name: Weston and Sampson Engineers, Inc.
Client Project ID: Claxton Field
Client Sample ID: CF-STOCKPILE
Date Sampled: 02/16/23 14:00
Percent Solids: 76

ESS Laboratory Work Order: 23B0634
ESS Laboratory Sample ID: 23B0634-19
Sample Matrix: Soil
Units: mg/kg dry

Extraction Method: 3050B

Total Metals

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Antimony	ND (6.40)		6010C		1	CEV	02/21/23 12:01	2.06	100	DB32002
Arsenic	**4.97** (3.20)		6010C		1	CEV	02/21/23 12:01	2.06	100	DB32002
Barium	**88.7** (3.20)		6010C		1	CEV	02/21/23 12:01	2.06	100	DB32002
Beryllium	**0.26** (0.14)		6010C		1	CEV	02/21/23 12:01	2.06	100	DB32002
Cadmium	**0.70** (0.64)		6010C		1	CEV	02/21/23 12:01	2.06	100	DB32002
Chromium	**14.0** (1.28)		6010C		1	CEV	02/21/23 12:01	2.06	100	DB32002
Lead	**206** (6.40)		6010C		1	CEV	02/21/23 12:01	2.06	100	DB32002
Mercury	**0.433** (0.043)		7471B		1	YIV	02/23/23 11:35	0.61	40	DB32003
Nickel	**9.97** (3.20)		6010C		1	CEV	02/21/23 12:01	2.06	100	DB32002
Selenium	ND (6.40)		6010C		1	CEV	02/21/23 12:01	2.06	100	DB32002
Silver	ND (0.64)		6010C		1	CEV	02/21/23 12:01	2.06	100	DB32002
Thallium	ND (6.40)		6010C		1	CEV	02/21/23 12:01	2.06	100	DB32002
Vanadium	**17.2** (1.28)		6010C		1	CEV	02/21/23 12:01	2.06	100	DB32002
Zinc	**199** (3.20)		6010C		1	CEV	02/21/23 12:01	2.06	100	DB32002

CERTIFICATE OF ANALYSIS

Client Name: Weston and Sampson Engineers, Inc.
Client Project ID: Claxton Field
Client Sample ID: CF-STOCKPILE
Date Sampled: 02/16/23 14:00
Percent Solids: 76
Initial Volume: 19.5g
Final Volume: 1ml
Extraction Method: 3546

ESS Laboratory Work Order: 23B0634
ESS Laboratory Sample ID: 23B0634-19
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 2/21/23 12:35

8270D Polynuclear Aromatic Hydrocarbons

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
2-Methylnaphthalene	ND (0.338)		8270D		1	02/22/23 22:55	D3B0410	DB32111
Acenaphthene	ND (0.338)		8270D		1	02/22/23 22:55	D3B0410	DB32111
Acenaphthylene	**1.46** (0.338)		8270D		1	02/22/23 22:55	D3B0410	DB32111
Anthracene	**0.891** (0.338)		8270D		1	02/22/23 22:55	D3B0410	DB32111
Benzo(a)anthracene	**2.36** (0.338)		8270D		1	02/22/23 22:55	D3B0410	DB32111
Benzo(a)pyrene	**2.19** (0.338)		8270D		1	02/22/23 22:55	D3B0410	DB32111
Benzo(b)fluoranthene	**1.85** (0.338)		8270D		1	02/22/23 22:55	D3B0410	DB32111
Benzo(g,h,i)perylene	**1.32** (0.338)		8270D		1	02/22/23 22:55	D3B0410	DB32111
Benzo(k)fluoranthene	**1.40** (0.338)		8270D		1	02/22/23 22:55	D3B0410	DB32111
Chrysene	**2.69** (0.338)		8270D		1	02/22/23 22:55	D3B0410	DB32111
Dibenzo(a,h)Anthracene	**0.412** (0.338)		8270D		1	02/22/23 22:55	D3B0410	DB32111
Fluoranthene	**3.92** (0.338)		8270D		1	02/22/23 22:55	D3B0410	DB32111
Fluorene	**0.487** (0.338)		8270D		1	02/22/23 22:55	D3B0410	DB32111
Indeno(1,2,3-cd)Pyrene	**1.42** (0.338)		8270D		1	02/22/23 22:55	D3B0410	DB32111
Naphthalene	ND (0.338)		8270D		1	02/22/23 22:55	D3B0410	DB32111
Phenanthrene	**4.14** (0.338)		8270D		1	02/22/23 22:55	D3B0410	DB32111
Pyrene	**4.57** (0.338)		8270D		1	02/22/23 22:55	D3B0410	DB32111

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichlorobenzene-d4	*80 %*		*30-130*
Surrogate: 2-Fluorobiphenyl	*73 %*		*30-130*
Surrogate: Nitrobenzene-d5	*80 %*		*30-130*
Surrogate: p-Terphenyl-d14	*90 %*		*30-130*

CERTIFICATE OF ANALYSIS

Client Name: Weston and Sampson Engineers, Inc.
Client Project ID: Claxton Field
Client Sample ID: CF-STOCKPILE
Date Sampled: 02/16/23 14:00

ESS Laboratory Work Order: 23B0634
ESS Laboratory Sample ID: 23B0634-19
Sample Matrix: Soil

Subcontracted Analysis

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Units	Batch
Asbestos	**See Attached** (N/A)								

CERTIFICATE OF ANALYSIS

Client Name: Weston and Sampson Engineers, Inc.
Client Project ID: Claxton Field

ESS Laboratory Work Order: 23B0634

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Total Metals										
Batch DB32002 - 3050B										
Blank										
Antimony	ND	4.88	mg/kg wet							
Arsenic	ND	2.44	mg/kg wet							
Barium	ND	2.44	mg/kg wet							
Beryllium	ND	0.11	mg/kg wet							
Cadmium	ND	0.49	mg/kg wet							
Chromium	ND	0.98	mg/kg wet							
Lead	ND	4.88	mg/kg wet							
Nickel	ND	2.44	mg/kg wet							
Selenium	ND	4.88	mg/kg wet							
Silver	ND	0.49	mg/kg wet							
Thallium	ND	4.88	mg/kg wet							
Vanadium	ND	0.98	mg/kg wet							
Zinc	ND	2.44	mg/kg wet							
Blank										
Antimony	ND	0.98	mg/kg wet							
Selenium	ND	0.98	mg/kg wet							
Thallium	ND	0.49	mg/kg wet							
LCS										
Antimony	63.1	15.6	mg/kg wet	59.10		107	80-120			
Arsenic	61.0	7.81	mg/kg wet	65.20		94	80-120			
Barium	642	7.81	mg/kg wet	626.0		103	80-120			
Beryllium	61.4	0.34	mg/kg wet	72.20		85	80-120			
Cadmium	98.9	1.56	mg/kg wet	118.0		84	80-120			
Chromium	136	3.12	mg/kg wet	159.0		86	80-120			
Lead	203	15.6	mg/kg wet	230.0		88	80-120			
Nickel	160	7.81	mg/kg wet	183.0		88	80-120			
Selenium	46.4	15.6	mg/kg wet	55.70		83	80-120			
Silver	42.7	1.56	mg/kg wet	46.20		92	80-120			
Thallium	73.9	15.6	mg/kg wet	83.30		89	80-120			
Vanadium	81.7	3.12	mg/kg wet	94.80		86	80-120			
Zinc	308	7.81	mg/kg wet	375.0		82	80-120			
LCS										
Antimony	69.0	15.6	mg/kg wet	59.10		117	80-120			
Selenium	48.0	15.6	mg/kg wet	55.70		86	80-120			
Thallium	64.7	7.81	mg/kg wet	83.30		78	65-134			
LCS Dup										
Antimony	60.5	15.2	mg/kg wet	59.10		102	80-120	4	30	
Arsenic	56.0	7.58	mg/kg wet	65.20		86	80-120	9	30	
Barium	623	7.58	mg/kg wet	626.0		99	80-120	3	30	
Beryllium	57.6	0.33	mg/kg wet	72.20		80	80-120	6	20	
Cadmium	92.8	1.52	mg/kg wet	118.0		79	80-120	6	30	B-
Chromium	127	3.03	mg/kg wet	159.0		80	80-120	7	30	
Lead	189	15.2	mg/kg wet	230.0		82	80-120	7	20	

CERTIFICATE OF ANALYSIS

Client Name: Weston and Sampson Engineers, Inc.
Client Project ID: Claxton Field

ESS Laboratory Work Order: 23B0634

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Total Metals										
Batch DB32002 - 3050B										
Nickel	150	7.58	mg/kg wet	183.0		82	80-120	7	30	
Selenium	44.1	15.2	mg/kg wet	55.70		79	80-120	5	30	B-
Silver	40.1	1.52	mg/kg wet	46.20		87	80-120	6	30	
Thallium	67.9	15.2	mg/kg wet	83.30		82	80-120	9	30	
Vanadium	76.7	3.03	mg/kg wet	94.80		81	80-120	6	30	
Zinc	290	7.58	mg/kg wet	375.0		77	80-120	6	30	B-
LCS Dup										
Antimony	65.3	15.2	mg/kg wet	59.10		111	80-120	5	30	
Selenium	45.5	15.2	mg/kg wet	55.70		82	80-120	5	30	
Thallium	60.8	7.58	mg/kg wet	83.30		73	65-134	6	30	
Batch DB32003 - 7471A										
Blank										
Mercury	ND	0.029	mg/kg wet							
LCS										
Mercury	16.2	3.30	mg/kg wet	18.20		89	80-120			
LCS Dup										
Mercury	16.3	3.30	mg/kg wet	18.20		90	80-120	1	30	
8270D Polynuclear Aromatic Hydrocarbons										
Batch DB32111 - 3546										
Blank										
2-Methylnaphthalene	ND	0.250	mg/kg wet							
Acenaphthene	ND	0.250	mg/kg wet							
Acenaphthylene	ND	0.250	mg/kg wet							
Anthracene	ND	0.250	mg/kg wet							
Benzo(a)anthracene	ND	0.250	mg/kg wet							
Benzo(a)pyrene	ND	0.250	mg/kg wet							
Benzo(b)fluoranthene	ND	0.250	mg/kg wet							
Benzo(g,h,i)perylene	ND	0.250	mg/kg wet							
Benzo(k)fluoranthene	ND	0.250	mg/kg wet							
Chrysene	ND	0.250	mg/kg wet							
Dibenzo(a,h)Anthracene	ND	0.250	mg/kg wet							
Fluoranthene	ND	0.250	mg/kg wet							
Fluorene	ND	0.250	mg/kg wet							
Indeno(1,2,3-cd)Pyrene	ND	0.250	mg/kg wet							
Naphthalene	ND	0.250	mg/kg wet							
Phenanthrene	ND	0.250	mg/kg wet							
Pyrene	ND	0.250	mg/kg wet							
Surrogate: 1,2-Dichlorobenzene-d4	*2.35*		mg/kg wet	*2.500*		*94*	*30-130*			
Surrogate: 2-Fluorobiphenyl	*2.33*		mg/kg wet	*2.500*		*93*	*30-130*			
Surrogate: Nitrobenzene-d5	*2.35*		mg/kg wet	*2.500*		*94*	*30-130*			
Surrogate: p-Terphenyl-d14	*2.41*		mg/kg wet	*2.500*		*96*	*30-130*			
LCS										

CERTIFICATE OF ANALYSIS

Client Name: Weston and Sampson Engineers, Inc.
Client Project ID: Claxton Field

ESS Laboratory Work Order: 23B0634

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8270D Polynuclear Aromatic Hydrocarbons										
Batch DB32111 - 3546										
2-Methylnaphthalene	2.34	0.250	mg/kg wet	2.500		93	40-140			
Acenaphthene	2.21	0.250	mg/kg wet	2.500		88	40-140			
Acenaphthylene	1.68	0.250	mg/kg wet	2.500		67	40-140			
Anthracene	2.18	0.250	mg/kg wet	2.500		87	40-140			
Benzo(a)anthracene	2.34	0.250	mg/kg wet	2.500		94	40-140			
Benzo(a)pyrene	2.30	0.250	mg/kg wet	2.500		92	40-140			
Benzo(b)fluoranthene	2.32	0.250	mg/kg wet	2.500		93	40-140			
Benzo(g,h,i)perylene	2.46	0.250	mg/kg wet	2.500		98	40-140			
Benzo(k)fluoranthene	2.51	0.250	mg/kg wet	2.500		100	40-140			
Chrysene	2.35	0.250	mg/kg wet	2.500		94	40-140			
Dibenzo(a,h)Anthracene	2.47	0.250	mg/kg wet	2.500		99	40-140			
Fluoranthene	2.50	0.250	mg/kg wet	2.500		100	40-140			
Fluorene	2.39	0.250	mg/kg wet	2.500		96	40-140			
Indeno(1,2,3-cd)Pyrene	2.33	0.250	mg/kg wet	2.500		93	40-140			
Naphthalene	2.29	0.250	mg/kg wet	2.500		91	40-140			
Phenanthrene	2.25	0.250	mg/kg wet	2.500		90	40-140			
Pyrene	2.35	0.250	mg/kg wet	2.500		94	40-140			
Surrogate: 1,2-Dichlorobenzene-d4	*2.46*		mg/kg wet	*2.500*		*98*	*30-130*			
Surrogate: 2-Fluorobiphenyl	*2.40*		mg/kg wet	*2.500*		*96*	*30-130*			
Surrogate: Nitrobenzene-d5	*2.46*		mg/kg wet	*2.500*		*98*	*30-130*			
Surrogate: p-Terphenyl-d14	*2.44*		mg/kg wet	*2.500*		*98*	*30-130*			
LCS Dup										
2-Methylnaphthalene	2.29	0.250	mg/kg wet	2.500		92	40-140	2	30	
Acenaphthene	2.20	0.250	mg/kg wet	2.500		88	40-140	0.3	30	
Acenaphthylene	1.63	0.250	mg/kg wet	2.500		65	40-140	3	30	
Anthracene	2.15	0.250	mg/kg wet	2.500		86	40-140	1	30	
Benzo(a)anthracene	2.34	0.250	mg/kg wet	2.500		94	40-140	0.04	30	
Benzo(a)pyrene	2.26	0.250	mg/kg wet	2.500		90	40-140	2	30	
Benzo(b)fluoranthene	2.28	0.250	mg/kg wet	2.500		91	40-140	2	30	
Benzo(g,h,i)perylene	2.49	0.250	mg/kg wet	2.500		99	40-140	1	30	
Benzo(k)fluoranthene	2.49	0.250	mg/kg wet	2.500		100	40-140	0.7	30	
Chrysene	2.32	0.250	mg/kg wet	2.500		93	40-140	1	30	
Dibenzo(a,h)Anthracene	2.46	0.250	mg/kg wet	2.500		98	40-140	0.5	30	
Fluoranthene	2.50	0.250	mg/kg wet	2.500		100	40-140	0.004	30	
Fluorene	2.34	0.250	mg/kg wet	2.500		94	40-140	2	30	
Indeno(1,2,3-cd)Pyrene	2.33	0.250	mg/kg wet	2.500		93	40-140	0.1	30	
Naphthalene	2.26	0.250	mg/kg wet	2.500		90	40-140	1	30	
Phenanthrene	2.25	0.250	mg/kg wet	2.500		90	40-140	0.09	30	
Pyrene	2.29	0.250	mg/kg wet	2.500		92	40-140	2	30	
Surrogate: 1,2-Dichlorobenzene-d4	*2.46*		mg/kg wet	*2.500*		*98*	*30-130*			
Surrogate: 2-Fluorobiphenyl	*2.46*		mg/kg wet	*2.500*		*98*	*30-130*			
Surrogate: Nitrobenzene-d5	*2.55*		mg/kg wet	*2.500*		*102*	*30-130*			
Surrogate: p-Terphenyl-d14	*2.49*		mg/kg wet	*2.500*		*100*	*30-130*			

CERTIFICATE OF ANALYSIS

Client Name: Weston and Sampson Engineers, Inc.
Client Project ID: Claxton Field

ESS Laboratory Work Order: 23B0634

Notes and Definitions

Z-08	See Attached
U	Analyte included in the analysis, but not detected
EL	Elevated Method Reporting Limits due to sample matrix (EL).
D	Diluted.
B-	Blank Spike recovery is below lower control limit (B-).
ND	Analyte NOT DETECTED at or above the MRL (LOQ), LOD for DoD Reports, MDL for J-Flagged Analytes
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
MDL	Method Detection Limit
MRL	Method Reporting Limit
LOD	Limit of Detection
LOQ	Limit of Quantitation
DL	Detection Limit
I/V	Initial Volume
F/V	Final Volume
§	Subcontracted analysis; see attached report
1	Range result excludes concentrations of surrogates and/or internal standards eluting in that range.
2	Range result excludes concentrations of target analytes eluting in that range.
3	Range result excludes the concentration of the C9-C10 aromatic range.
Avg	Results reported as a mathematical average.
NR	No Recovery
[CALC]	Calculated Analyte
SUB	Subcontracted analysis; see attached report
RL	Reporting Limit
EDL	Estimated Detection Limit
MF	Membrane Filtration
MPN	Most Probable Number
TNTC	Too numerous to Count
CFU	Colony Forming Units

CERTIFICATE OF ANALYSIS

Client Name: Weston and Sampson Engineers, Inc.
Client Project ID: Claxton Field

ESS Laboratory Work Order: 23B0634

ESS LABORATORY CERTIFICATIONS AND ACCREDITATIONS

ENVIRONMENTAL

Rhode Island Potable and Non Potable Water: LAI00179
http://www.health.ri.gov/find/labs/analytical/ESS.pdf

Connecticut Potable and Non Potable Water, Solid and Hazardous Waste: PH-0750
http://www.ct.gov/dph/lib/dph/environmental_health/environmental_laboratories/pdf/OutofStateCommercialLaboratories.pdf

Maine Potable and Non Potable Water, and Solid and Hazardous Waste: RI00002
http://www.maine.gov/dhhs/mecdc/environmental-health/dwp/partners/labCert.shtml

Massachusetts Potable and Non Potable Water: M-RI002
http://public.dep.state.ma.us/Labcert/Labcert.aspx

New Hampshire (NELAP accredited) Potable and Non Potable Water, Solid and Hazardous Waste: 2424
http://des.nh.gov/organization/divisions/water/dwgb/nhelap/index.htm

New York (NELAP accredited) Non Potable Water, Solid and Hazardous Waste: 11313
http://www.wadsworth.org/labcert/elap/comm.html

New Jersey (NELAP accredited) Non Potable Water, Solid and Hazardous Waste: RI006
http://datamine2.state.nj.us/DEP_OPRA/OpraMain/pi_main?mode=pi_by_site&sort_order=PI_NAMEA&Select+a+Site:=58715

Pennsylvania: 68-01752
http://www.dep.pa.gov/Business/OtherPrograms/Labs/Pages/Laboratory-Accreditation-Program.aspx

AEROBIOLOGY LABORATORY ASSOCIATES, INCORPORATED
A Pace Analytical® Laboratory

Shawn Morrell
ESS Laboratory
185 Frances Ave.
Cranston, RI 02910

February 24, 2023

Dear Shawn Morrell,

The enclosed analytical results have been obtained using the EPA/600/R-93/116 method. Calibrated Visual Estimate (CVE) is used by Aerobiology for the determination of the percentage of asbestos and other components in the sample. The sample preparation technique used was in accordance with the US EPA office of Environmental Evaluation and Measurement - Region 1 requirements. This technique involves the elimination of interfering particles through the following steps: homogenization of the sample; separation of different fractions and examination under the stereomicroscope.

The quality control data related to the samples analyzed is available upon client's written request. Aerobiology Laboratory Associates, Inc., assumes no responsibility for potential sample contamination that may have occurred during the sample collection process or erroneous data provided by the client. As such, these results apply to the sample(s) as received.

The enclosed results may not be used under any circumstances as product endorsement by any US government agency including NIST/NVLAP.

All Laboratory records are retained for at least three years unless otherwise directed in writing by the client. The actual samples are retained for a period of two months and written request is necessary in order to be retained for a longer period of time. All analytical results and records are considered strictly confidential and will not be released under any circumstances to anyone except the actual client. The analytical results included in this report apply only to the items tested. This report may not be reproduced, except in its entirety, without the permission of Aerobiology Laboratory Associates, Inc., Laboratory Manager.

If you have any questions please contact the Optical Manager or the Laboratory Manager.

Sincerely,

Aimee L Cormier

Aimee Cormier, Laboratory Manager

Enclosure:
LAB BATCH ID: S 132432 CLIENT PROJECT ID: 23B0634
Client Ref: N/A
CT ID# PH-0209; MA ID# AA000251; ME ID# LB-055; NVLAP Lab Code 200090-0; RI ID # PLM-00150; VT ID# AL254362.

Aerobiology Laboratory Associates, Inc.

Client #: 2118
Client Project: 23B0634
Client Reference: N/A
Client Name: ESS Laboratory
Method: EPA/600/R-93/116; ENV.EVAL. and MEAS.- REGION 1 Requirements

Batch: S 132432
Date Sampled: N/A
Date Received: 2/22/2023
Date Analyzed: 2/24/2023
Date of Report: 2/24/2023

Sample ID	Color	ASBESTOS %						NON-ASBESTOS %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
23B0634-01	Multi	0	0	0	0	0	0	0	0	5	0	0	0	95

Description: Soil
Location: N/A
Comments: Analyzed: Yes

Sample ID	Color	ASBESTOS %						NON-ASBESTOS %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
23B0634-02	Multi	0	0	0	0	0	0	0	0	5	0	0	0	95

Description: Soil
Location: N/A
Comments: Analyzed: Yes

Sample ID	Color	ASBESTOS %						NON-ASBESTOS %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
23B0634-03	Multi	0	0	0	0	0	0	2	0	5	0	0	0	93

Description: Soil
Location: N/A
Comments: Analyzed: Yes

Sample ID	Color	ASBESTOS %						NON-ASBESTOS %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
23B0634-04	Multi	0	0	0	0	0	0	0	0	2	0	0	0	98

Description: Soil
Location: N/A
Comments: Analyzed: Yes

Sample ID	Color	ASBESTOS %						NON-ASBESTOS %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
23B0634-05	Multi	0	0	0	0	0	0	2	0	5	0	0	0	93

Description: Soil
Location: N/A
Comments: Analyzed: Yes

Sample ID	Color	ASBESTOS %						NON-ASBESTOS %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
23B0634-06	Multi	0	0	0	0	0	0	0	0	2	0	0	0	98

Description: Soil
Location: N/A
Comments: Analyzed: Yes

Aerobiology Laboratory Associates, Inc.

Client #: 2118
Client Project: 23B0634
Client Reference: N/A
Client Name: ESS Laboratory
Method: EPA/600/R-93/116; ENV.EVAL. and MEAS.- REGION 1 Requirements

Batch: S 132432
Date Sampled: N/A
Date Received: 2/22/2023
Date Analyzed: 2/24/2023
Date of Report: 2/24/2023

Sample ID	Color	ASBESTOS %						NON-ASBESTOS %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
23B0634-07	Multi	0	0	0	0	0	0	0	0	15	0	0	0	85

Description: Soil
Location: N/A
Comments: Analyzed: Yes

Sample ID	Color	ASBESTOS %						NON-ASBESTOS %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
23B0634-08	Multi	0	0	0	0	0	0	0	0	2	0	0	2	96

Description: Soil
Location: N/A
Comments: Analyzed: Yes

Sample ID	Color	ASBESTOS %						NON-ASBESTOS %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
23B0634-09	Multi	0	0	0	0	0	0	0	0	2	0	0	0	98

Description: Soil
Location: N/A
Comments: Analyzed: Yes

Sample ID	Color	ASBESTOS %						NON-ASBESTOS %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
23B0634-10	Multi	0	0	0	0	0	0	0	0	2	0	0	0	98

Description: Soil
Location: N/A
Comments: Analyzed: Yes

Sample ID	Color	ASBESTOS %						NON-ASBESTOS %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
23B0634-11	Multi	0	0	0	0	0	0	0	0	3	0	0	0	97

Description: Soil
Location: N/A
Comments: Analyzed: Yes

Sample ID	Color	ASBESTOS %						NON-ASBESTOS %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
23B0634-12	Multi	0	0	0	0	0	0	0	0	5	0	0	0	95

Description: Soil
Location: N/A
Comments: Analyzed: Yes

Aerobiology Laboratory Associates, Inc.

Client #: 2118
Client Project: 23B0634
Client Reference: N/A
Client Name: ESS Laboratory
Method: EPA/600/R-93/116; ENV.EVAL. and MEAS.- REGION 1 Requirements

Batch: S 132432
Date Sampled: N/A
Date Received: 2/22/2023
Date Analyzed: 2/24/2023
Date of Report: 2/24/2023

Sample ID	Color	ASBESTOS %						NON-ASBESTOS %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
23B0634-13	Multi	0	0	0	0	0	0	0	0	2	0	0	0	98

Description: Soil
Location: N/A
Comments: Analyzed: Yes

Sample ID	Color	ASBESTOS %						NON-ASBESTOS %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
23B0634-14	Multi	0	0	0	0	0	0	2	0	2	0	0	0	96

Description: Soil
Location: N/A
Comments: Analyzed: Yes

Sample ID	Color	ASBESTOS %						NON-ASBESTOS %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
23B0634-15	Multi	0	0	0	0	0	0	0	0	7	0	0	0	93

Description: Soil
Location: N/A
Comments: Analyzed: Yes

Sample ID	Color	ASBESTOS %						NON-ASBESTOS %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
23B0634-16	Multi	0	0	0	0	0	0	0	0	2	0	0	0	98

Description: Soil
Location: N/A
Comments: Analyzed: Yes

Sample ID	Color	ASBESTOS %						NON-ASBESTOS %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
23B0634-17	Multi	0	0	0	0	0	0	0	0	<1	0	0	0	100

Description: Soil
Location: N/A
Comments: Analyzed: Yes

Sample ID	Color	ASBESTOS %						NON-ASBESTOS %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
23B0634-18	Multi	0	0	0	0	0	0	0	0	5	0	0	0	95

Description: Soil
Location: N/A
Comments: Analyzed: Yes

Aerobiology Laboratory Associates, Inc.

Client #:	2118	**Batch:**	**S 132432**
Client Project:	23B0634	Date Sampled:	N/A
Client Reference:	N/A	Date Received:	2/22/2023
Client Name:	ESS Laboratory	Date Analyzed:	2/24/2023
Method:	EPA/600/R-93/116; ENV.EVAL. and MEAS.- REGION 1 Requirements	Date of Report:	2/24/2023

Sample ID	Color	*ASBESTOS %*						*NON-ASBESTOS %*						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
23B0634-19	Multi	0	0	0	0	0	0	0	0	15	0	0	0	85

Description: Soil
Location: N/A
Comments: Analyzed: Yes

Asbestos Codes: CHR = Chrysotile AMO = Amosite CRO = Crocidolite ACT = Actinolite TRE = Tremolite ANT = Anthophyllite

Non-Asbestos Codes: FBG = Fiberglass MNW = Mineral Wool CEL = Cellulose HAR = Hair SYN = Synthetic OTH = Other NON = Non-Fibrous Minerals

Note: To create a unique lab sample ID, use the Batch # and the Sample ID (example: [Batch #] - [Sample ID]).

* All results are in percentage

Brian Shea, Analyst

Client Name: ESS Laboratory
Client Project #: 23B0634
Client Reference: N/A

Batch: S 132432
Date Received: 2/22/2023
Date Due: 2/24/2023
Stop on first pos: Yes or No

Batch: S132432

Sample ID	Description	Analyst	Stereo Scope					Optical Properties					RI		Asbestos Percent						Non-Asbestos Percent						
			SSAPE	Color	Homogeneity	Texture	Friable	Morphology	Extinction	Sign of Elongation	Birefringence	Pleochroism	Parallel	Perpendicular	Chrysotile	Amosite	Crocidolite	Tremolite	Anthophyllite	Actinolite	Fiberglass	Mineral Wool	Cellulose	Hair	Synthetic	Other	Non-Fibrous
23B0634-01	Soil	BS	0	MC	N	MT	Y																W				
																							5				95
23B0634-02	Soil		0	MC	N	MT	Y																W				
																							5				95
23B0634-03	Soil		0	MC	N	MT	Y														NL		W				
																					2		5				93
23B0634-04	Soil		0	MC	N	MT	Y																W				
																							2				98
23B0634-05	Soil		0	MC	N	MT	Y														NL		W				
																					2		5				93
23B0634-06	Soil		0	MC	N	MT	Y																W				
																							2				98
23B0634-07	Soil		0	MC	N	MT	Y																W				
																							15				85
23B0634-08	Soil		0	MC	N	MT	Y																W			NL	
																							2			2	96

Comments:

SSAPE = Stereo Scope Asbestos Percentage Estimate Birefringence L= less than .010, M= .011-.029, H= greater than .03: Microscope Olympus BH-2, Serial # circle 1- 242277, 229027, 235000, 230663

Batch: S132432

Sample ID	Description	Analyst	Stereo Scope					Optical Properties					RI		Asbestos Percent						Non-Asbestos Percent						
			SSAPE	Color	Homogeneity	Texture	Friable	Morphology	Extinction	Sign of Elongation	Birefringence	Pleochroism	Parallel	Perpendicular	Chrysotile	Amosite	Crocidolite	Tremolite	Anthophyllite	Actinolite	Fiberglass	Mineral Wool	Cellulose	Hair	Synthetic	Other	Non-Fibrous
23B0634-09	Soil																						W				
			0	MC	N	MT	Y																2				98
23B0634-10	Soil																						W				
			0	MC	N	MT	Y																2				98
23B0634-11	Soil																						W				
			0	MC	N	MT	Y																3				97
23B0634-12	Soil																						W				
			0	MC	N	MT	Y																5				95
23B0634-13	Soil																						W				
			0	MC	N	MT	Y																2				98
23B0634-14	Soil																				TR		W				
			0	MC	N	MT	Y														2		2				96
23B0634-15	Soil																						W				
			0	MC	H	MT	Y																7				93
23B0634-16	Soil																						W				
			0	MC	N	MT	Y																2				98
23B0634-17	Soil																						W				
			0	MC	H	MT	Y																1				100
23B0634-18	Soil																						W				
			0	MC	N	MT	Y																5				95

Comments:

SSAPE = Stereo Scope Asbestos Percentage Estimate Birefringence L= less than .010, M= .011-.029, H= greater than .03: Microscope Olympus BH-2, Serial # circle 1- 242277, 229027, 235000, 230663

Batch: S132432

Sample ID	Description	Analyst	Stereo Scope					Optical Properties					RI		Asbestos Percent						Non-Asbestos Percent						
			SSAPE	Color	Homogeneity	Texture	Friable	Morphology	Extinction	Sign of Elongation	Birefringence	Pleochroism	Parallel	Perpendicular	Chrysotile	Amosite	Crocidolite	Tremolite	Anthophyllite	Actinolite	Fiberglass	Mineral Wool	Cellulose	Hair	Synthetic	Other	Non-Fibrous
23B0634-19	Soil	BS	0	M	N	M	Y																W				
				C		T																	15				85

Analyzed By / Date: Brian Shaw 02/24/22

QC By / Date: 2/24/22

Fax, Email, Verbal Results By / Date:

# of Samples: 19

Comments:

SSAPE = Stereo Scope Asbestos Percentage Estimate Birefringence L= less than .010, M= .011-.029, H= greater than .03: Microscope Olympus BH-2, Serial # circle 1- 242277, 229027, 235000, 230563

5132432

SUBCONTRACT ORDER

23B0634

SENDING LABORATORY:

ESS Laboratory
185 Frances Avenue
Cranston, RI 02910
Phone: (401) 461-7181
Fax: (401) 461-4486
Project Name: 23B0634

RECEIVING LABORATORY:

Aerobiology Boston
22 Cummings Park
Woburn, MA 01801
Phone :(781) 935-3212
Fax: (781) 392-4857

☐ **These samples require MCL exceedance reporting**

Sample ID: 23B0634-01 | **Matrix: Soil** | **Sampled: 02/16/23 10:45**
DEP Location Name: N/A | **DEP Sample Type: N/A**
DEP Location ID#: N/A | **Sampled By: N/A**

Analysis	Due	Expires
SUB: Asbestos	2/24/2023	2/17/2023

Sample ID: 23B0634-02 | **Matrix: Soil** | **Sampled: 02/16/23 10:45**
DEP Location Name: N/A | **DEP Sample Type: N/A**
DEP Location ID#: N/A | **Sampled By: N/A**

Analysis	Due	Expires
SUB: Asbestos	2/24/2023	2/17/2023

Sample ID: 23B0634-03 | **Matrix: Soil** | **Sampled: 02/16/23 10:45**
DEP Location Name: N/A | **DEP Sample Type: N/A**
DEP Location ID#: N/A | **Sampled By: N/A**

Analysis	Due	Expires
SUB: Asbestos	2/24/2023	2/17/2023

Sample ID: 23B0634-04 | **Matrix: Soil** | **Sampled: 02/16/23 10:15**
DEP Location Name: N/A | **DEP Sample Type: N/A**
DEP Location ID#: N/A | **Sampled By: N/A**

Analysis	Due	Expires
SUB: Asbestos	2/24/2023	2/17/2023

Sample ID: 23B0634-05 | **Matrix: Soil** | **Sampled: 02/16/23 10:15**
DEP Location Name: N/A | **DEP Sample Type: N/A**
DEP Location ID#: N/A | **Sampled By: N/A**

Analysis	Due	Expires
SUB: Asbestos	2/24/2023	2/17/2023

Released By	Date	Received By	Date
		Doreen Downie	2/22/23 1:18
Released By	Date	Received By	Date

S132 432

SUBCONTRACT ORDER

23B0634

Sample ID: 23B0634-06 **Matrix: Soil** **Sampled: 02/16/23 13:30**

DEP Location Name: N/A **DEP Sample Type: N/A**

DEP Location ID#: N/A **Sampled By: N/A**

Analysis	Due	Expires
SUB: Asbestos	2/24/2023	2/17/2023

Sample ID: 23B0634-07 **Matrix: Soil** **Sampled: 02/16/23 13:30**

DEP Location Name: N/A **DEP Sample Type: N/A**

DEP Location ID#: N/A **Sampled By: N/A**

Analysis	Due	Expires
SUB: Asbestos	2/24/2023	2/17/2023

Sample ID: 23B0634-08 **Matrix: Soil** **Sampled: 02/16/23 13:30**

DEP Location Name: N/A **DEP Sample Type: N/A**

DEP Location ID#: N/A **Sampled By: N/A**

Analysis	Due	Expires
SUB: Asbestos	2/24/2023	2/17/2023

Sample ID: 23B0634-09 **Matrix: Soil** **Sampled: 02/16/23 12:00**

DEP Location Name: N/A **DEP Sample Type: N/A**

DEP Location ID#: N/A **Sampled By: N/A**

Analysis	Due	Expires
SUB: Asbestos	2/24/2023	2/17/2023

Sample ID: 23B0634-10 **Matrix: Soil** **Sampled: 02/16/23 12:00**

DEP Location Name: N/A **DEP Sample Type: N/A**

DEP Location ID#: N/A **Sampled By: N/A**

Analysis	Due	Expires
SUB: Asbestos	2/24/2023	2/17/2023

Sample ID: 23B0634-11 **Matrix: Soil** **Sampled: 02/16/23 12:00**

DEP Location Name: N/A **DEP Sample Type: N/A**

DEP Location ID#: N/A **Sampled By: N/A**

Analysis	Due	Expires
SUB: Asbestos	2/24/2023	2/17/2023

Released By	Date	Received By	Date
Released By	Date	Received By	Date

S132432

SUBCONTRACT ORDER

23B0634

Sample ID: 23B0634-12 | **Matrix: Soil** | **Sampled: 02/16/23 14:30**

DEP Location Name: N/A | **DEP Sample Type: N/A**

DEP Location ID#: N/A | **Sampled By: N/A**

Analysis	Due	Expires
SUB: Asbestos	2/24/2023	2/17/2023

Sample ID: 23B0634-13 | **Matrix: Soil** | **Sampled: 02/16/23 14:30**

DEP Location Name: N/A | **DEP Sample Type: N/A**

DEP Location ID#: N/A | **Sampled By: N/A**

Analysis	Due	Expires
SUB: Asbestos	2/24/2023	2/17/2023

Sample ID: 23B0634-14 | **Matrix: Soil** | **Sampled: 02/16/23 14:30**

DEP Location Name: N/A | **DEP Sample Type: N/A**

DEP Location ID#: N/A | **Sampled By: N/A**

Analysis	Due	Expires
SUB: Asbestos	2/24/2023	2/17/2023

Sample ID: 23B0634-15 | **Matrix: Soil** | **Sampled: 02/16/23 15:15**

DEP Location Name: N/A | **DEP Sample Type: N/A**

DEP Location ID#: N/A | **Sampled By: N/A**

Analysis	Due	Expires
SUB: Asbestos	2/24/2023	2/17/2023

Sample ID: 23B0634-16 | **Matrix: Soil** | **Sampled: 02/16/23 15:15**

DEP Location Name: N/A | **DEP Sample Type: N/A**

DEP Location ID#: N/A | **Sampled By: N/A**

Analysis	Due	Expires
SUB: Asbestos	2/24/2023	2/17/2023

Sample ID: 23B0634-17 | **Matrix: Soil** | **Sampled: 02/16/23 15:15**

DEP Location Name: N/A | **DEP Sample Type: N/A**

DEP Location ID#: N/A | **Sampled By: N/A**

Analysis	Due	Expires
SUB: Asbestos	2/24/2023	2/17/2023

Released By	Date	Received By	Date
Released By	Date	Received By	Date

S132432

SUBCONTRACT ORDER

23B0634

Sample ID: 23B0634-18 | **Matrix: Soil** | **Sampled: 02/16/23 15:30**

DEP Location Name: N/A | **DEP Sample Type: N/A**

DEP Location ID#: N/A | **Sampled By: N/A**

Analysis	Due	Expires
SUB: Asbestos	2/24/2023	2/17/2023

Sample ID: 23B0634-19 | **Matrix: Soil** | **Sampled: 02/16/23 14:00**

DEP Location Name: N/A | **DEP Sample Type: N/A**

DEP Location ID#: N/A | **Sampled By: N/A**

Analysis	Due	Expires
SUB: Asbestos	2/24/2023	2/17/2023

Released By	Date	Received By	Date
Released By	Date	Received By	Date

Pace Analytical Services, LLC.
1700 Elm Street
Minneapolis, MN 55414
Phone: 612.607.1700
Fax: 612.607.6444

www.pacelabs.com

Report Prepared for:

Shawn Morrell
ESS Laboratory
185 Frances Avenue
Cranston RI 02910-2211

REPORT OF LABORATORY ANALYSIS FOR PCDD/PCDF

Report Information:

Pace Project #: 10643743
Sample Receipt Date: 02/22/2023
Client Project #: 23B0634
Client Sub PO #: B03045
State Cert #: N/A

Invoicing & Reporting Options:

The report provided has been invoiced as a Level 2 PCDD/PCDF Report. If an upgrade of this report package is requested, an additional charge may be applied.

Please review the attached invoice for accuracy and forward any questions to Joanne Richardson, your Pace Project Manager.

This report has been reviewed by:

Joanne Richardson

March 10, 2023

Joanne Richardson,
(612) 607-6453
(612) 607-6444 (fax)

Report Prepared Date:
March 10, 2023

Report of Laboratory Analysis

Pace Analytical Services, LLC.
1700 Elm Street
Minneapolis, MN 55414
Phone: 612.607.1700
Fax: 612.607.6444

DISCUSSION

This report presents the results from the analyses performed on nine samples submitted by a representative of ESS Laboratory. The samples were analyzed for the presence or absence of polychlorodibenzo-p-dioxins (PCDDs) and polychlorodibenzofurans (PCDFs) using a modified version of USEPA Method 8290. The estimated detection limits (EDLs) were based on signal-to-noise measurements. Estimated maximum possible concentration (EMPC) values were treated as positives in the toxic equivalence calculations.

Second column confirmation analyses of 2,3,7,8-TCDF values obtained from the primary (DB5-MS) column are performed only when specifically requested for a project and only when the values are above the concentration of the lowest calibration standard. Typical resolution for this isomer using the DB5-MS column ranges from 25-30%.

The recoveries of the isotopically-labeled PCDD/PCDF internal standards in the sample extracts ranged from 52-115%. All of the labeled standard recoveries obtained for this project were within the 40-135% target range specified in Method 8290. Also, since the quantification of the native 2,3,7,8-substituted congeners was based on isotope dilution, the data were automatically corrected for variation in recovery and accurate values were obtained.

Values were flagged "I" where incorrect isotope ratios were obtained or "P" where polychlorinated diphenyl ethers were present. Concentrations below the calibration range were flagged "J" and should be regarded as estimates.

A laboratory method blank was prepared and analyzed with the sample batch as part of our routine quality control procedures. The results show the blank to contain a trace level of Total HpCDD. This level was below the calibration range for the method. The Total HpCDD concentrations reported for the field samples were higher than the corresponding blank level by one or more orders of magnitude.

A laboratory spike sample was also prepared using clean reference matrix that had been fortified with native standard materials. The recoveries of the native compounds ranged from 95-125%. These results were within the target range for the method. Matrix spikes were prepared with the sample batch using sample material from a separate project; results from these analyses will be provided upon request.

The responses obtained for selected labeled congeners in calibration standard analyses L230301B_17 and L230303A_13 were outside the target ranges. As specified in our procedures for this method, the averages of the daily response factors for these compounds were used in the calculations for the samples from these runshifts. The affected values were flagged "Y" on the results tables.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Minnesota Laboratory Certifications

Authority	Certificate #	Authority	Certificate #
		Missouri	10100
A2LA	2926.01	Montana	CERT0092
Alabama	40770	Nebraska	NE-OS-18-06
Alaska-DW	MN00064	Nevada	MN00064
Alaska-UST	17-009	New Hampshire	2081
Arizona	AZ0014	New Jersey	MN002
Arkansas - WW	88-0680	New York	11647
Arkansas-DW	MN00064	North Carolina-	27700
California	2929	North Carolina-	530
Colorado	MN00064	North Dakota	R-036
Connecticut	PH-0256	Ohio-DW	41244
Florida	E87605	Ohio-VAP (170	CL101
Georgia	959	Ohio-VAP (180	CL110
Hawaii	MN00064	Oklahoma	9507
Idaho	MN00064	Oregon-Primary	MN300001
Illinois	200011	Oregon-Second	MN200001
Indiana	C-MN-01	Pennsylvania	68-00563
Iowa	368	Puerto Rico	MN00064
Kansas	E-10167	South Carolina	74003
Kentucky-DW	90062	Tennessee	TN02818
Kentucky-WW	90062	Texas	T104704192
Louisiana-DEQ	AI-84596	Utah	MN00064
Louisiana-DW	MN00064	Vermont	VT-027053137
Maine	MN00064	Virginia	460163
Maryland	322	Washington	C486
Michigan	9909	West Virginia-D	382
Minnesota	027-053-137	West Virginia-D	9952C
Minnesota-Ag	via MN 027-053	Wisconsin	999407970
Minnesota-Petr	1240	Wyoming-UST	via A2LA 2926.
Mississippi	MN00064		

REPORT OF LABORATORY ANALYSIS

Report No.....2

Pace Analytical Services, LLC
1700 Elm Street, Suite 200
Minneapolis, MN 55414
Phone: 612.607.1700
Fax: 612.607.6444
www.pacelabs.com

Appendix A

Sample Management

REPORT OF LABORATORY ANALYSIS

ESS LABORATORY

SUBCONTRACT ORDER

WO# : 10643743

23B0634

10643743

SENDING LABORATORY:

ESS Laboratory
185 Frances Avenue
Cranston, RI 02910
Phone: (401) 461-7181
Fax: (401) 461-4486
Project Name: 23B0634

RECEIVING LABORATORY:

Pace Analytical
1700 Elm Street
Minneapolis, MN 55414
Phone :(612) 607-1700
Fax: (612) 607-6444

☐ **These samples require MCL exceedance reporting**

Sample ID: 23B0634-06 | **Matrix: Soil** | **Sampled: 02/16/23 13:30** 01
DEP Location Name: N/A | **DEP Sample Type: N/A**
DEP Location ID#: N/A | **Sampled By: N/A**

Analysis	Due	Expires

Sample ID: 23B0634-07 | **Matrix: Soil** | **Sampled: 02/16/23 13:30** 02
DEP Location Name: N/A | **DEP Sample Type: N/A**
DEP Location ID#: N/A | **Sampled By: N/A**

Analysis	Due	Expires

Sample ID: 23B0634-08 | **Matrix: Soil** | **Sampled: 02/16/23 13:30** 03
DEP Location Name: N/A | **DEP Sample Type: N/A**
DEP Location ID#: N/A | **Sampled By: N/A**

Analysis	Due	Expires

Sample ID: 23B0634-09 | **Matrix: Soil** | **Sampled: 02/16/23 12:00** 04
DEP Location Name: N/A | **DEP Sample Type: N/A**
DEP Location ID#: N/A | **Sampled By: N/A**

Analysis	Due	Expires

Sample ID: 23B0634-10 | **Matrix: Soil** | **Sampled: 02/16/23 12:00** 05
DEP Location Name: N/A | **DEP Sample Type: N/A**
DEP Location ID#: N/A | **Sampled By: N/A**

Analysis	Due	Expires

Released By	Date	Received By	Date
[signature]	2/21/23 15:17	[signature]/PACE	2/22/23 945

4.9°C

Released By	Date	Received By	Date

ESS LABORATORY

SUBCONTRACT ORDER

23B0634

Sample ID: 23B0634-11	**Matrix: Soil**		**Sampled: 02/16/23 12:00**
DEP Location Name: N/A	**DEP Sample Type: N/A**		
DEP Location ID#: N/A	**Sampled By: N/A**		
Analysis	**Due**	**Expires**	

CW6

Sample ID: 23B0634-12	**Matrix: Soil**		**Sampled: 02/16/23 14:30**
DEP Location Name: N/A	**DEP Sample Type: N/A**		
DEP Location ID#: N/A	**Sampled By: N/A**		
Analysis	**Due**	**Expires**	

CW7

Sample ID: 23B0634-13	**Matrix: Soil**		**Sampled: 02/16/23 14:30**
DEP Location Name: N/A	**DEP Sample Type: N/A**		
DEP Location ID#: N/A	**Sampled By: N/A**		
Analysis	**Due**	**Expires**	

CW8

Sample ID: 23B0634-14	**Matrix: Soil**		**Sampled: 02/16/23 14:30**
DEP Location Name: N/A	**DEP Sample Type: N/A**		
DEP Location ID#: N/A	**Sampled By: N/A**		
Analysis	**Due**	**Expires**	

CW9

Released By	Date	Received By	Date
[signature]	2/21/23 15:17	[signature]/PACE	2/22/23 945

4.9°C

Released By	Date	Received By	Date

SUBCONTRACT ORDER

23B0634

SENDING LABORATORY:

ESS Laboratory
185 Frances Avenue
Cranston, RI 02910
Phone: (401) 461-7181
Fax: (401) 461-4486
Project Name: 23B0634

RECEIVING LABORATORY:

Pace Analytical
1700 Elm Street
Minneapolis, MN 55414
Phone :(612) 607-1700
Fax: (612) 607-6444

☐ **These samples require MCL exceedance reporting**

Sample ID: 23B0634-06 **Matrix: Soil** **Sampled: 02/16/23 13:30**

DEP Location Name: N/A **DEP Sample Type: N/A**

DEP Location ID#: N/A **Sampled By: N/A**

Analysis	Due	Expires
SUB: Dioxin	2/24/2023	2/17/2023

Sample ID: 23B0634-07 **Matrix: Soil** **Sampled: 02/16/23 13:30**

DEP Location Name: N/A **DEP Sample Type: N/A**

DEP Location ID#: N/A **Sampled By: N/A**

Analysis	Due	Expires
SUB: Dioxin	2/24/2023	2/17/2023

Sample ID: 23B0634-08 **Matrix: Soil** **Sampled: 02/16/23 13:30**

DEP Location Name: N/A **DEP Sample Type: N/A**

DEP Location ID#: N/A **Sampled By: N/A**

Analysis	Due	Expires
SUB: Dioxin	2/24/2023	2/17/2023

Sample ID: 23B0634-09 **Matrix: Soil** **Sampled: 02/16/23 12:00**

DEP Location Name: N/A **DEP Sample Type: N/A**

DEP Location ID#: N/A **Sampled By: N/A**

Analysis	Due	Expires
SUB: Dioxin	2/24/2023	2/17/2023

Sample ID: 23B0634-10 **Matrix: Soil** **Sampled: 02/16/23 12:00**

DEP Location Name: N/A **DEP Sample Type: N/A**

DEP Location ID#: N/A **Sampled By: N/A**

Analysis	Due	Expires
SUB: Dioxin	2/24/2023	2/17/2023

Released By	Date	Received By	Date

Released By	Date	Received By	Date

SUBCONTRACT ORDER

23B0634

Sample ID: 23B0634-11 **Matrix: Soil** **Sampled: 02/16/23 12:00**

DEP Location Name: N/A **DEP Sample Type: N/A**

DEP Location ID#: N/A **Sampled By: N/A**

Analysis	Due	Expires
SUB: Dioxin	2/24/2023	2/17/2023

Sample ID: 23B0634-12 **Matrix: Soil** **Sampled: 02/16/23 14:30**

DEP Location Name: N/A **DEP Sample Type: N/A**

DEP Location ID#: N/A **Sampled By: N/A**

Analysis	Due	Expires
SUB: Dioxin	2/24/2023	2/17/2023

Sample ID: 23B0634-13 **Matrix: Soil** **Sampled: 02/16/23 14:30**

DEP Location Name: N/A **DEP Sample Type: N/A**

DEP Location ID#: N/A **Sampled By: N/A**

Analysis	Due	Expires
SUB: Dioxin	2/24/2023	2/17/2023

Sample ID: 23B0634-14 **Matrix: Soil** **Sampled: 02/16/23 14:30**

DEP Location Name: N/A **DEP Sample Type: N/A**

DEP Location ID#: N/A **Sampled By: N/A**

Analysis	Due	Expires
SUB: Dioxin	2/24/2023	2/17/2023

Released By	Date	Received By	Date

Released By	Date	Received By	Date

Pace ANALYTICAL SERVICES	DC#_Title: ENV-FRM-MIN4-0142 v02_Sample Condition Upon Receipt (SCUR) Exception Form
	Effective Date: 09/22/2022

Workorder #: 10643743

No Temp Blank		
Read Temp	Corrected Temp	Average temp
5.5	5.8	4.9
5.5	5.8	
3.8	4.1	
3.5	3.8	

PM Notified of Out of Temp Cooler? ☐ Yes ☐ No

If yes, indicate who was contacted, date and time.
If no, indicate reason why.

_____

Multiple Cooler Project? ☐ Yes ☐ No

If anything is OVER 6.0° C, you MUST document containers in this section HERE

Tracking Number	Temperature

Out of Temp Sample ID	Container Type	# of Containers

pH Adjustment Log for Preserved Samples

Sample ID	Type Of Preserve	pH Upon Receipt	Date Adjusted	Time Adjusted	Amount Added (mL)	Lot # Added	pH After	In Compliance After Addition?		Initials
								☐ Yes	☐ No	
								☐ Yes	☐ No	
								☐ Yes	☐ No	
								☐ Yes	☐ No	
								☐ Yes	☐ No	
								☐ Yes	☐ No	
								☐ Yes	☐ No	
								☐ Yes	☐ No	

Comments:

Qualtrax ID: 52763

DC#_Title: Excel Form Template
Effective Date:

Sample Condition Upon Receipt

Client Name: ESS Laboratory

Project #: **WO#: 10643743**

PM: JMR **Due Date: 03/15/23**
CLIENT: ESS LAB

Courier: ☐ FedEx ☒ UPS ☐ USPS ☐ Client ☐ Pace ☐ SpeeDee ☐ Commercial

Tracking Number: 1Z 037 497 01 7208 7788 ☐ See Exceptions ENV-FRM-MIN4-0142

Custody Seal on Cooler/Box Present? ☐ Yes ☒ No **Seals Intact?** ☐ Yes ☒ No **Biological Tissue Frozen?** ☐ Yes ☐ No ☒ N/A

Packing Material: ☒ Bubble Wrap ☒ Bubble Bags ☐ None ☐ Other **Temp Blank?** ☐ Yes ☑ No

Thermometer: ☐ T1 (0461) ☐ T2 (1336) ☐ T3 (0459) ☐ T4 (0254) ☐ T5 (0178) ☐ T6 (0235) ☐ T7 (0042) ☐ T8 (0775) ☒ T9(0727) ☐ 01339252/1710 **Type of Ice:** ☒ Wet ☐ Blue ☐ Dry ☐ None ☐ Melted

Did Samples Originate in West Virginia? ☐ Yes ☐ No **Were All Container Temps Taken?** ☐ Yes ☐ No ☒ N/A

Temp should be above freezing to 6 °C **Cooler temp Read w/Temp Blank:** _____ °C

Correction Factor: +0.3 **Cooler Temp Corrected w/temp blank:** _____ °C

Average Corrected Temp (no temp blank only): _____ °C
☒ See Exceptions ENV-FRM-MIN4-0142 ☐ 1 Container

USDA Regulated Soil: (☐ N/A, water sample/other: _____) **Date/Initials of Person Examining Contents:** HB 2/22/23

Did samples originate in a quarantine zone within the United States: AL, AR, AZ CA, FL, GA, ID, LA, MS, NC, NM, NY, OK, OR, SC, TN, TX, or VA (check maps)? ☐ Yes ☒ No

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? ☐ Yes ☒ No

If Yes to either question, fill out a Regulated Soil Checklist (ENV-FRM-MIN4-0154) and include with SCUR/COC paperwork.

Location (Check one): ☐ Duluth ☒ Minneapolis ☐ Virginia

				COMMENTS
Chain of Custody Present and Filled Out?	☒ Yes	☐ No		1.
Chain of Custody Relinquished?	☒ Yes	☐ No		2.
Sampler Name and/or Signature on COC?	☐ Yes	☒ No	☐ N/A	3.
Samples Arrived within Hold Time?	☒ Yes	☐ No		4. If fecal: ☐ <8 hrs ☐ >8 hr, <24 ☐ No
Short Hold Time Analysis (<72 hr)?	☐ Yes	☒ No		5. ☐ Fecal Coliform ☐ HPC ☐ Total Coliform/E.coli ☐ BOD/cBOD ☐ Hex Chrom ☐ Turbidity ☐ Nitrate ☐ Nitrite ☐ Orthophos ☐ Other
Rush Turn Around Time Requested?	☐ Yes	☒ No		6.
Sufficient Sample Volume?	☒ Yes	☐ No		7.
Correct Containers Used?	☒ Yes	☐ No	☐ N/A	8.
-Pace Containers Used?	☐ Yes	☒ No		
Containers Intact?	☒ Yes	☐ No		9.
Field Filtered Volume Received for Dissolved Tests?	☐ Yes	☐ No	☒ N/A	10. Is sediment visible in the dissolved container? ☐ Yes ☐ No
Is sufficient information available to reconcile the samples to the COC? Matrix: ☐ Water ☒ Soil ☐ Oil ☐ Other	☒ Yes	☐ No		11. **If no, write ID/Date/Time of container below:** ☐ See Exceptions ENV-FRM-MIN4-0142
All containers needing acid/base preservation have been checked?	☐ Yes	☐ No	☒ N/A	12. Sample #
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO3, H2SO4, <2pH, NaOH >9 Sulfide, NaOH>10 Cyanide)	☐ Yes	☐ No	☒ N/A	☐ NaOH ☐ HNO3 ☐ H2SO4 ☐ Zinc Acetate
Exceptions: VOA, Coliform, TOC/DOC Oil and Grease, DRO/8015 (water) and Dioxins/PFAS (*If adding preservative to a container, it must be added to associated field and equipment blanks--verify with PM first.)	☐ Yes	☐ No	☒ N/A	Positive for Residual Chlorine? ☐ Yes ☐ No ☐ See Exceptions ENV-FRM-MIN4-0142 **pH Paper Lot #** Residual Chlorine | 0-6 Roll | 0-6 Strip | 0-14 Strip
Headspace in Methyl Mercury Container?	☐ Yes	☐ No	☑ N/A	13.
Extra labels present on soil VOA or WIDRO containers?	☐ Yes	☐ No	☑ N/A	14. ☐ See Exceptions ENV-FRM-MIN4-0142
Headspace in VOA Vials (greater than 6mm)?	☐ Yes	☐ No	☒ N/A	
3 Trip Blanks Present?	☐ Yes	☐ No	☒ N/A	15.
Trip Blank Custody Seals Present?	☐ Yes	☐ No	☒ N/A	Pace Trip Blank Lot # (if purchased): _____

CLIENT NOTIFICATION/RESOLUTION **Field Data Required?** ☐ Yes ☐ No

Person Contacted: _____ Date/Time: _____

Comments/Resolution: _____

Project Manager Review: Joanne Richardson **Date:** 2-22-23

NOTE: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. out of hold, incorrect preservative, out of temp, incorrect containers).

Labeled By: RNC **Line:** 5

Pace Analytical Services, LLC
1700 Elm Street, Suite 200
Minneapolis, MN 55414
Phone: 612.607.1700
Fax: 612.607.6444
www.pacelabs.com

Reporting Flags

A = Reporting Limit based on signal to noise (EDL)

B = Less than 10x higher than method blank level

C = Result obtained from confirmation analysis

D = Result obtained from analysis of diluted sample

E = Exceeds calibration range

H2 = Extracted outside of holding time

I = Isotope ratio out of specification

J = Estimated value

L = Suppressive interference, analyte may be biased low

Nn = Value obtained from additional analysis

P = PCDE Interference

R = Recovery outside target range

S = Peak saturated

U = Analyte not detected

V = Result verified by confirmation analysis

X = %D Exceeds limits

Y = Calculated using average of daily RFs

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street, Suite 200
Minneapolis, MN 55414
Phone: 612.607.1700
Fax: 612.607.6444
www.pacelabs.com

Appendix B

Sample Analysis Summary

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Method 8290 Sample Analysis Results

Client - ESS Laboratory

Client's Sample ID	23B0634-06		
Lab Sample ID	10643743001		
Filename	L230303A_03		
Injected By	SMT		
Total Amount Extracted	10.4 g	Matrix	Solid
% Moisture	26.9	Dilution	NA
Dry Weight Extracted	7.59 g	Collected	02/16/2023 13:30
ICAL ID	L230302	Received	02/22/2023 09:45
CCal Filename(s)	L230302B_18 & L230303A_13	Extracted	02/27/2023 11:50
Method Blank ID	BLANK-104255	Analyzed	03/03/2023 06:29

Native Isomers	Conc ng/Kg	EMPC ng/Kg	EDL ng/Kg		Internal Standards	ng's Added	Percent Recovery	
2,3,7,8-TCDF	0.99	-----	0.39	J	2,3,7,8-TCDF-13C	2.00	78	
Total TCDF	12	-----	0.39		2,3,7,8-TCDD-13C	2.00	72	
					1,2,3,7,8-PeCDF-13C	2.00	83	
2,3,7,8-TCDD	-----	0.54	0.16	IJ	2,3,4,7,8-PeCDF-13C	2.00	87	
Total TCDD	5.8	-----	0.16		1,2,3,7,8-PeCDD-13C	2.00	90	
					1,2,3,4,7,8-HxCDF-13C	2.00	87	
1,2,3,7,8-PeCDF	1.3	-----	0.13	J	1,2,3,6,7,8-HxCDF-13C	2.00	83	
2,3,4,7,8-PeCDF	2.1	-----	0.094	J	2,3,4,6,7,8-HxCDF-13C	2.00	83	
Total PeCDF	28	-----	0.094		1,2,3,7,8,9-HxCDF-13C	2.00	74	
					1,2,3,4,7,8-HxCDD-13C	2.00	82	
1,2,3,7,8-PeCDD	4.8	-----	0.21	J	1,2,3,6,7,8-HxCDD-13C	2.00	83	
Total PeCDD	16	-----	0.21		1,2,3,4,6,7,8-HpCDF-13C	2.00	66	
					1,2,3,4,7,8,9-HpCDF-13C	2.00	65	
1,2,3,4,7,8-HxCDF	3.8	-----	0.11	J	1,2,3,4,6,7,8-HpCDD-13C	2.00	76	
1,2,3,6,7,8-HxCDF	4.1	-----	0.089	J	OCDD-13C	4.00	77	Y
2,3,4,6,7,8-HxCDF	2.2	-----	0.045	J				
1,2,3,7,8,9-HxCDF	0.77	-----	0.25	J	1,2,3,4-TCDD-13C	2.00	NA	
Total HxCDF	54	-----	0.045		1,2,3,7,8,9-HxCDD-13C	2.00	NA	
1,2,3,4,7,8-HxCDD	5.5	-----	0.19	J	2,3,7,8-TCDD-37Cl4	0.20	60	
1,2,3,6,7,8-HxCDD	9.3	-----	0.078					
1,2,3,7,8,9-HxCDD	9.0	-----	0.14					
Total HxCDD	74	-----	0.078					
1,2,3,4,6,7,8-HpCDF	25	-----	0.20		Total 2,3,7,8-TCDD			
1,2,3,4,7,8,9-HpCDF	-----	1.6	0.23	IJ	Equivalence: 30 ng/Kg			
Total HpCDF	60	-----	0.20		(Lower-bound - Using MADEP Factors)			
1,2,3,4,6,7,8-HpCDD	120	-----	0.16					
Total HpCDD	310	-----	0.16					
OCDF	45	-----	0.14					
OCDD	1600	-----	0.47					

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).
EMPC = Estimated Maximum Possible Concentration
EDL = Estimated Detection Limit

ND = Not Detected
NA = Not Applicable
NC = Not Calculated

Results reported on a dry weight basis and are valid to no more than 2 significant figures.
J = Estimated value
I = Isotope ratio out of specification
Y = Calculated using average of daily RFs

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Method 8290 Sample Analysis Results

Client - ESS Laboratory

Client's Sample ID	23B0634-07		
Lab Sample ID	10643743002		
Filename	L230303A_04		
Injected By	SMT		
Total Amount Extracted	10.3 g	Matrix	Solid
% Moisture	20.2	Dilution	NA
Dry Weight Extracted	8.18 g	Collected	02/16/2023 13:30
ICAL ID	L230302	Received	02/22/2023 09:45
CCal Filename(s)	L230302B_18 & L230303A_13	Extracted	02/27/2023 11:50
Method Blank ID	BLANK-104255	Analyzed	03/03/2023 07:14

Native Isomers	Conc ng/Kg	EMPC ng/Kg	EDL ng/Kg		Internal Standards	ng's Added	Percent Recovery	
2,3,7,8-TCDF	1.9	-----	0.058		2,3,7,8-TCDF-13C	2.00	85	
Total TCDF	33	-----	0.058		2,3,7,8-TCDD-13C	2.00	79	
					1,2,3,7,8-PeCDF-13C	2.00	85	
2,3,7,8-TCDD	0.46	-----	0.084	J	2,3,4,7,8-PeCDF-13C	2.00	95	
Total TCDD	13	-----	0.084		1,2,3,7,8-PeCDD-13C	2.00	94	
					1,2,3,4,7,8-HxCDF-13C	2.00	95	
1,2,3,7,8-PeCDF	1.6	-----	0.39	J	1,2,3,6,7,8-HxCDF-13C	2.00	89	
2,3,4,7,8-PeCDF	2.7	-----	0.19	J	2,3,4,6,7,8-HxCDF-13C	2.00	85	
Total PeCDF	29	-----	0.19		1,2,3,7,8,9-HxCDF-13C	2.00	79	
					1,2,3,4,7,8-HxCDD-13C	2.00	87	
1,2,3,7,8-PeCDD	2.0	-----	0.072	J	1,2,3,6,7,8-HxCDD-13C	2.00	82	
Total PeCDD	16	-----	0.072		1,2,3,4,6,7,8-HpCDF-13C	2.00	55	
					1,2,3,4,7,8,9-HpCDF-13C	2.00	71	
1,2,3,4,7,8-HxCDF	2.2	-----	0.087	J	1,2,3,4,6,7,8-HpCDD-13C	2.00	80	
1,2,3,6,7,8-HxCDF	1.2	-----	0.12	J	OCDD-13C	4.00	84	Y
2,3,4,6,7,8-HxCDF	2.4	-----	0.097	J				
1,2,3,7,8,9-HxCDF	0.92	-----	0.097	J	1,2,3,4-TCDD-13C	2.00	NA	
Total HxCDF	53	-----	0.087		1,2,3,7,8,9-HxCDD-13C	2.00	NA	
1,2,3,4,7,8-HxCDD	2.6	-----	0.45	J	2,3,7,8-TCDD-37Cl4	0.20	68	
1,2,3,6,7,8-HxCDD	17	-----	0.31					
1,2,3,7,8,9-HxCDD	8.2	-----	0.46					
Total HxCDD	120	-----	0.31					
1,2,3,4,6,7,8-HpCDF	39	-----	0.18		Total 2,3,7,8-TCDD			
1,2,3,4,7,8,9-HpCDF	2.8	-----	0.29	J	Equivalence: 74 ng/Kg			
Total HpCDF	180	-----	0.18		(Lower-bound - Using MADEP Factors)			
1,2,3,4,6,7,8-HpCDD	500	-----	0.59					
Total HpCDD	940	-----	0.59					
OCDF	83	-----	0.35					
OCDD	3700	-----	0.57					

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).
EMPC = Estimated Maximum Possible Concentration
EDL = Estimated Detection Limit

ND = Not Detected
NA = Not Applicable
NC = Not Calculated

Results reported on a dry weight basis and are valid to no more than 2 significant figures.
J = Estimated value
Y = Calculated using average of daily RFs

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Method 8290 Sample Analysis Results

Client - ESS Laboratory

Client's Sample ID	23B0634-08		
Lab Sample ID	10643743003		
Filename	L230303A_05		
Injected By	SMT		
Total Amount Extracted	10.6 g	Matrix	Solid
% Moisture	23.6	Dilution	NA
Dry Weight Extracted	8.12 g	Collected	02/16/2023 13:30
ICAL ID	L230302	Received	02/22/2023 09:45
CCal Filename(s)	L230302B_18 & L230303A_13	Extracted	02/27/2023 11:50
Method Blank ID	BLANK-104255	Analyzed	03/03/2023 07:58

Native Isomers	Conc ng/Kg	EMPC ng/Kg	EDL ng/Kg		Internal Standards	ng's Added	Percent Recovery
2,3,7,8-TCDF	3.7	-----	0.58		2,3,7,8-TCDF-13C	2.00	84
Total TCDF	48	-----	0.58		2,3,7,8-TCDD-13C	2.00	80
					1,2,3,7,8-PeCDF-13C	2.00	90
2,3,7,8-TCDD	0.39	-----	0.19	J	2,3,4,7,8-PeCDF-13C	2.00	93
Total TCDD	14	-----	0.19		1,2,3,7,8-PeCDD-13C	2.00	96
					1,2,3,4,7,8-HxCDF-13C	2.00	97
1,2,3,7,8-PeCDF	2.1	-----	0.76	J	1,2,3,6,7,8-HxCDF-13C	2.00	89
2,3,4,7,8-PeCDF	3.2	-----	0.035	J	2,3,4,6,7,8-HxCDF-13C	2.00	85
Total PeCDF	37	-----	0.035		1,2,3,7,8,9-HxCDF-13C	2.00	80
					1,2,3,4,7,8-HxCDD-13C	2.00	87
1,2,3,7,8-PeCDD	0.89	-----	0.12	J	1,2,3,6,7,8-HxCDD-13C	2.00	84
Total PeCDD	14	-----	0.12		1,2,3,4,6,7,8-HpCDF-13C	2.00	67
					1,2,3,4,7,8,9-HpCDF-13C	2.00	67
1,2,3,4,7,8-HxCDF	3.2	-----	0.10	J	1,2,3,4,6,7,8-HpCDD-13C	2.00	76
1,2,3,6,7,8-HxCDF	2.7	-----	0.11	J	OCDD-13C	4.00	75 Y
2,3,4,6,7,8-HxCDF	3.1	-----	0.14	J			
1,2,3,7,8,9-HxCDF	0.92	-----	0.068	J	1,2,3,4-TCDD-13C	2.00	NA
Total HxCDF	36	-----	0.068		1,2,3,7,8,9-HxCDD-13C	2.00	NA
1,2,3,4,7,8-HxCDD	1.3	-----	0.26	J	2,3,7,8-TCDD-37Cl4	0.20	69
1,2,3,6,7,8-HxCDD	2.6	-----	0.30	J			
1,2,3,7,8,9-HxCDD	1.9	-----	0.14	J			
Total HxCDD	27	-----	0.14				
1,2,3,4,6,7,8-HpCDF	22	-----	0.62		Total 2,3,7,8-TCDD		
1,2,3,4,7,8,9-HpCDF	-----	1.2	0.55	IJ	Equivalence: 16 ng/Kg		
Total HpCDF	40	-----	0.55		(Lower-bound - Using MADEP Factors)		
1,2,3,4,6,7,8-HpCDD	41	-----	0.23				
Total HpCDD	82	-----	0.23				
OCDF	18	-----	0.44				
OCDD	270	-----	0.40				

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).
EMPC = Estimated Maximum Possible Concentration
EDL = Estimated Detection Limit

ND = Not Detected
NA = Not Applicable
NC = Not Calculated

Results reported on a dry weight basis and are valid to no more than 2 significant figures.
J = Estimated value
I = Isotope ratio out of specification
Y = Calculated using average of daily RFs

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Method 8290 Sample Analysis Results

Client - ESS Laboratory

Client's Sample ID	23B0634-09		
Lab Sample ID	10643743004		
Filename	L230303A_06		
Injected By	SMT		
Total Amount Extracted	10.4 g	Matrix	Solid
% Moisture	19.9	Dilution	NA
Dry Weight Extracted	8.35 g	Collected	02/16/2023 12:00
ICAL ID	L230302	Received	02/22/2023 09:45
CCal Filename(s)	L230302B_18 & L230303A_13	Extracted	02/27/2023 11:50
Method Blank ID	BLANK-104255	Analyzed	03/03/2023 08:43

Native Isomers	Conc ng/Kg	EMPC ng/Kg	EDL ng/Kg		Internal Standards	ng's Added	Percent Recovery	
2,3,7,8-TCDF	0.49	-----	0.12	J	2,3,7,8-TCDF-13C	2.00	88	
Total TCDF	7.0	-----	0.12		2,3,7,8-TCDD-13C	2.00	84	
					1,2,3,7,8-PeCDF-13C	2.00	97	
2,3,7,8-TCDD	0.21	-----	0.089	J	2,3,4,7,8-PeCDF-13C	2.00	102	
Total TCDD	1.7	-----	0.089		1,2,3,7,8-PeCDD-13C	2.00	108	
					1,2,3,4,7,8-HxCDF-13C	2.00	98	
1,2,3,7,8-PeCDF	0.57	-----	0.34	J	1,2,3,6,7,8-HxCDF-13C	2.00	92	
2,3,4,7,8-PeCDF	1.1	-----	0.29	J	2,3,4,6,7,8-HxCDF-13C	2.00	90	
Total PeCDF	18	-----	0.29		1,2,3,7,8,9-HxCDF-13C	2.00	80	
					1,2,3,4,7,8-HxCDD-13C	2.00	97	
1,2,3,7,8-PeCDD	0.39	-----	0.14	J	1,2,3,6,7,8-HxCDD-13C	2.00	95	
Total PeCDD	3.0	-----	0.14	J	1,2,3,4,6,7,8-HpCDF-13C	2.00	77	
					1,2,3,4,7,8,9-HpCDF-13C	2.00	74	
1,2,3,4,7,8-HxCDF	0.81	-----	0.080	J	1,2,3,4,6,7,8-HpCDD-13C	2.00	84	
1,2,3,6,7,8-HxCDF	-----	0.67	0.070	IJ	OCDD-13C	4.00	82	Y
2,3,4,6,7,8-HxCDF	1.2	-----	0.075	J				
1,2,3,7,8,9-HxCDF	0.51	-----	0.038	J	1,2,3,4-TCDD-13C	2.00	NA	
Total HxCDF	16	-----	0.038		1,2,3,7,8,9-HxCDD-13C	2.00	NA	
1,2,3,4,7,8-HxCDD	-----	0.50	0.089	IJ	2,3,7,8-TCDD-37Cl4	0.20	70	
1,2,3,6,7,8-HxCDD	1.1	-----	0.070	J				
1,2,3,7,8,9-HxCDD	0.80	-----	0.093	J				
Total HxCDD	9.3	-----	0.070					
1,2,3,4,6,7,8-HpCDF	6.7	-----	0.15		Total 2,3,7,8-TCDD			
1,2,3,4,7,8,9-HpCDF	0.48	-----	0.19	J	Equivalence: 5.2 ng/Kg			
Total HpCDF	12	-----	0.15		(Lower-bound - Using MADEP Factors)			
1,2,3,4,6,7,8-HpCDD	12	-----	0.16					
Total HpCDD	24	-----	0.16					
OCDF	6.6	-----	0.15	J				
OCDD	95	-----	0.16					

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).
EMPC = Estimated Maximum Possible Concentration
EDL = Estimated Detection Limit

ND = Not Detected
NA = Not Applicable
NC = Not Calculated

Results reported on a dry weight basis and are valid to no more than 2 significant figures.
J = Estimated value
I = Isotope ratio out of specification
Y = Calculated using average of daily RFs

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Method 8290 Sample Analysis Results

Client - ESS Laboratory

Client's Sample ID	23B0634-10		
Lab Sample ID	10643743005		
Filename	L230303A_07		
Injected By	SMT		
Total Amount Extracted	10.8 g	Matrix	Solid
% Moisture	5.7	Dilution	NA
Dry Weight Extracted	10.2 g	Collected	02/16/2023 12:00
ICAL ID	L230302	Received	02/22/2023 09:45
CCal Filename(s)	L230302B_18 & L230303A_13	Extracted	02/27/2023 11:50
Method Blank ID	BLANK-104255	Analyzed	03/03/2023 09:27

Native Isomers	Conc ng/Kg	EMPC ng/Kg	EDL ng/Kg		Internal Standards	ng's Added	Percent Recovery	
2,3,7,8-TCDF	2.8	-----	0.80		2,3,7,8-TCDF-13C	2.00	95	
Total TCDF	140	-----	0.80		2,3,7,8-TCDD-13C	2.00	79	
					1,2,3,7,8-PeCDF-13C	2.00	82	
2,3,7,8-TCDD	0.28	-----	0.064	J	2,3,4,7,8-PeCDF-13C	2.00	86	
Total TCDD	30	-----	0.064		1,2,3,7,8-PeCDD-13C	2.00	105	
					1,2,3,4,7,8-HxCDF-13C	2.00	115	
1,2,3,7,8-PeCDF	-----	47	0.11	P	1,2,3,6,7,8-HxCDF-13C	2.00	89	
2,3,4,7,8-PeCDF	-----	14	0.071	P	2,3,4,6,7,8-HxCDF-13C	2.00	88	
Total PeCDF	140	-----	0.071		1,2,3,7,8,9-HxCDF-13C	2.00	88	
					1,2,3,4,7,8-HxCDD-13C	2.00	96	
1,2,3,7,8-PeCDD	1.5	-----	0.20	J	1,2,3,6,7,8-HxCDD-13C	2.00	90	
Total PeCDD	35	-----	0.20		1,2,3,4,6,7,8-HpCDF-13C	2.00	75	
					1,2,3,4,7,8,9-HpCDF-13C	2.00	75	
1,2,3,4,7,8-HxCDF	9.3	-----	0.080		1,2,3,4,6,7,8-HpCDD-13C	2.00	85	
1,2,3,6,7,8-HxCDF	-----	9.1	0.14	P	OCDD-13C	4.00	67	Y
2,3,4,6,7,8-HxCDF	12	-----	0.10					
1,2,3,7,8,9-HxCDF	-----	2.6	0.077	PJ	1,2,3,4-TCDD-13C	2.00	NA	
Total HxCDF	120	-----	0.077		1,2,3,7,8,9-HxCDD-13C	2.00	NA	
1,2,3,4,7,8-HxCDD	1.9	-----	0.14	J	2,3,7,8-TCDD-37Cl4	0.20	67	
1,2,3,6,7,8-HxCDD	3.4	-----	0.19	J				
1,2,3,7,8,9-HxCDD	2.1	-----	0.14	J				
Total HxCDD	56	-----	0.14					
1,2,3,4,6,7,8-HpCDF	120	-----	0.29		Total 2,3,7,8-TCDD			
1,2,3,4,7,8,9-HpCDF	1.7	-----	0.22	J	Equivalence: 62 ng/Kg			
Total HpCDF	130	-----	0.22		(Lower-bound - Using MADEP Factors)			
1,2,3,4,6,7,8-HpCDD	22	-----	0.15					
Total HpCDD	56	-----	0.15					
OCDF	25	-----	0.31					
OCDD	160	-----	0.13					

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).
EMPC = Estimated Maximum Possible Concentration
EDL = Estimated Detection Limit

ND = Not Detected
NA = Not Applicable
NC = Not Calculated

Results reported on a dry weight basis and are valid to no more than 2 significant figures.
J = Estimated value
P = PCDE Interference
Y = Calculated using average of daily RFs

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Method 8290 Sample Analysis Results

Client - ESS Laboratory

Client's Sample ID	23B0634-11		
Lab Sample ID	10643743006		
Filename	L230303A_08		
Injected By	SMT		
Total Amount Extracted	12.1 g	Matrix	Solid
% Moisture	23.6	Dilution	NA
Dry Weight Extracted	9.26 g	Collected	02/16/2023 12:00
ICAL ID	L230302	Received	02/22/2023 09:45
CCal Filename(s)	L230302B_18 & L230303A_13	Extracted	02/27/2023 11:50
Method Blank ID	BLANK-104255	Analyzed	03/03/2023 10:12

Native Isomers	Conc ng/Kg	EMPC ng/Kg	EDL ng/Kg		Internal Standards	ng's Added	Percent Recovery	
2,3,7,8-TCDF	6.3	-----	0.58		2,3,7,8-TCDF-13C	2.00	83	
Total TCDF	170	-----	0.58		2,3,7,8-TCDD-13C	2.00	79	
					1,2,3,7,8-PeCDF-13C	2.00	92	
2,3,7,8-TCDD	0.51	-----	0.30	J	2,3,4,7,8-PeCDF-13C	2.00	94	
Total TCDD	21	-----	0.30		1,2,3,7,8-PeCDD-13C	2.00	98	
					1,2,3,4,7,8-HxCDF-13C	2.00	94	
1,2,3,7,8-PeCDF	5.1	-----	0.19	J	1,2,3,6,7,8-HxCDF-13C	2.00	89	
2,3,4,7,8-PeCDF	9.9	-----	0.22		2,3,4,6,7,8-HxCDF-13C	2.00	87	
Total PeCDF	110	-----	0.19		1,2,3,7,8,9-HxCDF-13C	2.00	78	
					1,2,3,4,7,8-HxCDD-13C	2.00	88	
1,2,3,7,8-PeCDD	1.3	-----	0.18	J	1,2,3,6,7,8-HxCDD-13C	2.00	86	
Total PeCDD	21	-----	0.18		1,2,3,4,6,7,8-HpCDF-13C	2.00	72	
					1,2,3,4,7,8,9-HpCDF-13C	2.00	64	
1,2,3,4,7,8-HxCDF	8.0	-----	0.13		1,2,3,4,6,7,8-HpCDD-13C	2.00	74	
1,2,3,6,7,8-HxCDF	6.4	-----	0.084		OCDD-13C	4.00	68	Y
2,3,4,6,7,8-HxCDF	7.9	-----	0.084					
1,2,3,7,8,9-HxCDF	2.5	-----	0.14	J	1,2,3,4-TCDD-13C	2.00	NA	
Total HxCDF	81	-----	0.084		1,2,3,7,8,9-HxCDD-13C	2.00	NA	
1,2,3,4,7,8-HxCDD	1.2	-----	0.42	J	2,3,7,8-TCDD-37Cl4	0.20	69	
1,2,3,6,7,8-HxCDD	2.6	-----	0.099	J				
1,2,3,7,8,9-HxCDD	1.9	-----	0.11	J				
Total HxCDD	28	-----	0.099					
1,2,3,4,6,7,8-HpCDF	26	-----	0.21		Total 2,3,7,8-TCDD			
1,2,3,4,7,8,9-HpCDF	2.8	-----	0.30	J	Equivalence: 27 ng/Kg			
Total HpCDF	42	-----	0.21		(Lower-bound - Using MADEP Factors)			
1,2,3,4,6,7,8-HpCDD	33	-----	0.15					
Total HpCDD	59	-----	0.15					
OCDF	14	-----	0.28					
OCDD	160	-----	0.30					

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).
EMPC = Estimated Maximum Possible Concentration
EDL = Estimated Detection Limit

ND = Not Detected
NA = Not Applicable
NC = Not Calculated

Results reported on a dry weight basis and are valid to no more than 2 significant figures.
J = Estimated value
Y = Calculated using average of daily RFs

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Method 8290 Sample Analysis Results

Client - ESS Laboratory

Client's Sample ID	23B0634-12		
Lab Sample ID	10643743007		
Filename	L230303A_09		
Injected By	SMT		
Total Amount Extracted	10.2 g	Matrix	Solid
% Moisture	13.3	Dilution	NA
Dry Weight Extracted	8.87 g	Collected	02/16/2023 14:30
ICAL ID	L230302	Received	02/22/2023 09:45
CCal Filename(s)	L230302B_18 & L230303A_13	Extracted	02/27/2023 11:50
Method Blank ID	BLANK-104255	Analyzed	03/03/2023 10:56

Native Isomers	Conc ng/Kg	EMPC ng/Kg	EDL ng/Kg		Internal Standards	ng's Added	Percent Recovery	
2,3,7,8-TCDF	ND	-----	0.29		2,3,7,8-TCDF-13C	2.00	84	
Total TCDF	2.8	-----	0.29		2,3,7,8-TCDD-13C	2.00	80	
					1,2,3,7,8-PeCDF-13C	2.00	100	
2,3,7,8-TCDD	ND	-----	0.069		2,3,4,7,8-PeCDF-13C	2.00	99	
Total TCDD	ND	-----	0.069		1,2,3,7,8-PeCDD-13C	2.00	107	
					1,2,3,4,7,8-HxCDF-13C	2.00	95	
1,2,3,7,8-PeCDF	ND	-----	0.23		1,2,3,6,7,8-HxCDF-13C	2.00	88	
2,3,4,7,8-PeCDF	0.35	-----	0.18	J	2,3,4,6,7,8-HxCDF-13C	2.00	89	
Total PeCDF	7.3	-----	0.18		1,2,3,7,8,9-HxCDF-13C	2.00	79	
					1,2,3,4,7,8-HxCDD-13C	2.00	93	
1,2,3,7,8-PeCDD	-----	0.19	0.12	IJ	1,2,3,6,7,8-HxCDD-13C	2.00	88	
Total PeCDD	1.0	-----	0.12	J	1,2,3,4,6,7,8-HpCDF-13C	2.00	74	
					1,2,3,4,7,8,9-HpCDF-13C	2.00	69	
1,2,3,4,7,8-HxCDF	0.53	-----	0.070	J	1,2,3,4,6,7,8-HpCDD-13C	2.00	78	
1,2,3,6,7,8-HxCDF	0.37	-----	0.073	J	OCDD-13C	4.00	74	Y
2,3,4,6,7,8-HxCDF	-----	0.49	0.067	IJ				
1,2,3,7,8,9-HxCDF	0.29	-----	0.053	J	1,2,3,4-TCDD-13C	2.00	NA	
Total HxCDF	7.4	-----	0.053		1,2,3,7,8,9-HxCDD-13C	2.00	NA	
1,2,3,4,7,8-HxCDD	0.39	-----	0.23	J	2,3,7,8-TCDD-37Cl4	0.20	66	
1,2,3,6,7,8-HxCDD	0.66	-----	0.090	J				
1,2,3,7,8,9-HxCDD	0.52	-----	0.043	J				
Total HxCDD	6.7	-----	0.043					
1,2,3,4,6,7,8-HpCDF	3.4	-----	0.074	J	Total 2,3,7,8-TCDD			
1,2,3,4,7,8,9-HpCDF	ND	-----	0.11		Equivalence: 3.4 ng/Kg			
Total HpCDF	6.8	-----	0.074		(Lower-bound - Using MADEP Factors)			
1,2,3,4,6,7,8-HpCDD	16	-----	0.19					
Total HpCDD	32	-----	0.19					
OCDF	5.0	-----	0.21	J				
OCDD	140	-----	0.18					

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).
EMPC = Estimated Maximum Possible Concentration
EDL = Estimated Detection Limit

ND = Not Detected
NA = Not Applicable
NC = Not Calculated

Results reported on a dry weight basis and are valid to no more than 2 significant figures.
J = Estimated value
I = Isotope ratio out of specification
Y = Calculated using average of daily RFs

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Method 8290 Sample Analysis Results

Client - ESS Laboratory

Client's Sample ID	23B0634-13		
Lab Sample ID	10643743008		
Filename	L230303A_10		
Injected By	SMT		
Total Amount Extracted	10.2 g	Matrix	Solid
% Moisture	20.3	Dilution	NA
Dry Weight Extracted	8.14 g	Collected	02/16/2023 14:30
ICAL ID	L230302	Received	02/22/2023 09:45
CCal Filename(s)	L230302B_18 & L230303A_13	Extracted	02/27/2023 11:50
Method Blank ID	BLANK-104255	Analyzed	03/03/2023 11:41

Native Isomers	Conc ng/Kg	EMPC ng/Kg	EDL ng/Kg		Internal Standards	ng's Added	Percent Recovery	
2,3,7,8-TCDF	34	-----	0.15		2,3,7,8-TCDF-13C	2.00	77	
Total TCDF	560	-----	0.15		2,3,7,8-TCDD-13C	2.00	76	
					1,2,3,7,8-PeCDF-13C	2.00	81	
2,3,7,8-TCDD	3.3	-----	0.061		2,3,4,7,8-PeCDF-13C	2.00	85	
Total TCDD	120	-----	0.061		1,2,3,7,8-PeCDD-13C	2.00	93	
					1,2,3,4,7,8-HxCDF-13C	2.00	87	
1,2,3,7,8-PeCDF	9.6	-----	2.9		1,2,3,6,7,8-HxCDF-13C	2.00	79	
2,3,4,7,8-PeCDF	22	-----	0.88		2,3,4,6,7,8-HxCDF-13C	2.00	75	
Total PeCDF	230	-----	0.88		1,2,3,7,8,9-HxCDF-13C	2.00	70	
					1,2,3,4,7,8-HxCDD-13C	2.00	76	
1,2,3,7,8-PeCDD	3.1	-----	0.28	J	1,2,3,6,7,8-HxCDD-13C	2.00	76	
Total PeCDD	51	-----	0.28		1,2,3,4,6,7,8-HpCDF-13C	2.00	58	
					1,2,3,4,7,8,9-HpCDF-13C	2.00	56	
1,2,3,4,7,8-HxCDF	6.2	-----	0.090		1,2,3,4,6,7,8-HpCDD-13C	2.00	64	
1,2,3,6,7,8-HxCDF	5.6	-----	0.11	J	OCDD-13C	4.00	55	Y
2,3,4,6,7,8-HxCDF	8.7	-----	0.11					
1,2,3,7,8,9-HxCDF	1.5	-----	0.13	J	1,2,3,4-TCDD-13C	2.00	NA	
Total HxCDF	110	-----	0.090		1,2,3,7,8,9-HxCDD-13C	2.00	NA	
1,2,3,4,7,8-HxCDD	1.4	-----	0.13	J	2,3,7,8-TCDD-37Cl4	0.20	61	
1,2,3,6,7,8-HxCDD	3.3	-----	0.11	J				
1,2,3,7,8,9-HxCDD	2.6	-----	0.11	J				
Total HxCDD	42	-----	0.11					
1,2,3,4,6,7,8-HpCDF	46	-----	0.15		Total 2,3,7,8-TCDD			
1,2,3,4,7,8,9-HpCDF	1.4	-----	0.25	J	Equivalence: 54 ng/Kg			
Total HpCDF	57	-----	0.15		(Lower-bound - Using MADEP Factors)			
1,2,3,4,6,7,8-HpCDD	19	-----	0.17					
Total HpCDD	39	-----	0.17					
OCDF	24	-----	0.34					
OCDD	80	-----	0.19					

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).
EMPC = Estimated Maximum Possible Concentration
EDL = Estimated Detection Limit

ND = Not Detected
NA = Not Applicable
NC = Not Calculated

Results reported on a dry weight basis and are valid to no more than 2 significant figures.
J = Estimated value
Y = Calculated using average of daily RFs

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Method 8290 Sample Analysis Results

Client - ESS Laboratory

Client's Sample ID	23B0634-14		
Lab Sample ID	10643743009		
Filename	L230303A_11		
Injected By	SMT		
Total Amount Extracted	10.6 g	Matrix	Solid
% Moisture	21.6	Dilution	NA
Dry Weight Extracted	8.35 g	Collected	02/16/2023 14:30
ICAL ID	L230302	Received	02/22/2023 09:45
CCal Filename(s)	L230302B_18 & L230303A_13	Extracted	02/27/2023 11:50
Method Blank ID	BLANK-104255	Analyzed	03/03/2023 12:25

Native Isomers	Conc ng/Kg	EMPC ng/Kg	EDL ng/Kg		Internal Standards	ng's Added	Percent Recovery	
2,3,7,8-TCDF	8.5	-----	0.36		2,3,7,8-TCDF-13C	2.00	62	
Total TCDF	300	-----	0.36		2,3,7,8-TCDD-13C	2.00	59	
					1,2,3,7,8-PeCDF-13C	2.00	72	
2,3,7,8-TCDD	0.69	-----	0.28	J	2,3,4,7,8-PeCDF-13C	2.00	75	
Total TCDD	26	-----	0.28		1,2,3,7,8-PeCDD-13C	2.00	77	
					1,2,3,4,7,8-HxCDF-13C	2.00	73	
1,2,3,7,8-PeCDF	-----	4.7	0.33	PJ	1,2,3,6,7,8-HxCDF-13C	2.00	67	
2,3,4,7,8-PeCDF	11	-----	0.17		2,3,4,6,7,8-HxCDF-13C	2.00	68	
Total PeCDF	130	-----	0.17		1,2,3,7,8,9-HxCDF-13C	2.00	59	
					1,2,3,4,7,8-HxCDD-13C	2.00	68	
1,2,3,7,8-PeCDD	1.4	-----	0.21	J	1,2,3,6,7,8-HxCDD-13C	2.00	67	
Total PeCDD	19	-----	0.21		1,2,3,4,6,7,8-HpCDF-13C	2.00	58	
					1,2,3,4,7,8,9-HpCDF-13C	2.00	52	
1,2,3,4,7,8-HxCDF	5.8	-----	0.12	J	1,2,3,4,6,7,8-HpCDD-13C	2.00	59	
1,2,3,6,7,8-HxCDF	5.4	-----	0.14	J	OCDD-13C	4.00	58	Y
2,3,4,6,7,8-HxCDF	7.0	-----	0.088					
1,2,3,7,8,9-HxCDF	1.0	-----	0.094	J	1,2,3,4-TCDD-13C	2.00	NA	
Total HxCDF	74	-----	0.088		1,2,3,7,8,9-HxCDD-13C	2.00	NA	
1,2,3,4,7,8-HxCDD	1.3	-----	0.18	J	2,3,7,8-TCDD-37Cl4	0.20	65	
1,2,3,6,7,8-HxCDD	-----	0.80	0.10	IJ				
1,2,3,7,8,9-HxCDD	-----	0.53	0.085	IJ				
Total HxCDD	11	-----	0.085					
1,2,3,4,6,7,8-HpCDF	33	-----	0.14		Total 2,3,7,8-TCDD			
1,2,3,4,7,8,9-HpCDF	0.63	-----	0.32	J	Equivalence: 27 ng/Kg			
Total HpCDF	37	-----	0.14		(Lower-bound - Using MADEP Factors)			
1,2,3,4,6,7,8-HpCDD	3.3	-----	0.16	J				
Total HpCDD	7.5	-----	0.16					
OCDF	4.0	-----	0.21	J				
OCDD	10	-----	0.30	J				

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).
EMPC = Estimated Maximum Possible Concentration
EDL = Estimated Detection Limit

ND = Not Detected
NA = Not Applicable
NC = Not Calculated

Results reported on a dry weight basis and are valid to no more than 2 significant figures.
J = Estimated value
P = PCDE Interference
I = Isotope ratio out of specification
Y = Calculated using average of daily RFs

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Method 8290 Blank Analysis Results

Lab Sample Name	DFBLKVS		
Lab Sample ID	BLANK-104255	Matrix	Solid
Filename	L230301B_07	Dilution	NA
Total Amount Extracted	10.4 g	Extracted	02/27/2023 11:50
ICAL ID	L230225	Analyzed	03/01/2023 19:06
CCal Filename(s)	L230301A_17 & L230301B_17	Injected By	SMT

Native Isomers	Conc ng/Kg	EMPC ng/Kg	EDL ng/Kg		Internal Standards	ng's Added	Percent Recovery	
2,3,7,8-TCDF	ND	-----	0.100		2,3,7,8-TCDF-13C	2.00	88	
Total TCDF	ND	-----	0.100		2,3,7,8-TCDD-13C	2.00	70	
					1,2,3,7,8-PeCDF-13C	2.00	98	
2,3,7,8-TCDD	ND	-----	0.12		2,3,4,7,8-PeCDF-13C	2.00	92	
Total TCDD	ND	-----	0.12		1,2,3,7,8-PeCDD-13C	2.00	90	
					1,2,3,4,7,8-HxCDF-13C	2.00	100	
1,2,3,7,8-PeCDF	ND	-----	0.069		1,2,3,6,7,8-HxCDF-13C	2.00	93	
2,3,4,7,8-PeCDF	ND	-----	0.069		2,3,4,6,7,8-HxCDF-13C	2.00	91	
Total PeCDF	ND	-----	0.069		1,2,3,7,8,9-HxCDF-13C	2.00	88	
					1,2,3,4,7,8-HxCDD-13C	2.00	82	
1,2,3,7,8-PeCDD	ND	-----	0.10		1,2,3,6,7,8-HxCDD-13C	2.00	83	
Total PeCDD	ND	-----	0.10		1,2,3,4,6,7,8-HpCDF-13C	2.00	61	
					1,2,3,4,7,8,9-HpCDF-13C	2.00	58	
1,2,3,4,7,8-HxCDF	ND	-----	0.075		1,2,3,4,6,7,8-HpCDD-13C	2.00	80	Y
1,2,3,6,7,8-HxCDF	ND	-----	0.050		OCDD-13C	4.00	63	Y
2,3,4,6,7,8-HxCDF	ND	-----	0.066					
1,2,3,7,8,9-HxCDF	ND	-----	0.11		1,2,3,4-TCDD-13C	2.00	NA	
Total HxCDF	ND	-----	0.050		1,2,3,7,8,9-HxCDD-13C	2.00	NA	
1,2,3,4,7,8-HxCDD	-----	0.20	0.084	IJ	2,3,7,8-TCDD-37Cl4	0.20	73	
1,2,3,6,7,8-HxCDD	ND	-----	0.099					
1,2,3,7,8,9-HxCDD	ND	-----	0.10					
Total HxCDD	ND	-----	0.084					
1,2,3,4,6,7,8-HpCDF	ND	-----	0.12		Total 2,3,7,8-TCDD			
1,2,3,4,7,8,9-HpCDF	ND	-----	0.19		Equivalence: 0.043 ng/Kg			
Total HpCDF	ND	-----	0.12		(Lower-bound - Using MADEP Factors)			
1,2,3,4,6,7,8-HpCDD	-----	0.21	0.18	IJ				
Total HpCDD	0.21	-----	0.18	J				
OCDF	ND	-----	0.33					
OCDD	ND	-----	0.65					

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).
EMPC = Estimated Maximum Possible Concentration
EDL = Estimated Detection Limit

Results reported on a total weight basis and are valid to no more than 2 significant figures.
J = Estimated value
I = Isotope ratio out of specification
Y = Calculated using average of daily RFs

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Method 8290 Laboratory Control Spike Results

Lab Sample ID	LCS-104256		
Filename	L230301B_01	Matrix	Solid
Total Amount Extracted	10.2 g	Dilution	NA
ICAL ID	L230225	Extracted	02/27/2023 11:50
CCal Filename(s)	L230301A_17 & L230301B_17	Analyzed	03/01/2023 14:39
Method Blank ID	BLANK-104255	Injected By	SMT

Native Isomers	Qs (ng)	Qm (ng)	% Rec.	Internal Standards	ng's Added	Percent Recovery
2,3,7,8-TCDF	0.20	0.21	104	2,3,7,8-TCDF-13C	2.0	86
Total TCDF				2,3,7,8-TCDD-13C	2.0	68
				1,2,3,7,8-PeCDF-13C	2.0	93
2,3,7,8-TCDD	0.20	0.22	111	2,3,4,7,8-PeCDF-13C	2.0	90
Total TCDD				1,2,3,7,8-PeCDD-13C	2.0	85
				1,2,3,4,7,8-HxCDF-13C	2.0	100
1,2,3,7,8-PeCDF	1.0	1.0	101	1,2,3,6,7,8-HxCDF-13C	2.0	95
2,3,4,7,8-PeCDF	1.0	1.0	101	2,3,4,6,7,8-HxCDF-13C	2.0	93
Total PeCDF				1,2,3,7,8,9-HxCDF-13C	2.0	81
				1,2,3,4,7,8-HxCDD-13C	2.0	86
1,2,3,7,8-PeCDD	1.0	0.99	99	1,2,3,6,7,8-HxCDD-13C	2.0	88
Total PeCDD				1,2,3,4,6,7,8-HpCDF-13C	2.0	65
				1,2,3,4,7,8,9-HpCDF-13C	2.0	61
1,2,3,4,7,8-HxCDF	1.0	1.0	103	1,2,3,4,6,7,8-HpCDD-13C	2.0	84 Y
1,2,3,6,7,8-HxCDF	1.0	1.0	105	OCDD-13C	4.0	67 Y
2,3,4,6,7,8-HxCDF	1.0	1.0	103			
1,2,3,7,8,9-HxCDF	1.0	1.0	101	1,2,3,4-TCDD-13C	2.0	NA
Total HxCDF				1,2,3,7,8,9-HxCDD-13C	2.0	NA
1,2,3,4,7,8-HxCDD	1.0	1.1	111	2,3,7,8-TCDD-37Cl4	0.20	74
1,2,3,6,7,8-HxCDD	1.0	0.99	99			
1,2,3,7,8,9-HxCDD	1.0	0.95	95			
Total HxCDD						
1,2,3,4,6,7,8-HpCDF	1.0	1.1	107			
1,2,3,4,7,8,9-HpCDF	1.0	1.0	104			
Total HpCDF						
1,2,3,4,6,7,8-HpCDD	1.0	0.98	98			
Total HpCDD						
OCDF	2.0	2.5	125			
OCDD	2.0	2.3	113			

Qs = Quantity Spiked
Qm = Quantity Measured
Rec. = Recovery (Expressed as Percent)
R = Recovery outside of target range

Y = RF averaging used in calculations
Nn = Value obtained from additional analysis
NA = Not Applicable
* = See Discussion

REPORT OF LABORATORY ANALYSIS

ESS Laboratory Sample and Cooler Receipt Checklist

Client: Weston and Sampson Engineers, Inc - TB

Shipped/Delivered Via: ESS Courier

ESS Project ID: 23B0634
Date Received: 2/17/2023
Project Due Date: 2/27/2023
Days for Project: 5 Day

1. Air bill manifest present? No
   Air No.: NA
2. Were custody seals present? No
3. Is radiation count <100 CPM? Yes
4. Is a Cooler Present? Yes
   Temp: -0.4 Iced with: Ice
5. Was COC signed and dated by client? Yes
6. Does COC match bottles? Yes
7. Is COC complete and correct? Yes
8. Were samples received intact? Yes
9. **Were labs informed about short holds & rushes?** Yes / No / NA
10. Were any analyses received outside of hold time? Yes / No

11. Any Subcontracting needed? Yes / No
    ESS Sample IDs:
    Analysis:
    TAT:
12. Were VOAs received? Yes / No
    a. Air bubbles in aqueous VOAs? Yes / No
    b. Does methanol cover soil completely? Yes / No / NA

13. Are the samples properly preserved? Yes / No
    a. If metals preserved upon receipt: Date: Time: By/Acid Lot#:
    b. Low Level VOA vials frozen: Date: Time: By:

Sample Receiving Notes:

samples split for sub analysis

14. Was there a need to contact Project Manager? Yes / No
    a. Was there a need to contact the client? Yes / No
    Who was contacted? Date: Time: By:

Resolution:

Sample Number	Container ID	Proper Container	Air Bubbles Present	Sufficient Volume	Container Type	Preservative	Record pH (Cyanide and 608 Pesticides)
1	401152	Yes	N/A	Yes	8 oz jar	NP	
1	401153	Yes	N/A	Yes	8 oz jar	NP	
2	401154	Yes	N/A	Yes	8 oz jar	NP	
2	401155	Yes	N/A	Yes	8 oz jar	NP	
2	401191	Yes	N/A	Yes	2 oz. Jar	NP	
3	401156	Yes	N/A	Yes	8 oz jar	NP	
3	401270	Yes	N/A	Yes	4 oz. Jar	NP	
4	401158	Yes	N/A	Yes	8 oz jar	NP	
4	401159	Yes	N/A	Yes	8 oz jar	NP	
4	401164	Yes	N/A	Yes	8 oz jar	NP	
5	401160	Yes	N/A	Yes	8 oz jar	NP	
5	401161	Yes	N/A	Yes	8 oz jar	NP	
5	401165	Yes	N/A	Yes	8 oz jar	NP	
6	401162	Yes	N/A	Yes	8 oz jar	NP	
6	401163	Yes	N/A	Yes	8 oz jar	NP	
7	401166	Yes	N/A	Yes	8 oz jar	NP	
7	401168	Yes	N/A	Yes	2 oz. Jar	NP	

ESS Laboratory Sample and Cooler Receipt Checklist

Client: Weston and Sampson Engineers, Inc - TB

ESS Project ID: 23B0634
Date Received: 2/17/2023

7	401271	Yes	N/A	Yes	4 oz. Jar	NP
8	401167	Yes	N/A	Yes	8 oz jar	NP
8	401169	Yes	N/A	Yes	2 oz. Jar	NP
8	401272	Yes	N/A	Yes	4 oz. Jar	NP
9	401170	Yes	N/A	Yes	8 oz jar	NP
9	401202	Yes	N/A	Yes	8 oz jar	NP
10	401171	Yes	N/A	Yes	8 oz jar	NP
10	401181	Yes	N/A	Yes	2 oz. Jar	NP
10	401273	Yes	N/A	Yes	4 oz. Jar	NP
11	401172	Yes	N/A	Yes	8 oz jar	NP
11	401182	Yes	N/A	Yes	2 oz. Jar	NP
11	401274	Yes	N/A	Yes	4 oz. Jar	NP
12	401173	Yes	N/A	Yes	8 oz jar	NP
12	401183	Yes	N/A	Yes	8 oz jar	NP
13	401174	Yes	N/A	Yes	8 oz jar	NP
13	401184	Yes	N/A	Yes	8 oz jar	NP
13	401275	Yes	N/A	Yes	4 oz. Jar	NP
14	401175	Yes	N/A	Yes	8 oz jar	NP
14	401185	Yes	N/A	Yes	8 oz jar	NP
15	401176	Yes	N/A	Yes	8 oz jar	NP
15	401203	Yes	N/A	Yes	8 oz jar	NP
16	401177	Yes	N/A	Yes	8 oz jar	NP
16	401186	Yes	N/A	Yes	8 oz jar	NP
17	401178	Yes	N/A	Yes	8 oz jar	NP
17	401187	Yes	N/A	Yes	8 oz jar	NP
18	401179	Yes	N/A	Yes	8 oz jar	NP
18	401190	Yes	N/A	Yes	2 oz. Jar	NP
18	401276	Yes	N/A	Yes	4 oz. Jar	NP
19	401188	Yes	N/A	Yes	8 oz jar	NP
19	401189	Yes	N/A	Yes	8 oz jar	NP

2nd Review

Were all containers scanned into storage/lab? Initials C

Are barcode labels on correct containers? (Yes) No

Are all Flashpoint stickers attached/container ID # circled? Yes / No / NA

Are all Hex Chrome stickers attached? Yes / No / NA

Are all QC stickers attached? Yes / No / NA

Are VOA stickers attached if bubbles noted? Yes / No / NA

Completed By: _____ Date & Time: 11:46 2/21/23

Reviewed By: Taylor Davis Date & Time: 1430 2/21/23.

665

23B0634

ESS LABORATORY

185 Frances Avenue
Cranston, RI 02910
Phone: 401-461-7181
Fax: 401-461-4486
www.esslaboratory.com

CHAIN OF CUSTODY

ESS Lab # 0634 Page 1 of 2

Turn Time (Days) ☐ >5 ☒ 5 ☐ 4 ☐ 3 ☐ 2 ☐ 1 ☐ Same Day

Regulatory State: MA Criteria: PCS-1

Is this project for any of the following?:
☐ CT RCP ☒ MA MCP ☐ RGP ☐ Permit ☐ 401 WQ

ELECTRONIC DELIVERABLES (Final Reports are PDF)
☒ Limit Checker ☒ State Forms ☐ EQuIS
☐ Excel ☐ State Upload ☒ Enviro Data
☐ CLP-Like Package ☐ Other (Specify) →

CLIENT INFORMATION

Client: WESTON + SAMPSON
Address: 55 WALKERS BROOK DRIVE READING
Phone: 978 818 9212
Email Distribution List: KOSKAL@WSEINC.COM BHUNIAP@WSEINC.COM

PROJECT INFORMATION

Project Name: CLAXTON FIELD
Project Location: NEEDHAM MA
Project Number:
Project Manager: L. KOSKA
Bill to: L. KOSKA
PO#:
Quote#: SEE T. BYRNE QUOTE

Client acknowledges that sampling is compliant with all EPA / State regulatory programs 1/31/2023

REQUESTED ANALYSES

ESS Lab ID	Collection Date	Collection Time	Sample Type	Sample Matrix	Sample ID	MCP 14 METALS	ASBESTOS (PLM)	PAHs	DIOXINS	EPH RANGE	VPH w/MADEP	LK	Total Number of Bottles
1	2/16/23	1045	G	SOIL	B-201 (0-1)	X	X						2
2	"	1045	"	"	B-201 (2-4)	X	X						3
3	"	1045	"	"	B-201 (4-6)	X	X						1
4	"	1015	"	"	B-202 (0-1)	X	X						3
5	"	1015	"	"	B-202 (2-4)	X	X						3
6	"	1330	"	"	B-203 (0-1)	X	X	X	X				2
7	"	1330	"	"	B-203 (2-4)	X	X	X	X				2
8	"	1330	"	"	B-203 (4-6)	X	X	X	X				2
9	"	1200	"	"	B-204 (0-1)	X	X	X	X				2
10	"	1200	"	"	B-204 (2-4)	X	X	X	X				2

Container Type: AC-Air Cassette AG-Amber Glass B-BOD Bottle C-Cubitainer J-Jar O-Other P-Poly S-Sterile V-Vial
Container Volume: 1-100 mL 2-2.5 gal 3-250 mL 4-300 mL 5-500 mL 6-1L 7-VOA 8-2 oz 9-4 oz 10-8 oz 11-Other*
Preservation Code: 1-Non Preserved 2-HCl 3-H2SO4 4-HNO3 5-NaOH 6-Methanol 7-Na2S2O3 8-ZnAce, NaOH 9-NH4Cl 10-DI H2O 11-Other*

Sampled by: MCGUIRE

Chain needs to be filled out neatly and completely for on time delivery.

Laboratory Use Only
Cooler Temperature (°C): _____

Comments: * Please specify "Other" preservative and containers types in this space

All samples submitted are subject to ESS Laboratory's payment terms and conditions.

Dissolved Filtration
☐ Lab Filter

Relinquished by (Signature)	Date	Time	Received by (Signature)	Relinquished by (Signature)	Date	Time	Received by (Signature)
[signature]	2/16/23	1730	[signature]				

Relinquished by (Signature)	Date	Time	Received by (Signature)	Relinquished by (Signature)	Date	Time	Received by (Signature)

2380634

CHAIN OF CUSTODY

ESS Lab # 1034 | Page 2 of 2

ESS LABORATORY
185 Frances Avenue
Cranston, RI 02910
Phone: 401-461-7181
Fax: 401-461-4486
www.esslaboratory.com

Turn Time (Days): ☐ >5 ☒ 5 ☐ 4 ☐ 3 ☐ 2 ☐ 1 ☐ Same Day
Regulatory State: MA Criteria: RCS-1
Is this project for any of the following?: ☐ CT RCP ☒ MA MCP ☐ RGP ☐ Permit ☐ 401 WQ

ELECTRONIC DELIVERABLES (Final Reports are PDF)
☐ Limit Checker ☒ State Forms ☐ EQuIS
☐ Excel ☐ State Upload ☒ Enviro Data
☐ CLP-Like Package ☐ Other (Specify) →

CLIENT INFORMATION

Client: WESTON + SAMPSON
Address: 55 WALKERS BROOK DRIVE READING MA
Phone: 978 218 9212
Email Distribution List: KOSKAL@WSEINC.COM, BHUNIAP@WSEINC.COM

PROJECT INFORMATION

Project Name: CLAXTON FIELD
Project Location: NEEDHAM, MA
Project Number:
Project Manager: L. KOSKA
Bill to: 1' "
PO#:
Quote#: SEE T. BYRNE QUOTE 13773

Client acknowledges that sampling is compliant with all EPA / State regulatory programs

REQUESTED ANALYSES

ESS Lab ID	Collection Date	Collection Time	Sample Type	Sample Matrix	Sample ID	MCP 14 METALS	ASBESTOS (PLM)	PAHs	DIOXINS	EPH Ranges	VPH w/ TAKE.	Total Number of Bottles
11	2/16/23	1200	G	S	B-204 (4-6)	X	X	X	X			2
12		1430			B-205 (0-1)	X	X	X	X			2
13		1430			B-205 (2-4)	X	X	X	X			2
14		1430			B-205 (4-6)	X	X	X	X			2
15		1515			B-206 (0-1)	X	X	X				2
16		1515			B-206 (2-4)	X	X	X				2
17		1515			B-206 (4-5)	X	X	X				2
18		1530			B-207 F (4-6)	X	X	X				2
19		1400		↓	CF-STOCKPILE	X	X	X				2
				TO 2/17/23								

Container Type: AC-Air Cassette AG-Amber Glass B-BOD Bottle C-Cubitainer J-Jar O-Other P-Poly S-Sterile V-Vial
Container Volume: 1-100 mL 2-2.5 gal 3-250 mL 4-300 mL 5-500 mL 6-1L 7-VOA 8-2 oz 9-4 oz 10-8 oz 11-Other*
Preservation Code: 1-Non Preserved 2-HCl 3-H2SO4 4-HNO3 5-NaOH 6-Methanol 7-Na2S2O3 8-ZnAce, NaOH 9-NH4Cl 10-DI H2O 11-Other*

Sampled by: MCBURKE

Chain needs to be filled out neatly and completely for on time delivery.

Laboratory Use Only
Cooler Temperature (°C): _____

Comments: * Please specify "Other" preservative and containers types in this space

All samples submitted are subject to ESS Laboratory's payment terms and conditions.

Dissolved Filtration
☐ Lab Filter

Relinquished by (Signature)	Date	Time	Received by (Signature)	Relinquished by (Signature)	Date	Time	Received by (Signature)
[signature]	2/16/23	1730	[signature] 2/17/23 12:44				