55 Walkers Brook Drive, Suite 100, Reading, MA 01867
Tel: 978.532.1900

July 31, 2020

Massachusetts Department of Environmental Protection
Northeast Regional Office
Bureau of Waste Site Cleanup
205B Lowell Street
Wilmington, Massachusetts 01887

Re: **Immediate Response Action (IRA) Plan**
618R Waverly Street, Framingham, MA (Parcel IDs 134-64-7867 and 134-64-9905)
Release Tracking Number (RTN) 3-36304

Dear Sir or Madam:

Weston & Sampson Engineers, Inc. (Weston & Sampson), on behalf of the City of Framingham, Massachusetts (the City), has prepared this Immediate Response Action (IRA) Plan for Release Tracking Number (RTN) 3-36304 for the two above-referenced properties, one with an address of 618R Waverly Street, located in Framingham, Massachusetts (collectively, the Site). The Site consists of two parcels: a larger parcel with Tax ID 134-64-7867 (currently known and numbered as 618R Waverly Street) and a smaller parcel with Tax ID 134-64-9905 (no address). The City owns the two parcels, which together cover approximately 2.04 acres of vacant land comprised primarily of woodlands and wetland, with a paved area to the north and a paved area to the west. MassDEP assigned RTN 3-36304 to an approximately 500-square-foot portion of the Site after the City reported elevated concentrations of lead in the shallow soil on June 3, 2020, as described below.

The RTN is associated with the detection of lead in shallow soil at concentrations indicative of an Imminent Hazard (IH); this finding is referred to as a "release," as described by the Massachusetts Contingency Plan (MCP) at 310 CMR 40.0950. In accordance with the MCP at 310 CMR 40.0311(7), the City of Framingham orally notified the Massachusetts Department of Environmental Protection (MassDEP) of this 2-hour notification condition at 11:27 a.m. on June 3, 2020. The source of the release is unknown but is likely associated with fill material and/or past uses of the property and surrounding properties.

This IRA Plan was prepared in accordance with the MCP at 310 CMR 40.0424(1). The applicable Bureau of Waste Site Cleanup (BWSC) forms, BWSC-103 (the written Release Notification Form, or RNF) and BWSC-105 (IRA Plan Transmittal form), have been submitted electronically using eDEP. Copies of public notification letters to the Mayor of Framingham and the Framingham Health Department/Board of Health are included as an attachment to this report.

The content of this IRA Plan has been structured to address the specific requirements set forth in 310 CMR 40.0424(1)(a) through (j). The MCP requirements for the IRA Plan are presented below in ***bold italicized text*** along with the responses in plain text.

40.0424 (1)(a) – "the name, address, telephone number and relationship to the site of the person assuming responsibility for conducting the Immediate Response Action;"

The party assuming responsibility for conducting the IRA, and the current owner of the Site is:

Dr. Yvonne M. Spicer, Mayor
City of Framingham
150 Concord Street
Framingham, Massachusetts 01702
mayor@framinghamma.gov
(508) 532-5400

This information is also provided on the Release Notification Transmittal Form (BWSC-103), and the IRA Transmittal Form (BWSC-105) filed electronically through eDEP.

40.0424(1)(b) – "a description of the release or threat of release, site conditions and surrounding receptors;"

Site Location and Description

The release area with elevated lead concentrations in shallow soil consists of an approximately 500-square-foot area of the Site.). The property at 618R Waverly Street is a vacant property owned by City comprising approximately 1.66 acres. The adjacent approximately 0.38-acre parcel to the east is also owned by the City and identified as Parcel 134-64-9905; the release area covers a portion of each parcel. Figure 1 shows the Site and general surroundings. Figure 2 depicts the Site in more detail, and includes soil boring locations, property boundaries, and other pertinent information.

The release area is primarily woodlands, with areas of wetland abutting to the south and parking lot abutting to the north. A small path-like area that local residents that may use as way to enter areas of Cedar Woods bisects the Site north-to-south. During response actions described below, personal belongings of a trespasser were observed outside of the IH area, indicating likely use/occupation of the property by at least one person experiencing housing insecurity.

Waverly Street and commercial businesses are located north of the Site, to the east is undeveloped land with mixed commercial and residential properties along Cedar Street, to the south are wetlands and wooded parcels owned by the City (generally referred to as "Cedar Woods"), and to the west is Mellen Street with residential properties beyond the street to the west. There are no surface water bodies in the immediate vicinity of the Site; Farm Pond is located approximately 600 feet north of the Site. The Site boundary is not fenced and is accessible to the public as open space.

Description of Release

On April 6, 7 and 8, 2020, Weston & Sampson oversaw the advancement of 15 soil borings (SB-101 through SB-115) on the two above-mentioned City-owned parcels. The work was completed as part of a US EPA Brownfields-funded environmental assessment. The soil borings were advanced by New England Geotech of Jamestown, Rhode Island (NE Geotech) using a mix of direct-push technology and hand tooling. Soil samples were collected from each soil boring at the 0-1 foot (ft) and 0-3 ft depths below grade. Additional samples were collected at varying depths, depending on field evidence of impacts, to a maximum depth of 14 ft below grade. Soil samples were transported via courier under chain-of-custody to Absolute Resource Associates of Portsmouth, New Hampshire (ARA). ARA laboratory analytical reports for the samples discussed below are included as an attachment.

An initial set of soil samples, including 0-3 ft samples from all locations, were analyzed by ARA for Massachusetts Compendium of Analytical Methods (CAM)-14 Metals (antimony, arsenic, barium, beryllium, cadmium, chromium (III), chromium (VI), lead, mercury, nickel, silver, thallium, vanadium, zinc), extractable petroleum hydrocarbons (EPH) with target polycyclic aromatic hydrocarbons (PAHs), volatile petroleum hydrocarbons (VPH) with target volatile organic compounds (VOCs), and/or VOCs by state or US EPA methods. Soil samples collected for metals analysis from the 0-1 ft depth interval were held by the laboratory pending the receipt and review of the initial dataset of soil from the 0-3 ft depth interval.

Laboratory analytical results for the initial dataset identified lead at concentrations in excess of the MCP Method 1 S-1 Cleanup Standard of 200 mg/kg in 5 of the 0-3 foot samples collected from unpaved locations (SB-105, SB-107, SB-108, SB-109 and SB-111). The Method 1 S-1 Cleanup Standard was used as a conservative action level to evaluate whether activation of the remaining shallow soil samples collected from unpaved locations was necessary. As shown in Tables 1A through 1C, concentrations of lead in the 0 to 3 feet sampling intervals ranged from 630 to 1,300 mg/kg. Based on these results, it was unclear if a potential IH condition was present; therefore, on May 15, 2020, Weston & Sampson instructed ARA to activate the remaining shallow (0-1 ft) soil samples.

An additional eight (8) 0-1 foot samples from the locations where access to the soil is not prevented by means of a physical barrier, such as pavement (SB-102, SB-106, SB-107, SB-108, SB-109, SB-100, SB-111, and SB-112), were activated for laboratory analysis of lead. Laboratory analytical results for the 0-1 ft samples are summarized in Table 2. The resulting concentrations of lead in soil from the 0-1 foot interval ranged from 11 to 900 mg/kg. Two samples, SB-108 (0-1) and SB-109 (0-1), from the wooded area in approximately the center of the Site, had concentrations of 900 and 790 mg/kg, respectively, which were an order of magnitude greater than lead in the surrounding samples, ranging from 11 to 73 mg/kg. Due to the presence of lead in exposed surface soil (0-1 foot) at concentrations approximately an order of magnitude above the surrounding samples, SB-108 and SB-109 were considered to be a "Hot Spot," as defined by the MCP, and were further considered in an IH Evaluation as described below.

IH Evaluation

Weston & Sampson received the laboratory report and reviewed the results for the eight (8) 0-1' soil samples on June 2, 2020, and performed an Imminent Hazard Evaluation for the Site.

Potential Human Receptors

Potential human receptors at the Site include the following:

- Park Visitors - Adults and children may be exposed to impacted Site soil via incidental ingestion and dermal exposure.
- Utility Workers - Adults conducting potential repairs/maintenance activities may be exposed to impacted Site soil via incidental ingestion, dermal contact, and inhalation of fugitive dust.
- Construction - Adults conducting potential future subsurface construction activities may be exposed to impacted Site soil via incidental ingestion, dermal contact, and inhalation of fugitive dust.

MassDEP's spreadsheets (ShortForms) for assessing potential risks to human health were used to evaluate the data for the lead results. These ShortForms use various exposure scenarios to determine whether or not the Site conditions meet the MCP definition of a potentially significant risk to human health. Weston & Sampson discussed with the City two ShortForm scenarios for the IH evaluation at the Site, either using the "Park Visitor" exposure (younger children present at the property) or the "Trespasser" (older children and adults) exposure scenario. The City, in discussion with Weston & Sampson, recommended evaluating the potential exposure at the Site using the Park Visitor scenario since the Site is mapped as "open space;" in addition, there is a small path-like area that local residents that may use as way to access areas of Cedar Woods at the property, evidence of persons experiencing homelessness at this location, and the potential for unrestricted use by nearby residents or visitors. This approach used was very conservative in order to protect potential public health exposures, even though the Site does not currently contain any park amenities and is not considered an active park.

Exposure Point Concentrations (EPC)

For potential park visitor (the most sensitive of the receptors identified) exposures to lead in the two locations sampled in the release area, the average concentration of SB-108 and SB-109, 845 mg/kg, was used to represent potential exposures.

Risk Calculations

Local residents that may use this portion of Cedar Woods for recreation or as way to enter other areas of Cedar Woods were assumed to be exposed to the lead EPC via dermal contact and incidental ingestion of soil. Conservatively, the MassDEP Shortform (October 2012 with updates March 2015) for park visitor exposure to soil was used to evaluate local residential exposures to soil and included standard exposure assumptions. Risk characterization tables are included as an attachment.

As shown in the attached Table PSIH-1, the estimated risks for the park visitor age 1 to 2 years (noncancer, imminent hazard exposure) were greater than MassDEP risk limit of 1 (2.4). Since the Imminent Hazard Limit for lead is also 1, the results of this Imminent Hazard evaluation indicate that there is a potential Imminent Hazard associated with exposure to soil in the release area.

Notification to MassDEP

The results of the Imminent Hazard Evaluation were reported to the City of Framingham (Mr. Thatcher W. Kezer III, Chief Operating Officer) on a June 3, 2020 call from Weston & Sampson at 10:30 a.m. In accordance with the MCP at 310 CMR 40.0311(7), the IH, based on the evaluation of the two soil samples with elevated lead, was reported to MassDEP's Emergency Response Group in the Northeast Regional Office at 11:27 a.m., within two hours of the City (Mr. Kezer) obtaining knowledge of the Reportable Condition.

The MassDEP's approved IRA actions as noted in the Release Log Form (RLF) dated June 8, 2020, by Ms. Allison Williams and Mr. Ken Sanderson, consisted of temporarily fencing the area around the two locations with a 6 foot high fence, and placing warning signs on the fence. MassDEP also noted in additional comments at the end of the RLF (Section H.16) that exposed soil should be covered with high-density polyethylene sheeting to prevent airborne dust.

40.0424(1)(c) – "a description of any Immediate Response Actions undertaken to date at the site;"

On June 15, 2020, Weston & Sampson oversaw the installation of approximately 320 linear feet of 6-foot-tall, temporary chain-link fencing in the approximately 500 sf area around SB-108 and SB-109, as shown in Figure 2. Installation of the fence was completed by East Coast Fence of Kingston, Massachusetts (ECF) under contract with the City. The fencing was installed as a short-term risk mitigation measure to restrict access to the surficial soil represented by shallow samples collected at SB-108 and SB-109. Signs were posted in three languages (English, Spanish, Portuguese) as warning of lead in the soil as a potential hazard inside the fenced area. Photographs of the completed fencing installation and signage are included as an attachment. Due to heavy vegetation (including trees, brush, and weeds/grasses) in the release area, it was determined that installation of polyethylene sheeting on the ground surface to prevent airborne dust was not feasible or necessary. This was also discussed with MassDEP (Allison Williams) at the time of Notification on June 3, 2020.

MassDEP personnel (Allison Williams) of the ER group conducted a Site visit on June 18, 2020. MassDEP identified two areas of fencing in need of repair. The areas were repaired by the City's Board of Health staff and the fencing company was contacted and will replace the fence panel in questions. City personnel continue to conduct periodic inspections of the fencing.

40.0424(1)(d) – "the reason why an Immediate Response Action is required;"

In accordance with 310 CMR 40.0412(2), an IRA is required at the Site because a release of oil or hazardous materials (OHM) occurred which required notification to MassDEP under the "two-hour" notification provision of the MCP.

As described in detail above, the results of an IH Evaluation indicated that Site conditions (i.e., lead concentrations in shallow soil) did pose an IH because access to the lead-impacted Site soil was unrestricted.

40.0242(1)(e) – "the objective(s), specific plan(s) and proposed schedule for the Immediate Response Action, including, as appropriate, plans and/or sketches of the site and any proposed investigative and/or remedial installations;"

The objective of this IRA Plan is to mitigate the risk associated with the IH at the Site by means of prevention of contact with shallow Site soil by sensitive receptors (i.e., Park Users). As previously described, the City has taken initial steps to prevent contact with shallow soil at the Site by installing a temporary chain-link fence, which will remain in-place until additional response actions are undertaken to remove or cap shallow soil surrounding SB-108 and SB-109.

Weston & Sampson is evaluating the need to conduct additional Response Actions under this IRA Plan. Additional Response Actions may include the collection and analysis of additional shallow soil samples to assess the extent of the Disposal Site, the excavation of shallow lead-impacted soil surrounding SB-108 and SB-109, and/or the

emplacement of clean fill in the area surrounding SB-108 and SB-109. If necessary, a Modified IRA Plan will be submitted with the details of the additional Response Actions required to achieve IRA Completion.

40.0424(1)(f) – "a statement as to whether Remediation Waste will be excavated, collected, stored, treated or re-used at the site;"

Investigation Derived Waste (IDW), generated during the installation of the soil borings in April 2020, was managed as Remediation Waste due to the presence of RCS-1 exceedances as described above. During the course of drilling activities, approximately 0.2 cubic yards of surplus drill cuttings were placed in a labeled and secured 55-gallon steel drum and stored on-Site. The IDW was generated in small volumes from each of the boring locations depicted on the attached Figure 2; as such, it is represented by the laboratory analytical results described above.

Subsequent to the April subsurface investigation, on June 15, 2020, Weston & Sampson collected one composite sample from the drummed soil (IDW-1) and submitted it to ARA for analysis of arsenic, barium, cadmium, chromium, lead, mercury, selenium, and silver by Toxicity Characteristic Leaching Procedures (TCLP) methods. Copies of the laboratory analytical reports are included as an attachment.

On July 29, 2020, the drummed IDW was transported under a Bill of Lading by Strategic Environmental Services of Sutton, Massachusetts (SES) to Northland Environmental in Providence, Rhode Island (Northland), an appropriately permitted disposal facility in Rhode Island. This facility will temporarily store the IDW, combine it with similar material, and dispose of it at a licensed landfill, which is an appropriate disposal option based on the representative analytical data. Supporting documentation for the transportation and disposal of the IDW will be included in the appropriate MCP submittal.

Additional response actions may require the management, transportation, and off-Site disposal of additional Remediation Waste. Details on Remediation Waste management, if necessary, will be included in a Modified IRA Plan.

40.0424(1)(g) – "where appropriate, a proposed environmental monitoring plan, for implementation during and/or after the Immediate Response Action;"

No environmental monitoring is currently planned or necessary at the Site; however, if excavation of lead-impacted soil occurs under a modified IRA Plan, dust monitoring will be performed during excavation and soil handling.

If necessary, dust monitoring will be performed using a Mini-ram monitor, or equivalent, with a continuous data logger, to ensure dust is being controlled at the Site during excavation. Dust monitors will be located, at a minimum, at the northern property boundary of the Site where people are likely to be present, and on the downwind side of the excavation/soil handling. When dust plumes are observed, or dust has the potential to become airborne (during dry and/or windy conditions) water will be applied for alleviation or prevention of dust nuisance. If dust exceeds 80% (120 ug/m^3) of the 150 ug/m^3, U.S. Environmental Protection Agency's (EPA) perimeter management (PM(10)) standard action level, as measured over a 15-minute period, dust suppression and additional engineering controls (e.g., additional dust suppression agents, wind screens, wind barriers) to further manage dust will be implemented.

As mentioned above, the City's Health Department staff plan to conduct once-weekly Site visits for the purpose of identifying any areas of temporary fencing in need of repair.

40.0424(1)(h) – "a listing of federal, state or local permits that will likely be needed to conduct the Immediate Response Action;"

No federal, state, or local permits were required to install the temporary chain-link fencing at the Site. Should federal, state, or local permits be required for future response actions at the Site, the information will be documented under the appropriate remedial action plan, status, or completion report.

40.0424(1)(i) – "except as exempted pursuant to 310 CMR 40.0411(2), the seal and signature of the

Licensed Site Professional who prepared the Immediate Response Action Plan;"

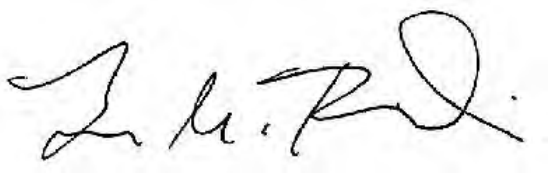
The seal and signature of Mr. Frank Ricciardi, PE, LSP, is provided on the BWSC Immediate Response Action (IRA) Transmittal Form electronically filed with this IRA Plan.

40.0424(1)(j) – "such other information as the Department may deem appropriate and necessary, based on site specific conditions, in order to review and evaluate the Immediate Response Action Plan in question"

No additional information has been requested by MassDEP.

Sincerely,

WESTON & SAMPSON ENGINEERS, INC.



Frank Ricciardi, PE, LSP
Vice President

Cc: Mayor Yvonne M. Spicer, Framingham
Mr. Thatcher Kezer III, COO
Ms. Erika Jerram, Planning and Community Development
Mr. Sam Wong, Director, Framingham Health Dept.
Mr. Brian T. Smith, Health Department

Attachments: Figures: 1- Locus Map
2 - Site Plan
Tables: 1A-1C- Summary of Laboratory Analytical Results – April 2020 Soil Borings
2 - Summary of Laboratory Analytical Results – Shallow Lead Concentrations
Public Notification Letters
Laboratory Analytical Reports
Risk Characterization Tables
Photo Documentation

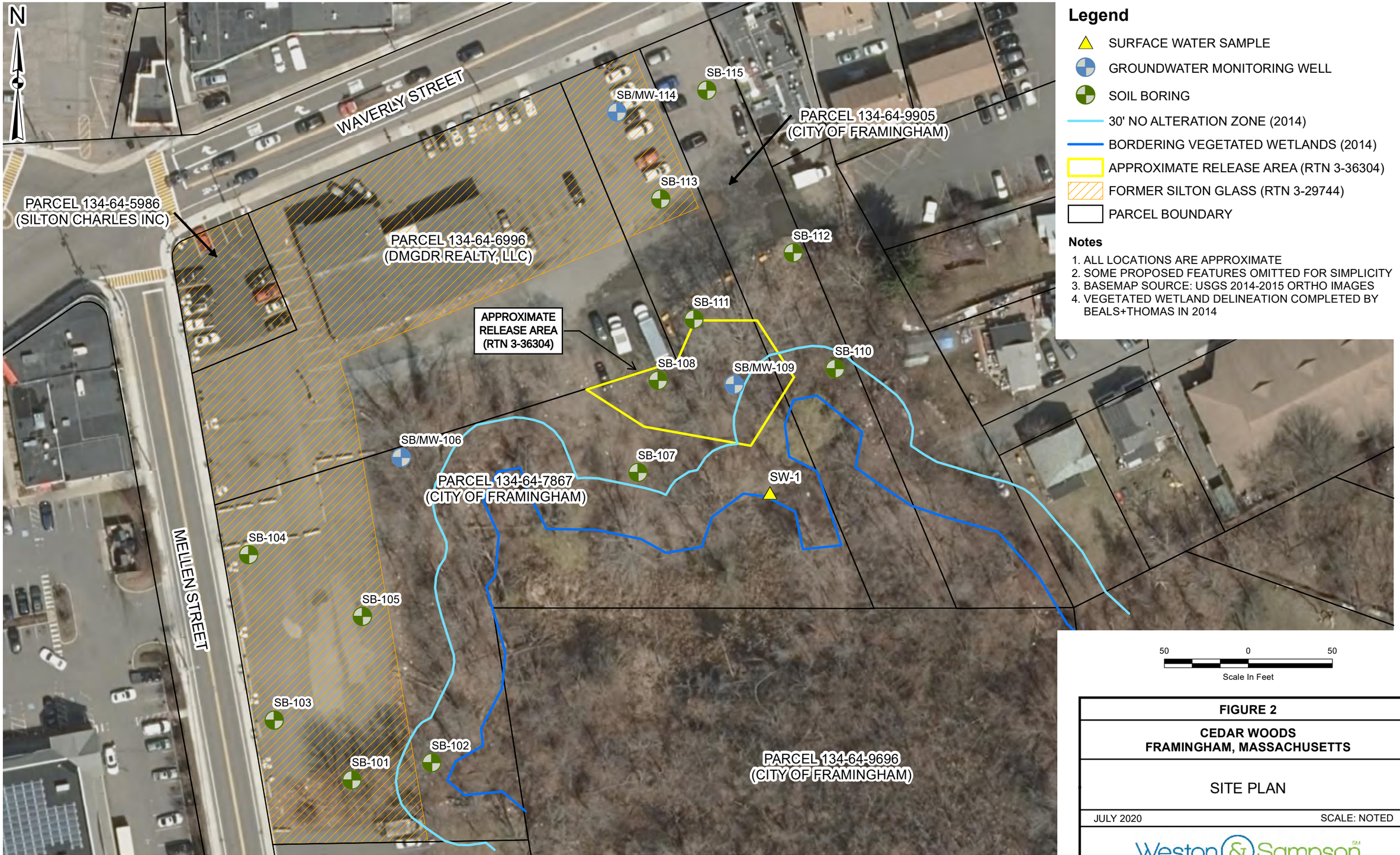
Figures

FIGURE 1
618R WAVERLY STREET
FRAMINGHAM, MASSACHUSETTS

LOCUS MAP

0 2,000 4,000 **Feet**

Weston & Sampson



Legend

- SURFACE WATER SAMPLE
- GROUNDWATER MONITORING WELL
- SOIL BORING
- 30' NO ALTERATION ZONE (2014)
- BORDERING VEGETATED WETLANDS (2014)
- APPROXIMATE RELEASE AREA (RTN 3-36304)
- FORMER SILTON GLASS (RTN 3-29744)
- PARCEL BOUNDARY

Notes

1. ALL LOCATIONS ARE APPROXIMATE
2. SOME PROPOSED FEATURES OMITTED FOR SIMPLICITY
3. BASEMAP SOURCE: USGS 2014-2015 ORTHO IMAGES
4. VEGETATED WETLAND DELINEATION COMPLETED BY BEALS+THOMAS IN 2014

50 0 50

Scale In Feet

FIGURE 2

CEDAR WOODS
FRAMINGHAM, MASSACHUSETTS

SITE PLAN

JULY 2020 SCALE: NOTED

Weston & Sampson

Tables

Table 1
Summary of Soil Analytical Results - April 2020 Soil Borings
618R Waverly Street
Framingham, Massachusetts

Parameter	Units	Reportable Concentrations	Method 1 Cleanup Standards (1)		Sample Location, Depth, and Date										
		RCS-1	S-1/GW-2	S-1/GW-3	SB-101		SB-102		SB-103			SB-104		SB-105	
					0-3 feet	9-12 feet	0-3 feet	11-14 feet	0-3 feet	3-5 feet	7-10 feet	0-3 Feet	8-10 Feet	0-3 feet	5-8 feet
					4/6/2020	4/6/2020	4/6/2020	4/6/2020	4/6/2020	4/6/2020	4/6/2020	4/7/2020	4/7/2020	4/6/2020	4/6/2020
EPH															
C9-C18 Aliphatics	mg/kg	1000	1000	1000	<21	<25	<20	<46	NT	NT	NT	<20	<22	<24	<22
C19-C36 Aliphatics	mg/kg	3000	3000	3000	**35**	**82**	**130**	**80**	NT	NT	NT	**34**	**100**	**280**	**23**
C11-C22 Aromatics	mg/kg	1000	1000	1000	<21	**41**	**50**	<46	NT	NT	NT	**25**	<22	**130**	<22
Target PAHS															
Acenaphthene	mg/kg	4	1000	1000	<0.21	<0.25	<0.20	<0.46	NT	NT	NT	<0.20	<0.22	<0.24	<0.22
Acenaphthylene	mg/kg	1	600	10	<0.21	<0.25	<0.20	<0.46	NT	NT	NT	<0.20	<0.22	<0.24	<0.22
Anthracene	mg/kg	1000	1000	1000	<0.21	**0.40**	<0.20	<0.46	NT	NT	NT	<0.20	<0.22	<0.24	<0.22
Benzo(A)Anthracene	mg/kg	7	7	7	<0.21	**0.98**	<0.20	<0.46	NT	NT	NT	**0.40**	<0.22	**1.5**	<0.22
Benzo(A)Pyrene	mg/kg	2	2	2	<0.21	**0.89**	<0.20	<0.46	NT	NT	NT	**0.44**	<0.22	**1.4**	<0.22
Benzo(B)Fluoranthene	mg/kg	7	7	7	<0.21	**0.88**	<0.20	<0.46	NT	NT	NT	**0.46**	<0.22	**1.6**	<0.22
Benzo(G,H,I)Perylene	mg/kg	1000	1000	1000	<0.21	**0.72**	<0.20	<0.46	NT	NT	NT	**0.35**	<0.22	**1.2**	<0.22
Benzo(K)Fluoranthene	mg/kg	70	70	70	<0.21	**0.71**	<0.20	<0.46	NT	NT	NT	**0.44**	<0.22	**1.2**	<0.22
Chrysene	mg/kg	70	70	70	<0.21	**1.0**	<0.20	<0.46	NT	NT	NT	**0.56**	<0.22	**1.9**	<0.22
Dibenz(A,H)Anthracene	mg/kg	0.7	1	1	<0.21	<0.25	<0.20	<0.46	NT	NT	NT	<0.20	<0.22	**0.38**	<0.22
Fluoranthene	mg/kg	1000	1000	1000	**0.22**	**2.1**	<0.20	**0.48**	NT	NT	NT	**0.80**	<0.22	**3.2**	<0.22
Fluorene	mg/kg	1000	1000	1000	<0.21	<0.25	<0.20	<0.46	NT	NT	NT	<0.20	<0.22	<0.24	<0.22
Indeno(1,2,3-Cd)Pyrene	mg/kg	7	7	7	<0.21	**0.63**	<0.20	<0.46	NT	NT	NT	**0.30**	<0.22	**1.1**	<0.22
2-Methylnaphthalene	mg/kg	0.7	80	300	<0.21	<0.25	<0.20	<0.46	NT	NT	NT	<0.20	<0.22	<0.24	<0.22
Naphthalene	mg/kg	4	20	500	<0.21	<0.25	<0.20	<0.46	NT	NT	NT	<0.20	<0.22	<0.24	<0.22
Phenanthrene	mg/kg	10	500	500	<0.21	**2.1**	<0.20	<0.46	NT	NT	NT	**0.39**	<0.22	**1.5**	<0.22
Pyrene	mg/kg	1000	1000	1000	**0.24**	**2.3**	<0.20	**0.56**	NT	NT	NT	**0.85**	<0.22	**2.9**	<0.22
VPH															
C5-C8 Aliphatics	mg/kg	100	100	100	NT	<6.3	NT	<16	NT	NT	<5.8	NT	<4.9	NT	<4.3
C9-C12 Aliphatics	mg/kg	1000	1000	1000	NT	<6.3	NT	<16	NT	NT	<5.8	NT	<4.9	NT	<4.3
C9-C10 Aromatics	mg/kg	100	100	100	NT	<6.3	NT	<16	NT	NT	<5.8	NT	<4.9	NT	<4.3
Target VOCs															
Benzene	mg/kg	2	40	40	NT	<0.13	NT	<0.31	NT	NT	<0.12	NT	<0.097	NT	<0.087
Ethylbenzene	mg/kg	40	500	500	NT	<0.13	NT	<0.31	NT	NT	<0.12	NT	<0.097	NT	<0.087
Methyl tert-Butyl Ether (MTBE)	mg/kg	0.1	100	100	NT	<0.13	NT	<0.31	NT	NT	<0.12	NT	<0.097	NT	<0.087
Naphthalene	mg/kg	4	20	500	NT	<0.31	NT	<0.78	NT	NT	<0.29	NT	<0.24	NT	<0.22
Toluene	mg/kg	30	500	500	NT	<0.13	NT	<0.31	NT	NT	<0.12	NT	<0.097	NT	<0.087
m+p Xylene	mg/kg	100	100	500	NT	<0.13	NT	<0.31	NT	NT	<0.12	NT	<0.097	NT	<0.087
o-Xylene	mg/kg	100	100	500	NT	<0.13	NT	<.31	NT	NT	<0.12	NT	<0.097	NT	<0.087
Metals															
Antimony	mg/kg	20	20	20	<0.52	**2.7**	<0.54	<1.1	<0.51	**3.7**	<0.60	<0.54	<0.57	**4.7**	<0.55
Arsenic	mg/kg	20	20	20	**3.3**	**28**	**3.3**	**10**	**3.5**	**13**	**3.3**	<2.7	**3.1**	**7.3**	**3.0**
Barium	mg/kg	1000	1000	1000	**18**	**140**	**27**	**56**	**25**	**250**	**36**	**17**	**27**	**310**	**23**
Beryllium	mg/kg	90	90	90	<0.52	<0.68	<0.54	<1.1	<0.51	<0.62	<0.60	<0.54	<0.57	<0.60	<0.55
Cadmium	mg/kg	70	70	70	<0.52	**1.3**	<0.54	<1.1	<0.51	**4.9**	<0.60	<0.54	<0.57	**2.0**	<0.55
Chromium (III)	mg/kg	1000	1000	1000	NT	**51**	NT	**41**	NT	**9.4**	NT	NT	**16**	**18**	NT
Chromium (VI)	mg/kg	100	100	100	**7.3**	**3.8**	**17**	<1.00	**6.9**	<0.49	**18**	<5.4	<0.47	<0.48	**11**
Lead	mg/kg	200	200	200	**8.7**	**230**	**16**	**190**	**22**	**710**	**8.4**	**16**	**5.5**	**650**	**5.0**
Mercury	mg/kg	20	20	20	<0.15	**0.58**	<0.13	<0.31	<0.15	**0.58**	<0.17	<0.15	<0.16	**2.9**	<0.15
Nickel	mg/kg	600	600	600	**7.4**	**14**	**23**	**64**	**6.3**	**12**	**13**	**5.4**	**17**	**18**	**14**
Selenium	mg/kg	400	400	400	<5.2	<6.8	<5.4	<11	<5.1	<6.2	<6.0	<5.4	<5.7	<6.0	<5.5
Silver	mg/kg	100	100	100	<2.6	<3.4	<2.7	<5.6	<2.5	<3.1	<3.0	<2.7	<2.8	<3.0	<2.7
Thallium	mg/kg	8	8	8	<0.52	<0.68	<0.54	<1.1	<0.51	<0.62	<0.60	<0.54	<0.57	<0.60	<0.55
Vanadium	mg/kg	400	400	400	**11**	**15**	**20**	**17**	**10**	**10.0**	**25**	**8.3**	**22**	**19**	**14**
Zinc	mg/kg	1000	1000	1000	**17**	**220**	**31**	**530**	**19**	**920**	**18**	**16**	**18**	**770**	**69**
VOCs															
Benzene	mg/kg	2	40	40	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
Sec-Butylbenzene	mg/kg	~	~	~	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
Cis-1,2-Dichloroethylene	mg/kg	0.1	0.1	100	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
Ethylbenzene	mg/kg	40	500	500	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
Isopropylbenzene (Cumene)	mg/kg	1000	~	~	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
P-Isopropyltoluene (p-Cymene)	mg/kg	100	~	~	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
Naphthalene	mg/kg	4	20	500	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
N-Propylbenzene	mg/kg	100	~	~	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
Toluene	mg/kg	30	500	500	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
Trichloroethylene	mg/kg	0.3	0.3	30	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
1,2,4-Trimethylbenzene	mg/kg	1000	~	~	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
1,3,5-Trimethylbenzene	mg/kg	10	~	~	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
Xylenes	mg/kg	100	100	500	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT

QC by JMR 5/8/2020

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VOCs and SVOCs = Volatile and Semivolatile Organic Compounds
PAH = Polycyclic Aromatic Hydrocarbons
NT = Not Tested
BDL = Below Detection Limit
MCP = Massachusetts Contingency Plan
mg/kg = milligram per killiogram

Notes:
~ = No standard available
< = indicates parameter not detected above laboratory method reporting limit, shown
BOLD Parameter detected above laboratory detection limit
BOLD Parameter exceeds the most stringent MCP Method 1, S-1 standard
BOLD Parameter exceeds the applicable MCP Method 1, S-2/3 standard
1 = Standards are from Massachusetts Contingency Plan (MCP), 310 CMR 40, April 2014.

Table 1
Summary of Soil Analytical Results - April 2020 Soil Borings
Cedar Woods
Framingham, Massachusetts

Parameter	Units	Reportable Concentrations	Method 1 Cleanup Standards (1)		Sample Location, Depth, and Date												
		RCS-1	S-1/GW-2	S-1/GW-3	SB-106			SB-107		SB-108		SB-109			SB-110		
					0-3 feet	3-4 feet	5-8 feet	0-3 Feet	10-11 Feet	0-3 Feet	6-9 Feet	0-3 Feet	5-8 Feet	DUP-1	0-3 Feet	5-8 Feet	
					4/6/2020	4/6/2020	4/6/2020	4/7/2020	4/7/2020	4/7/2020	4/7/2020	4/7/2020	4/7/2020	4/7/2020	4/7/2020	4/7/2020	
EPH																	
C9-C18 Aliphatics	mg/kg	1000	1000	1000	<21	NT	<240	<23	**34**	<26	**92**	<28	<78	<83	<22	<110	
C19-C36 Aliphatics	mg/kg	3000	3000	3000	**91**	NT	**570**	**36**	**410**	**39**	**1900**	**42**	**290**	**390**	**68**	**140**	
C11-C22 Aromatics	mg/kg	1000	1000	1000	**44**	NT	**290**	<23	**76**	<0.26	**350**	<28	**100**	**300**	**53**	<110	
Target PAHS																	
Acenaphthene	mg/kg	4	1000	1000	<0.21	NT	<0.47	<0.23	<0.23	<0.26	<0.24	<0.28	<0.78	<0.83	<0.22	<1.1	
Acenaphthylene	mg/kg	1	600	10	<0.21	NT	<0.47	<0.23	<0.23	<0.26	<0.24	<0.28	<0.78	<0.83	<0.22	<1.1	
Anthracene	mg/kg	1000	1000	1000	<0.21	NT	<0.47	<0.23	<0.23	<0.26	**0.46**	<0.28	<0.78	**0.92**	<0.22	<1.1	
Benzo(A)Anthracene	mg/kg	7	7	7	**0.42**	NT	<0.47	<0.23	<0.23	<0.26	**0.79**	<0.28	**0.78**	**4**	**0.59**	<1.1	
Benzo(A)Pyrene	mg/kg	2	2	2	**0.40**	NT	<0.47	<0.23	<0.23	<0.26	**0.70**	<0.28	**0.91**	**4.4**	**0.63**	<1.1	
Benzo(B)Fluoranthene	mg/kg	7	7	7	**0.35**	NT	<0.47	<0.23	<0.23	<0.26	**0.64**	<0.28	**0.89**	**4.4**	**0.57**	<1.1	
Benzo(G,H,I)Perylene	mg/kg	1000	1000	1000	**0.46**	NT	<0.47	<0.23	<0.23	<0.26	**0.51**	<0.28	<0.78	**3.2**	**0.42**	<1.1	
Benzo(K)Fluoranthene	mg/kg	70	70	70	**0.39**	NT	<0.47	<0.23	<0.23	<0.26	**0.57**	<0.28	<0.78	**3.7**	**0.53**	<1.1	
Chrysene	mg/kg	70	70	70	**0.52**	NT	<0.47	<0.23	<0.23	<0.26	**0.87**	<0.28	**0.96**	**5.3**	**0.74**	<1.1	
Dibenz(A,H)Anthracene	mg/kg	0.7	1	1	<0.21	NT	<0.47	<0.23	<0.23	<0.26	<0.24	<0.28	<0.78	<0.83	<0.22	<1.1	
Fluoranthene	mg/kg	1000	1000	1000	**0.81**	NT	<0.47	**0.25**	<0.23	<0.26	**1.9**	<0.28	**1.5**	**9.2**	**1.3**	<1.1	
Fluorene	mg/kg	1000	1000	1000	<0.21	NT	<0.47	<0.23	<0.23	<0.26	**0.37**	<0.28	<0.78	<0.83	<0.22	<1.1	
Indeno(1,2,3-Cd)Pyrene	mg/kg	7	7	7	**0.36**	NT	<0.47	<0.23	<0.23	<0.26	**0.36**	<0.28	<0.78	**2.9**	**0.36**	<1.1	
2-Methylnaphthalene	mg/kg	0.7	80	300	<0.21	NT	<0.47	<0.23	<0.23	<0.26	**0.57**	<0.28	<0.78	<0.83	<0.22	<1.1	
Naphthalene	mg/kg	4	20	500	<0.21	NT	<0.47	<0.23	<0.23	<0.26	**0.50**	<0.28	<0.78	**0.86**	<0.22	<1.1	
Phenanthrene	mg/kg	10	500	500	**0.44**	NT	<0.47	<0.23	<0.23	<0.26	**2.1**	<0.28	**0.80**	**5.7**	**1.1**	<1.1	
Pyrene	mg/kg	1000	1000	1000	**0.88**	NT	<0.47	<0.23	<0.23	<0.26	**2.1**	<0.28	**1.7**	**9**	**1.4**	<1.1	
VPH																	
C5-C8 Aliphatics	mg/kg	100	100	100	NT	NT	<5.5	**7.6**	**26**	NT	**30**	NT	<29	<29	NT	<42	
C9-C12 Aliphatics	mg/kg	1000	1000	1000	NT	NT	<5.5	<5.4	**22**	NT	**24**	NT	<29	<29	NT	<42	
C9-C10 Aromatics	mg/kg	100	100	100	NT	NT	<5.5	<5.4	**39**	NT	**67**	NT	<29	<29	NT	<42	
Target VOCs																	
Benzene	mg/kg	2	40	40	NT	NT	<0.11	<0.11	<0.094	NT	**0.30**	NT	<0.59	<0.59	NT	<0.83	
Ethylbenzene	mg/kg	40	500	500	NT	NT	<0.11	<0.11	**0.48**	NT	**0.49**	NT	<0.59	<0.59	NT	<0.83	
Methyl tert-Butyl Ether (MTBE)	mg/kg	0.1	100	100	NT	NT	<0.11	<0.11	<0.094	NT	<0.11	NT	<0.59	<0.59	NT	<0.83	
Naphthalene	mg/kg	4	20	500	NT	NT	<0.28	<0.27	**1.3**	NT	**1.9**	NT	<1.5	<1.5	NT	<2.1	
Toluene	mg/kg	30	500	500	NT	NT	<0.11	<0.11	<0.094	NT	**0.42**	NT	<0.59	<0.59	NT	<0.83	
m+p Xylene	mg/kg	100	100	500	NT	NT	<0.11	<0.11	**1.6**	NT	**2.7**	NT	<0.59	<0.59	NT	<0.83	
o-Xylene	mg/kg	100	100	500	NT	NT	<0.11	<0.11	<0.094	NT	**0.45**	NT	<0.59	<0.59	NT	<0.83	
Metals															NT		
Antimony	mg/kg	20	20	20	**0.9**	NT	**0.78**	**55**	**5.9**	**51**	**10**	**64**	**3.5**	**2.1**	<0.51	**3.5**	
Arsenic	mg/kg	20	20	20	**4**	NT	**3.2**	**8.0**	**3.5**	**8.1**	**7.1**	**23**	**15**	**20**	**2.9**	<14	
Barium	mg/kg	1000	1000	1000	**200**	NT	**32**	**280**	**48**	**430**	**470**	**300**	**78**	**86**	**41**	**160**	
Beryllium	mg/kg	90	90	90	<0.56	NT	<0.59	<0.63	<0.49	<0.65	<0.60	<0.67	<2.0	<2.0	<0.51	<2.8	
Cadmium	mg/kg	70	70	70	<0.56	NT	<0.59	**4.4**	**2.0**	**5.8**	**11**	**3.6**	<2.0	<2.0	<0.51	<2.8	
Chromium (III)	mg/kg	1000	1000	1000	NT	NT	NT	**33**	NT	NT	**25**	NT	<20	NT	NT	<28	
Chromium (VI)	mg/kg	100	100	100	**16**	**0.50**	**23**	<0.51	**19**	**70**	<0.48	**64**	<1.6	<20	**10**	<2.2	
Lead	mg/kg	200	200	200	**120**	NT	**150**	**1200**	**300**	**1200**	**970**	**1300**	**180**	**250**	**8.1**	**280**	
Mercury	mg/kg	20	20	20	**0.17**	NT	<0.15	**0.60**	<0.14	**0.18**	**0.47**	<0.19	<0.58	**0.99**	<0.16	<0.78	
Nickel	mg/kg	600	600	600	**12**	NT	**9.8**	**76**	**16**	**88**	**40**	**100**	<20	<20	**12**	<28	
Selenium	mg/kg	400	400	400	<5.36	NT	<5.9	<6.3	<4.9	<6.5	<6.0	<6.7	<20	<20	<5.1	<28	
Silver	mg/kg	100	100	100	<2.8	NT	<3.0	**32**	<2.5	**7.3**	<3.0	**12**	<9.9	<10	<2.5	<14	
Thallium	mg/kg	8	8	8	<0.56	NT	<0.59	<0.63	<0.49	<0.65	<0.60	<0.67	<2.0	<2.0	<0.51	<2.8	
Vanadium	mg/kg	400	400	400	**17**	NT	**12**	**20**	**12**	**10**	**18**	**8.1**	<20	<20	**16**	<28	
Zinc	mg/kg	1000	1000	1000	**190**	NT	**91**	**2900**	**250**	**2900**	**2400**	**4000**	**270**	**250**	**19**	**230**	
VOCs																	
Benzene	mg/kg	2	40	40	NT	NT	NT	NT	NT	NT	**0.19**	NT	NT	NT	NT	NT	
Sec-Butylbenzene	mg/kg	~	~	~	NT	NT	NT	NT	NT	NT	**0.26**	NT	NT	NT	NT	NT	
Cis-1,2-Dichloroethylene	mg/kg	0.1	0.1	100	NT	NT	NT	NT	NT	NT	**0.20**	NT	NT	NT	NT	NT	
Ethylbenzene	mg/kg	40	500	500	NT	NT	NT	NT	NT	NT	**0.59**	NT	NT	NT	NT	NT	
Isopropylbenzene (Cumene)	mg/kg	1000	~	~	NT	NT	NT	NT	NT	NT	**0.34**	NT	NT	NT	NT	NT	
P-Isopropyltoluene (p-Cymene)	mg/kg	100	~	~	NT	NT	NT	NT	NT	NT	**0.30**	NT	NT	NT	NT	NT	
Naphthalene	mg/kg	4	20	500	NT	NT	NT	NT	NT	NT	**1.8**	NT	NT	NT	NT	NT	
N-Propylbenzene	mg/kg	100	~	~	NT	NT	NT	NT	NT	NT	**0.93**	NT	NT	NT	NT	NT	
Toluene	mg/kg	30	500	500	NT	NT	NT	NT	NT	NT	**0.46**	NT	NT	NT	NT	NT	
Trichloroethylene	mg/kg	0.3	0.3	30	NT	NT	NT	NT	NT	NT	**0.36**	NT	NT	NT	NT	NT	
1,2,4-Trimethylbenzene	mg/kg	1000	~	~	NT	NT	NT	NT	NT	NT	**6.9**	NT	NT	NT	NT	NT	
1,3,5-Trimethylbenzene	mg/kg	10	~	~	NT	NT	NT	NT	NT	NT	**2.3**	NT	NT	NT	NT	NT	
Xylenes	mg/kg	100	100	500	NT	NT	NT	NT	NT	NT	**3.43**	NT	NT	NT	NT	NT	

QC by JMR 5/8/2020

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Cedar Woods
Framingham, Massachusetts

Parameter	Units	Reportable Concentrations	Method 1 Cleanup Standards (1)		Sample Location, Depth, and Date												
		RCS-1	S-1/GW-2	S-1/GW-3	SB-111			SB-112		SB-113			SB-114		SB-115		
					0-1 feet	0-3 feet	4-7 feet	0-3 Feet	5-8 Feet	0-3 feet	5-8 feet	DUP-2	0-3 feet	5-8 feet	0-3 feet	5-8 feet	
					4/8/2020	4/8/2020	4/8/2020	4/7/2020	4/7/2020	4/8/2020	4/8/2020	4/8/2020	4/8/2020	4/8/2020	4/8/2020	4/8/2020	
EPH																	
C9-C18 Aliphatics	mg/kg	1000	1000	1000	<20	<19	<97	<21	<38	<97	<19	<20	<19	<19	<19	<20	
C19-C36 Aliphatics	mg/kg	3000	3000	3000	**85**	**40**	**340**	**50**	**190**	**450**	<19	<20	**40**	**55**	<19	**57**	
C11-C22 Aromatics	mg/kg	1000	1000	1000	**62**	<19	**200**	**22**	**140**	**97**	<19	<20	**220**	**33**	<19	**75**	
Target PAHS																	
Acenaphthene	mg/kg	4	1000	1000	<0.20	<0.19	**0.24**	<0.21	<0.38	<0.19	<0.19	<0.20	<0.19	<0.19	<0.19	<0.20	
Acenaphthylene	mg/kg	1	600	10	<0.20	<0.19	<0.19	<0.21	<0.38	<0.19	<0.19	<0.20	**0.77**	<0.19	<0.19	<0.20	
Anthracene	mg/kg	1000	1000	1000	<0.20	<0.19	**1.3**	<0.21	**0.84**	<0.19	<0.19	<0.20	**0.61**	<0.19	<0.19	**0.33**	
Benzo(A)Anthracene	mg/kg	7	7	7	**1.5**	<0.19	**4.1**	**0.39**	**3**	<0.19	<0.19	<0.20	**4.9**	**0.33**	<0.19	**1.6**	
Benzo(A)Pyrene	mg/kg	2	2	2	**2**	<0.19	**4.1**	**0.4**	**3**	<0.19	<0.19	<0.20	**4.4**	**0.37**	<0.19	**1.7**	
Benzo(B)Fluoranthene	mg/kg	7	7	7	**2.3**	<0.19	**3.9**	**0.37**	**2.8**	<0.19	<0.19	<0.20	**3.6**	**0.29**	<0.19	**1.8**	
Benzo(G,H,I)Perylene	mg/kg	1000	1000	1000	**2**	<0.19	**3**	**0.25**	**2**	<0.19	<0.19	<0.20	**3.4**	**0.34**	<0.19	**1.5**	
Benzo(K)Fluoranthene	mg/kg	70	70	70	**1.7**	<0.19	**3.4**	**0.38**	**2.7**	<0.19	<0.19	<0.20	**3.4**	**0.31**	<0.19	**1.4**	
Chrysene	mg/kg	70	70	70	**1.8**	<0.19	**4.4**	**0.42**	**3.6**	<0.19	<0.19	<0.20	**5.7**	**0.38**	<0.19	**1.9**	
Dibenz(A,H)Anthracene	mg/kg	0.7	1	1	**0.51**	<0.19	**0.95**	<0.21	**0.62**	<0.19	<0.19	<0.20	**0.78**	<0.19	<0.19	**0.38**	
Fluoranthene	mg/kg	1000	1000	1000	**2.2**	<0.19	**8.5**	**0.8**	**6.8**	<0.19	<0.19	<0.20	**9.3**	**0.77**	<0.19	**3.3**	
Fluorene	mg/kg	1000	1000	1000	<0.20	<0.19	**0.43**	<0.21	**0.43**	<0.19	<0.19	<0.20	<0.19	<0.19	<0.19	**0.2**	
Indeno(1,2,3-Cd)Pyrene	mg/kg	7	7	7	**1.7**	<0.19	**2.7**	**0.21**	**1.7**	<0.19	<0.19	<0.20	**2.7**	**0.25**	<0.19	**1.2**	
2-Methylnaphthalene	mg/kg	0.7	80	300	<0.20	<0.19	**0.22**	<0.21	<0.38	<0.19	<0.19	<0.20	<0.19	<0.19	<0.19	<0.20	
Naphthalene	mg/kg	4	20	500	<0.20	<0.19	**0.35**	<0.21	<0.38	<0.19	<0.19	<0.20	<0.19	<0.19	<0.19	**0.26**	
Phenanthrene	mg/kg	10	500	500	0.57	<0.19	**5.1**	**0.41**	**4.7**	<0.19	<0.19	<0.20	**4.1**	**0.54**	<0.19	**2.2**	
Pyrene	mg/kg	1000	1000	1000	**1.9**	<0.19	**6.7**	**0.73**	**5.8**	<0.19	<0.19	<0.20	**11**	**0.69**	<0.19	**3.5**	
VPH																	
C5-C8 Aliphatics	mg/kg	100	100	100	NT	NT	<5.4	NT	<10	NT	<4.5	<4.5	<3.9	NT	NT	<7.3	
C9-C12 Aliphatics	mg/kg	1000	1000	1000	NT	NT	<5.4	NT	<10	NT	<4.5	<4.5	<3.9	NT	NT	<7.3	
C9-C10 Aromatics	mg/kg	100	100	100	NT	NT	<5.4	NT	<10	NT	<4.5	<4.5	<3.9	NT	NT	<7.3	
Target VOCs																	
Benzene	mg/kg	2	40	40	NT	NT	<0.11	NT	<0.21	NT	<0.090	<0.090	<0.078	NT	NT	<0.15	
Ethylbenzene	mg/kg	40	500	500	NT	NT	<0.11	NT	<0.21	NT	<0.090	<0.090	<0.078	NT	NT	<0.15	
Methyl tert-Butyl Ether (MTBE)	mg/kg	0.1	100	100	NT	NT	<0.11	NT	<0.21	NT	<0.090	<0.090	<0.078	NT	NT	<0.15	
Naphthalene	mg/kg	4	20	500	NT	NT	**0.3**	NT	<0.52	NT	<0.23	<0.23	<0.20	NT	NT	<0.37	
Toluene	mg/kg	30	500	500	NT	NT	<0.11	NT	<0.21	NT	<0.090	<0.090	<0.078	NT	NT	<0.15	
m+p Xylene	mg/kg	100	100	500	NT	NT	<0.11	NT	<0.21	NT	<0.090	<0.090	<0.078	NT	NT	<0.15	
o-Xylene	mg/kg	100	100	500	NT	NT	<0.11	NT	<0.21	NT	<0.090	<0.090	<0.078	NT	NT	<0.15	
Metals								NT									
Antimony	mg/kg	20	20	20	**0.45**	**29**	**4.6**	<0.50	**4.2**	<0.56	<0.42	<0.44	<0.48	**0.66**	<0.40	**1.7**	
Arsenic	mg/kg	20	20	20	<1.7	**12**	**8.2**	**5.0**	**16**	**3.7**	**2.1**	<2.2	<2.4	<15	**2.6**	**8.3**	
Barium	mg/kg	1000	1000	1000	**51**	**260**	**80**	**38**	**130**	**48**	**26**	**26**	**17**	**210**	**30**	**94**	
Beryllium	mg/kg	90	90	90	<0.34	<0.48	**0.44**	<0.50	<0.95	**0.69**	<0.42	<0.044	<0.48	<0.59	**0.56**	<0.64	
Cadmium	mg/kg	70	70	70	<0.34	**3.8**	**0.7**	<0.50	**1.1**	<0.56	<0.42	<0.44	<0.48	<0.59	<0.40	<0.64	
Chromium (III)	mg/kg	1000	1000	1000	NT	NT	**13**	NT	**21**	NT	**5.7**	NT	NT	<29	NT	**15**	
Chromium (VI)	mg/kg	100	100	100	**12**	**43**	**2**	**18**	**1.3**	**15**	<0.40	**6.3**	<4.8	<0.59	**8**	<0.59	
Lead	mg/kg	200	200	200	**21**	**630**	**460**	**66**	**470**	**36**	**3.2**	**3.4**	**21**	**270**	**14**	**330**	
Mercury	mg/kg	20	20	20	<0.14	**0.26**	<0.16	<0.15	**0.80**	<0.16	<0.15	<0.14	<0.15	<0.21	<0.13	<0.21	
Nickel	mg/kg	600	600	600	**11**	**52**	**18**	**18**	**17**	<5.6	**6.2**	**5.9**	<4.8	<29	**5.4**	**9.9**	
Selenium	mg/kg	400	400	400	<3.4	<4.8	<4.0	<5.0	<9.5	<5.6	<4.2	<4.4	<4.8	<29	<4.0	<6.4	
Silver	mg/kg	100	100	100	<1.7	**4.5**	<2.0	<2.5	<4.8	<2.8	<2.1	<2.2	<2.4	<2.9	<2.0	<3.2	
Thallium	mg/kg	8	8	8	<0.34	**0.48**	**0.4**	<0.50	<0.95	<0.56	<0.42	<0.44	<0.48	<0.59	<0.40	<0.64	
Vanadium	mg/kg	400	400	400	**19**	**12**	**14**	**21**	**26**	**16**	**7.8**	**8.3**	<4.8	<29	**11**	**16**	
Zinc	mg/kg	1000	1000	1000	**42**	**1500**	**330**	**51**	**300**	**43**	**18**	**18**	**40**	**340**	**28**	**210**	
VOCs																	
Benzene	mg/kg	2	40	40	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	
Sec-Butylbenzene	mg/kg	~	~	~	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	
Cis-1,2-Dichloroethylene	mg/kg	0.1	0.1	100	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	
Ethylbenzene	mg/kg	40	500	500	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	
Isopropylbenzene (Cumene)	mg/kg	1000	~	~	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	
P-Isopropyltoluene (p-Cymene)	mg/kg	100	~	~	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	
Naphthalene	mg/kg	4	20	500	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	
N-Propylbenzene	mg/kg	100	~	~	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	
Toluene	mg/kg	30	500	500	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	
Trichloroethylene	mg/kg	0.3	0.3	30	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	
1,2,4-Trimethylbenzene	mg/kg	1000	~	~	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	
1,3,5-Trimethylbenzene	mg/kg	10	~	~	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	
Xylenes	mg/kg	100	100	500	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	

QC by JMR 5/8/2020

Abbreviations:
EPH and VPH= Extractable and Volatile Petroleum Hydrocarbons
VOCs and SVOCs = Volatile and Semivolatile Organic Compounds
PAH = Polycyclic Aromatic Hydrocarbons
NT = Not Tested
BDL = Below Detection Limit
MCP = Massachusetts Contingency Plan
mg/kg = milligram per killiogram

Notes:
~ = No standard available
< = indicates parameter not detected above laboratory method reporting limit, shown
BOLD Parameter detected above laboratory detection limit
BOLD Parameter exceeds the most stringent MCP Method 1, S-1 standard
BOLD Parameter exceeds the applicable MCP Method 1, S-2/3 standard
1 = Standards are from Massachusetts Contingency Plan (MCP), 310 CMR 40, April 2014.

Table 2
Summary of Soil Analytical Results - Shallow Lead Concentrations
618R Waverly Street
Framingham, Massachusetts

Parameters	Units	MCP - Method 1 Cleanup Standards [1]	Sample Location, Date, and Depth							
		S-1/GW-3	SB-102	SB-106	SB-107	SB-108	SB-109	SB-110	SB-111	SB-112
			4/6/2020 0-1 feet	4/6/2020 0-1 feet	4/7/2020 0-1 feet	4/7/2020 0-1 feet	4/7/2020 0-1 feet	4/7/2020 0-1 feet	4/8/2020 0-1 feet	4/7/2020 0-1 feet
Metals										
LEAD	mg/Kg	200	**73**	**68**	**67**	**900**	**790**	**11**	**21**	**25**

QC by JRS 7/24/2020

Abbreviations:
MCP = Massachusetts Contingency Plan
mg/kg = milligram per killiogram

Notes:
< = indicates parameter not detected above laboratory method reporting limit, shown
1 = Standards are from Massachusetts Contingency Plan (MCP), 310 CMR 40, April 2014.
BOLD Parameter detected above laboratory detection limit
BOLD Parameter exceeds the MCP Method 1, S-1/GW-3 Cleanup Standard

Public Notification Letters

55 Walkers Brook Drive, Suite 100, Reading, MA 01867
Tel: 978.532.1900

July 31, 2020

Honorable Mayor Yvonne M. Spicer
Framingham City Hall
150 Concord Street
Framingham, Massachusetts 01702

Re: **Immediate Response Action (IRA) Plan**
618R Waverly Street, Framingham, MA (Parcel IDs 134-64-7867 and 134-64-9905)
Release Tracking Number (RTN) 3-36304

Dear Mayor Spicer:

Weston & Sampson is hereby notifying your office that an Immediate Response Action (IRA) Plan has been submitted to the Massachusetts Department of Environmental Protection (MassDEP) for the above-referenced Release Tracking Number (RTN). The RTN is located on two parcels of land, owned by the City, identified on the Framingham Assessor's maps as Parcel IDs 134-64-7867 and 134-64-9905 (Site). Implementation of an IRA, as outlined in 310 CMR 40.0410, is necessary at the Site to mitigate an Imminent Hazard (IH) due to elevated lead concentrations in shallow soil.

The results of an Imminent Hazard Evaluation, performed by Weston & Sampson, were reported to the City of Framingham (Mr. Thatcher W. Kezer III, Chief Operating Officer) on a June 3, 2020 call from Weston & Sampson at 10:30 a.m. In accordance with the MCP at 310 CMR 40.0311(7), the IH, based on the evaluation of the two soil samples with elevated lead, was reported to MassDEP's Emergency Response Group in the Northeast Regional Office at 11:27 a.m., within two hours of the City (Mr. Kezer) obtaining knowledge of the Reportable Condition. An email notice of the implementation of an IRA was sent to the City as written notice by Weston & Sampson on June 3, 2020.

The objective of this IRA Plan is to mitigate the risk associated with the IH at the Site by means of prevention of contact with shallow Site soil by sensitive receptors. The City has taken initial steps to prevent contact with shallow soil at the Site by installing a temporary chain-link fence, which will remain in-place until additional response actions are undertaken. Weston & Sampson is evaluating the need to conduct additional Response Actions under the IRA Plan. Additional Response Actions may include the collection and analysis of shallow soil samples, the excavation of shallow lead-impacted soil, and/or the emplacement of clean fill in the area lead-impacted soil.

This notification is provided in accordance with the public involvement requirements of the MCP at 310 CMR 40.0428. The IRA Plan is available for public review online at the MassDEP's website (https://eeaonline.eea.state.ma.us/portal#!/wastesite/3-0036304).

If you have any questions or concerns regarding this notice, please do not hesitate to contact the undersigned at (978) 532-1900.

Sincerely,

WESTON & SAMPSON ENGINEERS, INC.

Frank Ricciardi, PE, LSP
Vice President

Cc: Mr. Sam Wong, Director, Framingham Health Dept.

55 Walkers Brook Drive, Suite 100, Reading, MA 01867
Tel: 978.532.1900

July 31, 2020

Mr. Sam Wong
Director, Framingham Health Dept.
Framingham City Hall
150 Concord Street
Framingham, Massachusetts 01702

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Sincerely,

WESTON & SAMPSON ENGINEERS, INC.

Frank Ricciardi, PE, LSP
Vice President

Cc: Mayor Yvonne M. Spicer, City of Framingham

Laboratory Analytical Reports

Laboratory Report

Absolute Resource associates
124 Heritage Avenue Portsmouth NH 03801

Jill Murphy
Weston & Sampson
55 Walkers Brook Drive
Reading, MA 01867

PO Number: Framingham Brownfields
Job ID: 52498
Date Received: 4/6/20

Project: Cedar Woods 2180311

Attached please find results for the analysis of the samples received on the date referenced above.

Unless otherwise noted in the attached report, the analyses performed met the requirements of Absolute Resource Associates' Quality Assurance Plan. The Standard Operating Procedures are based upon USEPA SW-846, USEPA Methods for Chemical Analysis of Water and Wastewater, Standard Methods for the Examination of Water and Wastewater and other recognized methodologies. The results contained in this report pertain only to the samples as indicated on the chain of custody.

Absolute Resource Associates maintains certification with the agencies listed below. The reported results apply to the sample(s) in the condition as received at the time the laboratory took custody. This report shall not be reproduced except in full and with approval from the laboratory. The liability of ARA is limited to the cost of the requested analyses, unless otherwise agreed upon in writing.

We appreciate the opportunity to provide laboratory services. If you have any questions regarding the enclosed report, please contact the laboratory and we will be glad to assist you.

Sincerely,
Absolute Resource Associates

Aaron DeWees
Chief Operating Officer

Date of Approval: 5/4/2020
Total number of pages: 48

Absolute Resource Associates Certifications

New Hampshire	1732	Massachusetts	M-NH902
Maine	NH902		

Project ID: Cedar Woods 2180311

Sample Association Table

Field ID	Matrix	Date-Time Sampled	Lab#	Analysis
SB-106 (0-3')	Solid	4/6/2020 9:40	52498-002	
				Antimony in solids by 6020
				Arsenic in solids by 6020
				Barium in solids by 6020
				Beryllium in solids by 6020
				Cadmium in solids by 6020
				Chromium in solids by 6020
				Combo: 14 MA MCP Metals
				EPH in solids by MADEP Method
				Lead in solids by 6020
				Mercury in solids by 7471
				Nickel in solids by 6020
				Selenium in solids by 6020
				Silver in solids by 6020
				Solid Digestion for ICP Analysis
				Thallium in solids by 6020
				Vanadium in solids by 6020
				Zinc in solids by 6020
SB-106 (5-8')	Solid	4/6/2020 10:00	52498-003	
				Antimony in solids by 6020
				Arsenic in solids by 6020
				Barium in solids by 6020
				Beryllium in solids by 6020
				Cadmium in solids by 6020
				Chromium in solids by 6020
				Combo: 14 MA MCP Metals
				EPH in solids by MADEP Method
				Lead in solids by 6020
				Mercury in solids by 7471
				Nickel in solids by 6020
				Selenium in solids by 6020
				Silver in solids by 6020
				Solid Digestion for ICP Analysis
				Thallium in solids by 6020
				Vanadium in solids by 6020
				VPH in solids by MA DEP Method
				Zinc in solids by 6020
SB-106 (3-4')	Solid	4/6/2020 9:50	52498-004	
				Hexavalent Chromium in solids by SW3060A7196A
				ORP in solids by ASTM-1498-08
				pH in solids by SW9045C

Project ID: Cedar Woods 2180311

Sample Association Table

Field ID	Matrix	Date-Time Sampled	Lab#	Analysis
SB-105 (0-3')	Solid	4/6/2020 10:40	52498-005	
				Antimony in solids by 6020
				Arsenic in solids by 6020
				Barium in solids by 6020
				Beryllium in solids by 6020
				Cadmium in solids by 6020
				Chromium in solids by 6020
				Combo: 14 MA MCP Metals
				EPH in solids by MADEP Method
				Hexavalent Chromium in solids by SW3060A7196A
				Lead in solids by 6020
				Mercury in solids by 7471
				Nickel in solids by 6020
				ORP in solids by ASTM-1498-08
				pH in solids by SW9045C
				Selenium in solids by 6020
				Silver in solids by 6020
				Solid Digestion for ICP Analysis
				Thallium in solids by 6020
				Vanadium in solids by 6020
				Zinc in solids by 6020
SB-105 (5-8')	Solid	4/6/2020 11:00	52498-006	
				Antimony in solids by 6020
				Arsenic in solids by 6020
				Barium in solids by 6020
				Beryllium in solids by 6020
				Cadmium in solids by 6020
				Chromium in solids by 6020
				Combo: 14 MA MCP Metals
				EPH in solids by MADEP Method
				Lead in solids by 6020
				Mercury in solids by 7471
				Nickel in solids by 6020
				Selenium in solids by 6020
				Silver in solids by 6020
				Solid Digestion for ICP Analysis
				Thallium in solids by 6020
				Vanadium in solids by 6020
				VPH in solids by MA DEP Method
				Zinc in solids by 6020

Project ID: Cedar Woods 2180311

Sample Association Table

Field ID	Matrix	Date-Time Sampled	Lab#	Analysis
SB-102 (0-3')	Solid	4/6/2020 11:45	52498-007	
				Antimony in solids by 6020
				Arsenic in solids by 6020
				Barium in solids by 6020
				Beryllium in solids by 6020
				Cadmium in solids by 6020
				Chromium in solids by 6020
				Combo: 14 MA MCP Metals
				EPH in solids by MADEP Method
				Lead in solids by 6020
				Mercury in solids by 7471
				Nickel in solids by 6020
				Selenium in solids by 6020
				Silver in solids by 6020
				Solid Digestion for ICP Analysis
				Thallium in solids by 6020
				Vanadium in solids by 6020
				Zinc in solids by 6020
SB-102 (11-14')	Solid	4/6/2020 11:40	52498-009	
				Antimony in solids by 6020
				Arsenic in solids by 6020
				Barium in solids by 6020
				Beryllium in solids by 6020
				Cadmium in solids by 6020
				Chromium in solids by 6020
				Combo: 14 MA MCP Metals
				EPH in solids by MADEP Method
				Hexavalent Chromium in solids by SW3060A7196A
				Lead in solids by 6020
				Mercury in solids by 7471
				Nickel in solids by 6020
				ORP in solids by ASTM-1498-08
				pH in solids by SW9045C
				Selenium in solids by 6020
				Silver in solids by 6020
				Solid Digestion for ICP Analysis
				Thallium in solids by 6020
				Vanadium in solids by 6020
				VPH in solids by MA DEP Method
				Zinc in solids by 6020

Project ID: Cedar Woods 2180311

Sample Association Table

Field ID	Matrix	Date-Time Sampled	Lab#	Analysis
SB-101 (0-3')	Solid	4/6/2020 12:55	52498-010	
				Antimony in solids by 6020
				Arsenic in solids by 6020
				Barium in solids by 6020
				Beryllium in solids by 6020
				Cadmium in solids by 6020
				Chromium in solids by 6020
				Combo: 14 MA MCP Metals
				EPH in solids by MADEP Method
				Lead in solids by 6020
				Mercury in solids by 7471
				Nickel in solids by 6020
				Selenium in solids by 6020
				Silver in solids by 6020
				Solid Digestion for ICP Analysis
				Thallium in solids by 6020
				Vanadium in solids by 6020
				Zinc in solids by 6020
SB-101 (9-12')	Solid	4/6/2020 13:05	52498-011	
				Antimony in solids by 6020
				Arsenic in solids by 6020
				Barium in solids by 6020
				Beryllium in solids by 6020
				Cadmium in solids by 6020
				Chromium in solids by 6020
				Combo: 14 MA MCP Metals
				EPH in solids by MADEP Method
				Hexavalent Chromium in solids by SW3060A7196A
				Lead in solids by 6020
				Mercury in solids by 7471
				Nickel in solids by 6020
				ORP in solids by ASTM-1498-08
				pH in solids by SW9045C
				Selenium in solids by 6020
				Silver in solids by 6020
				Solid Digestion for ICP Analysis
				Thallium in solids by 6020
				Vanadium in solids by 6020
				VPH in solids by MA DEP Method
				Zinc in solids by 6020

Project ID: Cedar Woods 2180311

Sample Association Table

Field ID	Matrix	Date-Time Sampled	Lab#	Analysis
SB-103 (0-3')	Solid	4/6/2020 12:20	52498-012	
				Antimony in solids by 6020
				Arsenic in solids by 6020
				Barium in solids by 6020
				Beryllium in solids by 6020
				Cadmium in solids by 6020
				Chromium in solids by 6020
				Combo: 14 MA MCP Metals
				Lead in solids by 6020
				Mercury in solids by 7471
				Nickel in solids by 6020
				Selenium in solids by 6020
				Silver in solids by 6020
				Solid Digestion for ICP Analysis
				Thallium in solids by 6020
				Vanadium in solids by 6020
				Zinc in solids by 6020
SB-103 (3-5')	Solid	4/6/2020 12:20	52498-013	
				Antimony in solids by 6020
				Arsenic in solids by 6020
				Barium in solids by 6020
				Beryllium in solids by 6020
				Cadmium in solids by 6020
				Chromium in solids by 6020
				Combo: 14 MA MCP Metals
				Hexavalent Chromium in solids by SW3060A7196A
				Lead in solids by 6020
				Mercury in solids by 7471
				Nickel in solids by 6020
				ORP in solids by ASTM-1498-08
				pH in solids by SW9045C
				Selenium in solids by 6020
				Silver in solids by 6020
				Solid Digestion for ICP Analysis
				Thallium in solids by 6020
				Vanadium in solids by 6020
				Zinc in solids by 6020

Project ID: Cedar Woods 2180311

Sample Association Table

Field ID	Matrix	Date-Time Sampled	Lab#	Analysis
SB-103 (7-10')	Solid	4/6/2020 12:25	52498-014	
				Antimony in solids by 6020
				Arsenic in solids by 6020
				Barium in solids by 6020
				Beryllium in solids by 6020
				Cadmium in solids by 6020
				Chromium in solids by 6020
				Combo: 14 MA MCP Metals
				Lead in solids by 6020
				Mercury in solids by 7471
				Nickel in solids by 6020
				Selenium in solids by 6020
				Silver in solids by 6020
				Solid Digestion for ICP Analysis
				Thallium in solids by 6020
				Vanadium in solids by 6020
				VPH in solids by MA DEP Method
				Zinc in solids by 6020
Trip Blank	Solid	4/6/2020 0:00	52498-015	
				VPH in solids by MA DEP Method
SB-106 (5-8')REX	Solid	4/6/2020 10:00	52498-016	
				EPH in solids by MADEP Method

Project ID: Cedar Woods 2180311

Job ID: 52498

Sample#: 52498-003

Sample ID: SB-106 (5-8')

Matrix: Solid Percent Dry: 81.1% Results expressed on a dry weight basis.

Samples prepared in methanol at a ratio of 0.7 mL MeOH/g soil.

Received on ice at 0˚C, in satisfactory condition.

Sampled: 4/6/20 10:00

Parameter	Result	Reporting Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
Unadjusted C5-C8 Aliphatics	< 5.5	5.5	ug/g	1	LMM	4/8/20	12628	4/9/20	12:49	MA VPH
Unadjusted C9-C12 Aliphatics	< 5.5	5.5	ug/g	1	LMM	4/8/20	12628	4/9/20	12:49	MA VPH
methyl t-butyl ether (MTBE)	< 0.11	0.11	ug/g	1	LMM	4/8/20	12628	4/9/20	12:49	MA VPH
benzene	< 0.11	0.11	ug/g	1	LMM	4/8/20	12628	4/9/20	12:49	MA VPH
toluene	< 0.11	0.11	ug/g	1	LMM	4/8/20	12628	4/9/20	12:49	MA VPH
ethylbenzene	< 0.11	0.11	ug/g	1	LMM	4/8/20	12628	4/9/20	12:49	MA VPH
m&p-xylenes	< 0.11	0.11	ug/g	1	LMM	4/8/20	12628	4/9/20	12:49	MA VPH
o-xylene	< 0.11	0.11	ug/g	1	LMM	4/8/20	12628	4/9/20	12:49	MA VPH
naphthalene	< 0.28	0.28	ug/g	1	LMM	4/8/20	12628	4/9/20	12:49	MA VPH
C5-C8 Aliphatics	< 5.5	5.5	ug/g	1	LMM	4/8/20	12628	4/9/20	12:49	MA VPH
C9-C12 Aliphatics	< 5.5	5.5	ug/g	1	LMM	4/8/20	12628	4/9/20	12:49	MA VPH
C9-C10 Aromatics	< 5.5	5.5	ug/g	1	LMM	4/8/20	12628	4/9/20	12:49	MA VPH
Surrogate Recovery		**Limits**								
2,5-dibromotoluene as Aromatic SUR	**108**	70-130	%	1	LMM	4/8/20	12628	4/9/20	12:49	MA VPH
2,5-dibromotoluene as Aliphatic SUR	**108**	70-130	%	1	LMM	4/8/20	12628	4/9/20	12:49	MA VPH
a,a,a-trifluorotoluene SUR	**91**	70-130	%	1	LMM	4/8/20	12628	4/9/20	12:49	MA VPH

Hydrocarbon Range data exclude concentrations of any surrogate(s) and/or internal standards eluting in that range.

C5-C8 Aliphatic Hydrocarbons exclude the concentration of target analytes eluting in that range.

C9-C12 Aliphatic Hydrocarbons exclude concentration of target analytes eluting in that range AND C9-C10 Aromatics.

Project ID: Cedar Woods 2180311

Job ID: 52498

Sample#: 52498-006

Sample ID: SB-105 (5-8')

Matrix: Solid Percent Dry: 88% Results expressed on a dry weight basis.

Samples prepared in methanol at a ratio of 0.65 mL MeOH/g soil.

Received on ice at 0˚C, in satisfactory condition.

Sampled: 4/6/20 11:00

Parameter	Result	Reporting Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
Unadjusted C5-C8 Aliphatics	< 4.3	4.3	ug/g	1	LMM	4/8/20	12628	4/9/20	13:19	MA VPH
Unadjusted C9-C12 Aliphatics	< 4.3	4.3	ug/g	1	LMM	4/8/20	12628	4/9/20	13:19	MA VPH
methyl t-butyl ether (MTBE)	< 0.087	0.087	ug/g	1	LMM	4/8/20	12628	4/9/20	13:19	MA VPH
benzene	< 0.087	0.087	ug/g	1	LMM	4/8/20	12628	4/9/20	13:19	MA VPH
toluene	< 0.087	0.087	ug/g	1	LMM	4/8/20	12628	4/9/20	13:19	MA VPH
ethylbenzene	< 0.087	0.087	ug/g	1	LMM	4/8/20	12628	4/9/20	13:19	MA VPH
m&p-xylenes	< 0.087	0.087	ug/g	1	LMM	4/8/20	12628	4/9/20	13:19	MA VPH
o-xylene	< 0.087	0.087	ug/g	1	LMM	4/8/20	12628	4/9/20	13:19	MA VPH
naphthalene	< 0.22	0.22	ug/g	1	LMM	4/8/20	12628	4/9/20	13:19	MA VPH
C5-C8 Aliphatics	< 4.3	4.3	ug/g	1	LMM	4/8/20	12628	4/9/20	13:19	MA VPH
C9-C12 Aliphatics	< 4.3	4.3	ug/g	1	LMM	4/8/20	12628	4/9/20	13:19	MA VPH
C9-C10 Aromatics	< 4.3	4.3	ug/g	1	LMM	4/8/20	12628	4/9/20	13:19	MA VPH
Surrogate Recovery		**Limits**								
2,5-dibromotoluene as Aromatic SUR	**107**	70-130	%	1	LMM	4/8/20	12628	4/9/20	13:19	MA VPH
2,5-dibromotoluene as Aliphatic SUR	**107**	70-130	%	1	LMM	4/8/20	12628	4/9/20	13:19	MA VPH
a,a,a-trifluorotoluene SUR	**99**	70-130	%	1	LMM	4/8/20	12628	4/9/20	13:19	MA VPH

Hydrocarbon Range data exclude concentrations of any surrogate(s) and/or internal standards eluting in that range.

C5-C8 Aliphatic Hydrocarbons exclude the concentration of target analytes eluting in that range.

C9-C12 Aliphatic Hydrocarbons exclude concentration of target analytes eluting in that range AND C9-C10 Aromatics.

Project ID: Cedar Woods 2180311
Job ID: 52498
Sample#: 52498-009
Sample ID: SB-102 (11-14')
Matrix: Solid Percent Dry: 40% Results expressed on a dry weight basis.
Samples prepared in methanol at a ratio of 0.65 mL MeOH/g soil.
Received on ice at 0˚C, in satisfactory condition.
Sampled: 4/6/20 11:40

Parameter	Result	Reporting Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
Unadjusted C5-C8 Aliphatics	< 16	16	ug/g	1	LMM	4/8/20	12628	4/9/20	13:49	MA VPH
Unadjusted C9-C12 Aliphatics	< 16	16	ug/g	1	LMM	4/8/20	12628	4/9/20	13:49	MA VPH
methyl t-butyl ether (MTBE)	< 0.31	0.31	ug/g	1	LMM	4/8/20	12628	4/9/20	13:49	MA VPH
benzene	< 0.31	0.31	ug/g	1	LMM	4/8/20	12628	4/9/20	13:49	MA VPH
toluene	< 0.31	0.31	ug/g	1	LMM	4/8/20	12628	4/9/20	13:49	MA VPH
ethylbenzene	< 0.31	0.31	ug/g	1	LMM	4/8/20	12628	4/9/20	13:49	MA VPH
m&p-xylenes	< 0.31	0.31	ug/g	1	LMM	4/8/20	12628	4/9/20	13:49	MA VPH
o-xylene	< 0.31	0.31	ug/g	1	LMM	4/8/20	12628	4/9/20	13:49	MA VPH
naphthalene	< 0.78	0.78	ug/g	1	LMM	4/8/20	12628	4/9/20	13:49	MA VPH
C5-C8 Aliphatics	< 16	16	ug/g	1	LMM	4/8/20	12628	4/9/20	13:49	MA VPH
C9-C12 Aliphatics	< 16	16	ug/g	1	LMM	4/8/20	12628	4/9/20	13:49	MA VPH
C9-C10 Aromatics	< 16	16	ug/g	1	LMM	4/8/20	12628	4/9/20	13:49	MA VPH
Surrogate Recovery		**Limits**								
2,5-dibromotoluene as Aromatic SUR	**110**	70-130	%	1	LMM	4/8/20	12628	4/9/20	13:49	MA VPH
2,5-dibromotoluene as Aliphatic SUR	**110**	70-130	%	1	LMM	4/8/20	12628	4/9/20	13:49	MA VPH
a,a,a-trifluorotoluene SUR	**106**	70-130	%	1	LMM	4/8/20	12628	4/9/20	13:49	MA VPH

Hydrocarbon Range data exclude concentrations of any surrogate(s) and/or internal standards eluting in that range.
C5-C8 Aliphatic Hydrocarbons exclude the concentration of target analytes eluting in that range.
C9-C12 Aliphatic Hydrocarbons exclude concentration of target analytes eluting in that range AND C9-C10 Aromatics.

Project ID: Cedar Woods 2180311
Job ID: 52498
Sample#: 52498-011
Sample ID: SB-101 (9-12')
Matrix: Solid Percent Dry: 74% Results expressed on a dry weight basis.
Samples prepared in methanol at a ratio of 0.67 mL MeOH/g soil.
Received on ice at 0˚C, in satisfactory condition.
Sampled: 4/6/20 13:05

Parameter	Result	Reporting Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
Unadjusted C5-C8 Aliphatics	< 6.3	6.3	ug/g	1	LMM	4/8/20	12628	4/9/20	14:19	MA VPH
Unadjusted C9-C12 Aliphatics	< 6.3	6.3	ug/g	1	LMM	4/8/20	12628	4/9/20	14:19	MA VPH
methyl t-butyl ether (MTBE)	< 0.13	0.13	ug/g	1	LMM	4/8/20	12628	4/9/20	14:19	MA VPH
benzene	< 0.13	0.13	ug/g	1	LMM	4/8/20	12628	4/9/20	14:19	MA VPH
toluene	< 0.13	0.13	ug/g	1	LMM	4/8/20	12628	4/9/20	14:19	MA VPH
ethylbenzene	< 0.13	0.13	ug/g	1	LMM	4/8/20	12628	4/9/20	14:19	MA VPH
m&p-xylenes	< 0.13	0.13	ug/g	1	LMM	4/8/20	12628	4/9/20	14:19	MA VPH
o-xylene	< 0.13	0.13	ug/g	1	LMM	4/8/20	12628	4/9/20	14:19	MA VPH
naphthalene	< 0.31	0.31	ug/g	1	LMM	4/8/20	12628	4/9/20	14:19	MA VPH
C5-C8 Aliphatics	< 6.3	6.3	ug/g	1	LMM	4/8/20	12628	4/9/20	14:19	MA VPH
C9-C12 Aliphatics	< 6.3	6.3	ug/g	1	LMM	4/8/20	12628	4/9/20	14:19	MA VPH
C9-C10 Aromatics	< 6.3	6.3	ug/g	1	LMM	4/8/20	12628	4/9/20	14:19	MA VPH
Surrogate Recovery		**Limits**								
2,5-dibromotoluene as Aromatic SUR	**102**	70-130	%	1	LMM	4/8/20	12628	4/9/20	14:19	MA VPH
2,5-dibromotoluene as Aliphatic SUR	**103**	70-130	%	1	LMM	4/8/20	12628	4/9/20	14:19	MA VPH
a,a,a-trifluorotoluene SUR	**69** *	70-130	%	1	LMM	4/8/20	12628	4/9/20	14:19	MA VPH

**** This surrogate showed recovery outside the acceptance limits.***

Hydrocarbon Range data exclude concentrations of any surrogate(s) and/or internal standards eluting in that range.

C5-C8 Aliphatic Hydrocarbons exclude the concentration of target analytes eluting in that range.

C9-C12 Aliphatic Hydrocarbons exclude concentration of target analytes eluting in that range AND C9-C10 Aromatics.

Project ID: Cedar Woods 2180311

Job ID: 52498

Sample#: 52498-014

Sample ID: SB-103 (7-10')

Matrix: Solid Percent Dry: 76.8% Results expressed on a dry weight basis.

Samples prepared in methanol at a ratio of 0.66 mL MeOH/g soil.

Received on ice at 0˚C, in satisfactory condition.

Sampled: 4/6/20 12:25

Parameter	Result	Reporting Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
Unadjusted C5-C8 Aliphatics	< 5.8	5.8	ug/g	1	LMM	4/8/20	12628	4/9/20	14:49	MA VPH
Unadjusted C9-C12 Aliphatics	< 5.8	5.8	ug/g	1	LMM	4/8/20	12628	4/9/20	14:49	MA VPH
methyl t-butyl ether (MTBE)	< 0.12	0.12	ug/g	1	LMM	4/8/20	12628	4/9/20	14:49	MA VPH
benzene	< 0.12	0.12	ug/g	1	LMM	4/8/20	12628	4/9/20	14:49	MA VPH
toluene	< 0.12	0.12	ug/g	1	LMM	4/8/20	12628	4/9/20	14:49	MA VPH
ethylbenzene	< 0.12	0.12	ug/g	1	LMM	4/8/20	12628	4/9/20	14:49	MA VPH
m&p-xylenes	< 0.12	0.12	ug/g	1	LMM	4/8/20	12628	4/9/20	14:49	MA VPH
o-xylene	< 0.12	0.12	ug/g	1	LMM	4/8/20	12628	4/9/20	14:49	MA VPH
naphthalene	< 0.29	0.29	ug/g	1	LMM	4/8/20	12628	4/9/20	14:49	MA VPH
C5-C8 Aliphatics	< 5.8	5.8	ug/g	1	LMM	4/8/20	12628	4/9/20	14:49	MA VPH
C9-C12 Aliphatics	< 5.8	5.8	ug/g	1	LMM	4/8/20	12628	4/9/20	14:49	MA VPH
C9-C10 Aromatics	< 5.8	5.8	ug/g	1	LMM	4/8/20	12628	4/9/20	14:49	MA VPH
Surrogate Recovery		**Limits**								
2,5-dibromotoluene as Aromatic SUR	**104**	70-130	%	1	LMM	4/8/20	12628	4/9/20	14:49	MA VPH
2,5-dibromotoluene as Aliphatic SUR	**105**	70-130	%	1	LMM	4/8/20	12628	4/9/20	14:49	MA VPH
a,a,a-trifluorotoluene SUR	**78**	70-130	%	1	LMM	4/8/20	12628	4/9/20	14:49	MA VPH

Hydrocarbon Range data exclude concentrations of any surrogate(s) and/or internal standards eluting in that range.

C5-C8 Aliphatic Hydrocarbons exclude the concentration of target analytes eluting in that range.

C9-C12 Aliphatic Hydrocarbons exclude concentration of target analytes eluting in that range AND C9-C10 Aromatics.

Project ID: Cedar Woods 2180311

Job ID: 52498

Sample#: 52498-015

Sample ID: Trip Blank

Matrix: Solid

Samples prepared in methanol within a 1:1 ratio +/- 25% mL MeOH/g soil

Received on ice at 0˚C, in satisfactory condition.

Sampled: 4/6/20 0:00

Parameter	Result	Reporting Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
Unadjusted C5-C8 Aliphatics	< 5.0	5.0	ug/g	1	LMM	4/8/20	12628	4/9/20	11:49	MA VPH
Unadjusted C9-C12 Aliphatics	< 5.0	5.0	ug/g	1	LMM	4/8/20	12628	4/9/20	11:49	MA VPH
methyl t-butyl ether (MTBE)	< 0.10	0.10	ug/g	1	LMM	4/8/20	12628	4/9/20	11:49	MA VPH
benzene	< 0.10	0.10	ug/g	1	LMM	4/8/20	12628	4/9/20	11:49	MA VPH
toluene	< 0.10	0.10	ug/g	1	LMM	4/8/20	12628	4/9/20	11:49	MA VPH
ethylbenzene	< 0.10	0.10	ug/g	1	LMM	4/8/20	12628	4/9/20	11:49	MA VPH
m&p-xylenes	< 0.10	0.10	ug/g	1	LMM	4/8/20	12628	4/9/20	11:49	MA VPH
o-xylene	< 0.10	0.10	ug/g	1	LMM	4/8/20	12628	4/9/20	11:49	MA VPH
naphthalene	< 0.25	0.25	ug/g	1	LMM	4/8/20	12628	4/9/20	11:49	MA VPH
C5-C8 Aliphatics	< 5.0	5.0	ug/g	1	LMM	4/8/20	12628	4/9/20	11:49	MA VPH
C9-C12 Aliphatics	< 5.0	5.0	ug/g	1	LMM	4/8/20	12628	4/9/20	11:49	MA VPH
C9-C10 Aromatics	< 5.0	5.0	ug/g	1	LMM	4/8/20	12628	4/9/20	11:49	MA VPH
Surrogate Recovery		**Limits**								
2,5-dibromotoluene as Aromatic SUR	**105**	70-130	%	1	LMM	4/8/20	12628	4/9/20	11:49	MA VPH
2,5-dibromotoluene as Aliphatic SUR	**105**	70-130	%	1	LMM	4/8/20	12628	4/9/20	11:49	MA VPH
a,a,a-trifluorotoluene SUR	**90**	70-130	%	1	LMM	4/8/20	12628	4/9/20	11:49	MA VPH

Hydrocarbon Range data exclude concentrations of any surrogate(s) and/or internal standards eluting in that range.

C5-C8 Aliphatic Hydrocarbons exclude the concentration of target analytes eluting in that range.

C9-C12 Aliphatic Hydrocarbons exclude concentration of target analytes eluting in that range AND C9-C10 Aromatics.

Project ID: Cedar Woods 2180311
Job ID: 52498
Sample#: 52498-002
Sample ID: SB-106 (0-3')
Matrix: Solid Percent Dry: 89.1% Results expressed on a dry weight basis.
Sampled: 4/6/20 9:40

Parameter	Result	Reporting Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
naphthalene	< 0.21	0.21	ug/g	1	CL	4/7/20	12625	4/9/20	7:07	MA EPH
2-methylnaphthalene	< 0.21	0.21	ug/g	1	CL	4/7/20	12625	4/9/20	7:07	MA EPH
phenanthrene	**0.44**	0.21	ug/g	1	CL	4/7/20	12625	4/9/20	7:07	MA EPH
acenaphthene	< 0.21	0.21	ug/g	1	CL	4/7/20	12625	4/9/20	7:07	MA EPH
acenaphthylene	< 0.21	0.21	ug/g	1	CL	4/7/20	12625	4/9/20	7:07	MA EPH
fluorene	< 0.21	0.21	ug/g	1	CL	4/7/20	12625	4/9/20	7:07	MA EPH
anthracene	< 0.21	0.21	ug/g	1	CL	4/7/20	12625	4/9/20	7:07	MA EPH
fluoranthene	**0.81**	0.21	ug/g	1	CL	4/7/20	12625	4/9/20	7:07	MA EPH
pyrene	**0.88**	0.21	ug/g	1	CL	4/7/20	12625	4/9/20	7:07	MA EPH
benzo(a)anthracene	**0.42**	0.21	ug/g	1	CL	4/7/20	12625	4/9/20	7:07	MA EPH
chrysene	**0.52**	0.21	ug/g	1	CL	4/7/20	12625	4/9/20	7:07	MA EPH
benzo(b)fluoranthene	**0.35**	0.21	ug/g	1	CL	4/7/20	12625	4/9/20	7:07	MA EPH
benzo(k)fluoranthene	**0.39**	0.21	ug/g	1	CL	4/7/20	12625	4/9/20	7:07	MA EPH
benzo(a)pyrene	**0.40**	0.21	ug/g	1	CL	4/7/20	12625	4/9/20	7:07	MA EPH
indeno(1,2,3-cd)pyrene	**0.36**	0.21	ug/g	1	CL	4/7/20	12625	4/9/20	7:07	MA EPH
dibenzo(a,h)anthracene	< 0.21	0.21	ug/g	1	CL	4/7/20	12625	4/9/20	7:07	MA EPH
benzo(g,h,i)perylene	**0.46**	0.21	ug/g	1	CL	4/7/20	12625	4/9/20	7:07	MA EPH
Unadjusted C11-C22 Aromatics	**49**	21	ug/g	1	DBV	4/7/20	12625	4/9/20	22:29	MA EPH
C9-C18 Aliphatics	< 21	21	ug/g	1	DBV	4/7/20	12625	4/9/20	22:29	MA EPH
C19-C36 Aliphatics	**91**	21	ug/g	1	DBV	4/7/20	12625	4/9/20	22:29	MA EPH
C11-C22 Aromatics	**44**	21	ug/g	1	DBV	4/7/20	12625	4/9/20	22:29	MA EPH
Surrogate Recovery		**Limits**								
1-chloro-octadecane SUR	**55**	40-140	%	1	DBV	4/7/20	12625	4/9/20	22:29	MA EPH
o-terphenyl SUR	**56**	40-140	%	1	DBV	4/7/20	12625	4/9/20	22:29	MA EPH
2-fluorobiphenyl SUR	**66**	40-140	%	1	DBV	4/7/20	12625	4/9/20	22:29	MA EPH
2-bromonaphthalene SUR	**62**	40-140	%	1	DBV	4/7/20	12625	4/9/20	22:29	MA EPH

Project ID: Cedar Woods 2180311
Job ID: 52498
Sample#: 52498-003
Sample ID: SB-106 (5-8')
Matrix: Solid Percent Dry: 81.1% Results expressed on a dry weight basis.
Sampled: 4/6/20 10:00

Parameter	Result	Reporting Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
naphthalene	< 0.47	0.47	ug/g	1	CL	4/7/20	12625	4/9/20	8:07	MA EPH
2-methylnaphthalene	< 0.47	0.47	ug/g	1	CL	4/7/20	12625	4/9/20	8:07	MA EPH
phenanthrene	< 0.47	0.47	ug/g	1	CL	4/7/20	12625	4/9/20	8:07	MA EPH
acenaphthene	< 0.47	0.47	ug/g	1	CL	4/7/20	12625	4/9/20	8:07	MA EPH
acenaphthylene	< 0.47	0.47	ug/g	1	CL	4/7/20	12625	4/9/20	8:07	MA EPH
fluorene	< 0.47	0.47	ug/g	1	CL	4/7/20	12625	4/9/20	8:07	MA EPH
anthracene	< 0.47	0.47	ug/g	1	CL	4/7/20	12625	4/9/20	8:07	MA EPH
fluoranthene	< 0.47	0.47	ug/g	1	CL	4/7/20	12625	4/9/20	8:07	MA EPH
pyrene	< 0.47	0.47	ug/g	1	CL	4/7/20	12625	4/9/20	8:07	MA EPH
benzo(a)anthracene	< 0.47	0.47	ug/g	1	CL	4/7/20	12625	4/9/20	8:07	MA EPH
chrysene	< 0.47	0.47	ug/g	1	CL	4/7/20	12625	4/9/20	8:07	MA EPH
benzo(b)fluoranthene	< 0.47	0.47	ug/g	1	CL	4/7/20	12625	4/9/20	8:07	MA EPH
benzo(k)fluoranthene	< 0.47	0.47	ug/g	1	CL	4/7/20	12625	4/9/20	8:07	MA EPH
benzo(a)pyrene	< 0.47	0.47	ug/g	1	CL	4/7/20	12625	4/9/20	8:07	MA EPH
indeno(1,2,3-cd)pyrene	< 0.47	0.47	ug/g	1	CL	4/7/20	12625	4/9/20	8:07	MA EPH
dibenzo(a,h)anthracene	< 0.47	0.47	ug/g	1	CL	4/7/20	12625	4/9/20	8:07	MA EPH
benzo(g,h,i)perylene	< 0.47	0.47	ug/g	1	CL	4/7/20	12625	4/9/20	8:07	MA EPH
Unadjusted C11-C22 Aromatics	**290**	240	ug/g	5	DBV	4/7/20	12625	4/8/20	17:17	MA EPH
C9-C18 Aliphatics	< 240	240	ug/g	5	DBV	4/7/20	12625	4/8/20	17:17	MA EPH
C19-C36 Aliphatics	**570**	240	ug/g	5	DBV	4/7/20	12625	4/8/20	17:17	MA EPH
C11-C22 Aromatics	**290**	240	ug/g	5	DBV	4/7/20	12625	4/8/20	17:17	MA EPH
Surrogate Recovery		**Limits**								
1-chloro-octadecane SUR	**17** *	40-140	%	5	DBV	4/7/20	12625	4/8/20	17:17	MA EPH
o-terphenyl SUR	**17** *	40-140	%	5	DBV	4/7/20	12625	4/8/20	17:17	MA EPH
2-fluorobiphenyl SUR	**141** *	40-140	%	5	DBV	4/7/20	12625	4/8/20	17:17	MA EPH
2-bromonaphthalene SUR	**125**	40-140	%	5	DBV	4/7/20	12625	4/8/20	17:17	MA EPH

**** The surrogate showed recovery outside the acceptance limits. Re-extraction beyond method holding time produced similar results. The re-extracted results are included.***

Project ID: Cedar Woods 2180311
Job ID: 52498
Sample#: 52498-005
Sample ID: SB-105 (0-3')
Matrix: Solid Percent Dry: 81.3% Results expressed on a dry weight basis.
Sampled: 4/6/20 10:40

Parameter	Result	Reporting Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
naphthalene	< 0.24	0.24	ug/g	1	CL	4/7/20	12625	4/9/20	3:36	MA EPH
2-methylnaphthalene	< 0.24	0.24	ug/g	1	CL	4/7/20	12625	4/9/20	3:36	MA EPH
phenanthrene	**1.5**	0.24	ug/g	1	CL	4/7/20	12625	4/9/20	3:36	MA EPH
acenaphthene	< 0.24	0.24	ug/g	1	CL	4/7/20	12625	4/9/20	3:36	MA EPH
acenaphthylene	< 0.24	0.24	ug/g	1	CL	4/7/20	12625	4/9/20	3:36	MA EPH
fluorene	< 0.24	0.24	ug/g	1	CL	4/7/20	12625	4/9/20	3:36	MA EPH
anthracene	< 0.24	0.24	ug/g	1	CL	4/7/20	12625	4/9/20	3:36	MA EPH
fluoranthene	**3.2**	0.24	ug/g	1	CL	4/7/20	12625	4/9/20	3:36	MA EPH
pyrene	**2.9**	0.24	ug/g	1	CL	4/7/20	12625	4/9/20	3:36	MA EPH
benzo(a)anthracene	**1.5**	0.24	ug/g	1	CL	4/7/20	12625	4/9/20	3:36	MA EPH
chrysene	**1.9**	0.24	ug/g	1	CL	4/7/20	12625	4/9/20	3:36	MA EPH
benzo(b)fluoranthene	**1.6**	0.24	ug/g	1	CL	4/7/20	12625	4/9/20	3:36	MA EPH
benzo(k)fluoranthene	**1.2**	0.24	ug/g	1	CL	4/7/20	12625	4/9/20	3:36	MA EPH
benzo(a)pyrene	**1.4**	0.24	ug/g	1	CL	4/7/20	12625	4/9/20	3:36	MA EPH
indeno(1,2,3-cd)pyrene	**1.1**	0.24	ug/g	1	CL	4/7/20	12625	4/9/20	3:36	MA EPH
dibenzo(a,h)anthracene	**0.38**	0.24	ug/g	1	CL	4/7/20	12625	4/9/20	3:36	MA EPH
benzo(g,h,i)perylene	**1.2**	0.24	ug/g	1	CL	4/7/20	12625	4/9/20	3:36	MA EPH
Unadjusted C11-C22 Aromatics	**150**	24	ug/g	1	DBV	4/7/20	12625	4/8/20	15:34	MA EPH
C9-C18 Aliphatics	< 24	24	ug/g	1	DBV	4/7/20	12625	4/8/20	15:34	MA EPH
C19-C36 Aliphatics	**280**	24	ug/g	1	DBV	4/7/20	12625	4/8/20	15:34	MA EPH
C11-C22 Aromatics	**130**	24	ug/g	1	DBV	4/7/20	12625	4/8/20	15:34	MA EPH
Surrogate Recovery		**Limits**								
1-chloro-octadecane SUR	**47**	40-140	%	1	DBV	4/7/20	12625	4/8/20	15:34	MA EPH
o-terphenyl SUR	**49**	40-140	%	1	DBV	4/7/20	12625	4/8/20	15:34	MA EPH
2-fluorobiphenyl SUR	**69**	40-140	%	1	DBV	4/7/20	12625	4/8/20	15:34	MA EPH
2-bromonaphthalene SUR	**67**	40-140	%	1	DBV	4/7/20	12625	4/8/20	15:34	MA EPH

Project ID: Cedar Woods 2180311
Job ID: 52498
Sample#: 52498-006
Sample ID: SB-105 (5-8')
Matrix: Solid Percent Dry: 88% Results expressed on a dry weight basis.
Sampled: 4/6/20 11:00

Parameter	Result	Reporting Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
naphthalene	< 0.22	0.22	ug/g	1	CL	4/7/20	12625	4/8/20	18:33	MA EPH
2-methylnaphthalene	< 0.22	0.22	ug/g	1	CL	4/7/20	12625	4/8/20	18:33	MA EPH
phenanthrene	< 0.22	0.22	ug/g	1	CL	4/7/20	12625	4/8/20	18:33	MA EPH
acenaphthene	< 0.22	0.22	ug/g	1	CL	4/7/20	12625	4/8/20	18:33	MA EPH
acenaphthylene	< 0.22	0.22	ug/g	1	CL	4/7/20	12625	4/8/20	18:33	MA EPH
fluorene	< 0.22	0.22	ug/g	1	CL	4/7/20	12625	4/8/20	18:33	MA EPH
anthracene	< 0.22	0.22	ug/g	1	CL	4/7/20	12625	4/8/20	18:33	MA EPH
fluoranthene	< 0.22	0.22	ug/g	1	CL	4/7/20	12625	4/8/20	18:33	MA EPH
pyrene	< 0.22	0.22	ug/g	1	CL	4/7/20	12625	4/8/20	18:33	MA EPH
benzo(a)anthracene	< 0.22	0.22	ug/g	1	CL	4/7/20	12625	4/8/20	18:33	MA EPH
chrysene	< 0.22	0.22	ug/g	1	CL	4/7/20	12625	4/8/20	18:33	MA EPH
benzo(b)fluoranthene	< 0.22	0.22	ug/g	1	CL	4/7/20	12625	4/8/20	18:33	MA EPH
benzo(k)fluoranthene	< 0.22	0.22	ug/g	1	CL	4/7/20	12625	4/8/20	18:33	MA EPH
benzo(a)pyrene	< 0.22	0.22	ug/g	1	CL	4/7/20	12625	4/8/20	18:33	MA EPH
indeno(1,2,3-cd)pyrene	< 0.22	0.22	ug/g	1	CL	4/7/20	12625	4/8/20	18:33	MA EPH
dibenzo(a,h)anthracene	< 0.22	0.22	ug/g	1	CL	4/7/20	12625	4/8/20	18:33	MA EPH
benzo(g,h,i)perylene	< 0.22	0.22	ug/g	1	CL	4/7/20	12625	4/8/20	18:33	MA EPH
Unadjusted C11-C22 Aromatics	< 22	22	ug/g	1	DBV	4/7/20	12625	4/8/20	13:18	MA EPH
C9-C18 Aliphatics	< 22	22	ug/g	1	DBV	4/7/20	12625	4/8/20	13:18	MA EPH
C19-C36 Aliphatics	**23**	22	ug/g	1	DBV	4/7/20	12625	4/8/20	13:18	MA EPH
C11-C22 Aromatics	< 22	22	ug/g	1	DBV	4/7/20	12625	4/8/20	13:18	MA EPH
Surrogate Recovery		**Limits**								
1-chloro-octadecane SUR	**58**	40-140	%	1	DBV	4/7/20	12625	4/8/20	13:18	MA EPH
o-terphenyl SUR	**58**	40-140	%	1	DBV	4/7/20	12625	4/8/20	13:18	MA EPH
2-fluorobiphenyl SUR	**66**	40-140	%	1	DBV	4/7/20	12625	4/8/20	13:18	MA EPH
2-bromonaphthalene SUR	**64**	40-140	%	1	DBV	4/7/20	12625	4/8/20	13:18	MA EPH

Project ID: Cedar Woods 2180311
Job ID: 52498
Sample#: 52498-007
Sample ID: SB-102 (0-3')
Matrix: Solid Percent Dry: 93% Results expressed on a dry weight basis.
Sampled: 4/6/20 11:45

Parameter	Result	Reporting Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
naphthalene	< 0.20	0.20	ug/g	1	CL	4/7/20	12625	4/9/20	7:37	MA EPH
2-methylnaphthalene	< 0.20	0.20	ug/g	1	CL	4/7/20	12625	4/9/20	7:37	MA EPH
phenanthrene	< 0.20	0.20	ug/g	1	CL	4/7/20	12625	4/9/20	7:37	MA EPH
acenaphthene	< 0.20	0.20	ug/g	1	CL	4/7/20	12625	4/9/20	7:37	MA EPH
acenaphthylene	< 0.20	0.20	ug/g	1	CL	4/7/20	12625	4/9/20	7:37	MA EPH
fluorene	< 0.20	0.20	ug/g	1	CL	4/7/20	12625	4/9/20	7:37	MA EPH
anthracene	< 0.20	0.20	ug/g	1	CL	4/7/20	12625	4/9/20	7:37	MA EPH
fluoranthene	< 0.20	0.20	ug/g	1	CL	4/7/20	12625	4/9/20	7:37	MA EPH
pyrene	< 0.20	0.20	ug/g	1	CL	4/7/20	12625	4/9/20	7:37	MA EPH
benzo(a)anthracene	< 0.20	0.20	ug/g	1	CL	4/7/20	12625	4/9/20	7:37	MA EPH
chrysene	< 0.20	0.20	ug/g	1	CL	4/7/20	12625	4/9/20	7:37	MA EPH
benzo(b)fluoranthene	< 0.20	0.20	ug/g	1	CL	4/7/20	12625	4/9/20	7:37	MA EPH
benzo(k)fluoranthene	< 0.20	0.20	ug/g	1	CL	4/7/20	12625	4/9/20	7:37	MA EPH
benzo(a)pyrene	< 0.20	0.20	ug/g	1	CL	4/7/20	12625	4/9/20	7:37	MA EPH
indeno(1,2,3-cd)pyrene	< 0.20	0.20	ug/g	1	CL	4/7/20	12625	4/9/20	7:37	MA EPH
dibenzo(a,h)anthracene	< 0.20	0.20	ug/g	1	CL	4/7/20	12625	4/9/20	7:37	MA EPH
benzo(g,h,i)perylene	< 0.20	0.20	ug/g	1	CL	4/7/20	12625	4/9/20	7:37	MA EPH
Unadjusted C11-C22 Aromatics	**51**	20	ug/g	1	DBV	4/7/20	12625	4/9/20	23:03	MA EPH
C9-C18 Aliphatics	< 20	20	ug/g	1	DBV	4/7/20	12625	4/9/20	23:03	MA EPH
C19-C36 Aliphatics	**130**	20	ug/g	1	DBV	4/7/20	12625	4/9/20	23:03	MA EPH
C11-C22 Aromatics	**50**	20	ug/g	1	DBV	4/7/20	12625	4/9/20	23:03	MA EPH
Surrogate Recovery		**Limits**								
1-chloro-octadecane SUR	**43**	40-140	%	1	DBV	4/7/20	12625	4/9/20	23:03	MA EPH
o-terphenyl SUR	**44**	40-140	%	1	DBV	4/7/20	12625	4/9/20	23:03	MA EPH
2-fluorobiphenyl SUR	**66**	40-140	%	1	DBV	4/7/20	12625	4/9/20	23:03	MA EPH
2-bromonaphthalene SUR	**62**	40-140	%	1	DBV	4/7/20	12625	4/9/20	23:03	MA EPH

Project ID: Cedar Woods 2180311
Job ID: 52498
Sample#: 52498-009
Sample ID: SB-102 (11-14')
Matrix: Solid Percent Dry: 40% Results expressed on a dry weight basis.
Sampled: 4/6/20 11:40

Parameter	Result	Reporting Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
naphthalene	< 0.46	0.46	ug/g	1	CL	4/7/20	12625	4/9/20	2:36	MA EPH
2-methylnaphthalene	< 0.46	0.46	ug/g	1	CL	4/7/20	12625	4/9/20	2:36	MA EPH
phenanthrene	< 0.46	0.46	ug/g	1	CL	4/7/20	12625	4/9/20	2:36	MA EPH
acenaphthene	< 0.46	0.46	ug/g	1	CL	4/7/20	12625	4/9/20	2:36	MA EPH
acenaphthylene	< 0.46	0.46	ug/g	1	CL	4/7/20	12625	4/9/20	2:36	MA EPH
fluorene	< 0.46	0.46	ug/g	1	CL	4/7/20	12625	4/9/20	2:36	MA EPH
anthracene	< 0.46	0.46	ug/g	1	CL	4/7/20	12625	4/9/20	2:36	MA EPH
fluoranthene	**0.48**	0.46	ug/g	1	CL	4/7/20	12625	4/9/20	2:36	MA EPH
pyrene	**0.56**	0.46	ug/g	1	CL	4/7/20	12625	4/9/20	2:36	MA EPH
benzo(a)anthracene	< 0.46	0.46	ug/g	1	CL	4/7/20	12625	4/9/20	2:36	MA EPH
chrysene	< 0.46	0.46	ug/g	1	CL	4/7/20	12625	4/9/20	2:36	MA EPH
benzo(b)fluoranthene	< 0.46	0.46	ug/g	1	CL	4/7/20	12625	4/9/20	2:36	MA EPH
benzo(k)fluoranthene	< 0.46	0.46	ug/g	1	CL	4/7/20	12625	4/9/20	2:36	MA EPH
benzo(a)pyrene	< 0.46	0.46	ug/g	1	CL	4/7/20	12625	4/9/20	2:36	MA EPH
indeno(1,2,3-cd)pyrene	< 0.46	0.46	ug/g	1	CL	4/7/20	12625	4/9/20	2:36	MA EPH
dibenzo(a,h)anthracene	< 0.46	0.46	ug/g	1	CL	4/7/20	12625	4/9/20	2:36	MA EPH
benzo(g,h,i)perylene	< 0.46	0.46	ug/g	1	CL	4/7/20	12625	4/9/20	2:36	MA EPH
Unadjusted C11-C22 Aromatics	< 46	46	ug/g	1	DBV	4/7/20	12625	4/8/20	15:00	MA EPH
C9-C18 Aliphatics	< 46	46	ug/g	1	DBV	4/7/20	12625	4/8/20	15:00	MA EPH
C19-C36 Aliphatics	**80**	46	ug/g	1	DBV	4/7/20	12625	4/8/20	15:00	MA EPH
C11-C22 Aromatics	< 46	46	ug/g	1	DBV	4/7/20	12625	4/8/20	15:00	MA EPH
Surrogate Recovery		**Limits**								
1-chloro-octadecane SUR	**54**	40-140	%	1	DBV	4/7/20	12625	4/8/20	15:00	MA EPH
o-terphenyl SUR	**58**	40-140	%	1	DBV	4/7/20	12625	4/8/20	15:00	MA EPH
2-fluorobiphenyl SUR	**66**	40-140	%	1	DBV	4/7/20	12625	4/8/20	15:00	MA EPH
2-bromonaphthalene SUR	**62**	40-140	%	1	DBV	4/7/20	12625	4/8/20	15:00	MA EPH

Project ID: Cedar Woods 2180311
Job ID: 52498
Sample#: 52498-010
Sample ID: SB-101 (0-3')
Matrix: Solid Percent Dry: 90.7% Results expressed on a dry weight basis.
Sampled: 4/6/20 12:55

Parameter	Result	Reporting Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
naphthalene	< 0.21	0.21	ug/g	1	CL	4/7/20	12625	4/8/20	22:35	MA EPH
2-methylnaphthalene	< 0.21	0.21	ug/g	1	CL	4/7/20	12625	4/8/20	22:35	MA EPH
phenanthrene	< 0.21	0.21	ug/g	1	CL	4/7/20	12625	4/8/20	22:35	MA EPH
acenaphthene	< 0.21	0.21	ug/g	1	CL	4/7/20	12625	4/8/20	22:35	MA EPH
acenaphthylene	< 0.21	0.21	ug/g	1	CL	4/7/20	12625	4/8/20	22:35	MA EPH
fluorene	< 0.21	0.21	ug/g	1	CL	4/7/20	12625	4/8/20	22:35	MA EPH
anthracene	< 0.21	0.21	ug/g	1	CL	4/7/20	12625	4/8/20	22:35	MA EPH
fluoranthene	**0.22**	0.21	ug/g	1	CL	4/7/20	12625	4/8/20	22:35	MA EPH
pyrene	**0.24**	0.21	ug/g	1	CL	4/7/20	12625	4/8/20	22:35	MA EPH
benzo(a)anthracene	< 0.21	0.21	ug/g	1	CL	4/7/20	12625	4/8/20	22:35	MA EPH
chrysene	< 0.21	0.21	ug/g	1	CL	4/7/20	12625	4/8/20	22:35	MA EPH
benzo(b)fluoranthene	< 0.21	0.21	ug/g	1	CL	4/7/20	12625	4/8/20	22:35	MA EPH
benzo(k)fluoranthene	< 0.21	0.21	ug/g	1	CL	4/7/20	12625	4/8/20	22:35	MA EPH
benzo(a)pyrene	< 0.21	0.21	ug/g	1	CL	4/7/20	12625	4/8/20	22:35	MA EPH
indeno(1,2,3-cd)pyrene	< 0.21	0.21	ug/g	1	CL	4/7/20	12625	4/8/20	22:35	MA EPH
dibenzo(a,h)anthracene	< 0.21	0.21	ug/g	1	CL	4/7/20	12625	4/8/20	22:35	MA EPH
benzo(g,h,i)perylene	< 0.21	0.21	ug/g	1	CL	4/7/20	12625	4/8/20	22:35	MA EPH
Unadjusted C11-C22 Aromatics	< 21	21	ug/g	1	DBV	4/7/20	12625	4/8/20	13:52	MA EPH
C9-C18 Aliphatics	< 21	21	ug/g	1	DBV	4/7/20	12625	4/8/20	13:52	MA EPH
C19-C36 Aliphatics	**35**	21	ug/g	1	DBV	4/7/20	12625	4/8/20	13:52	MA EPH
C11-C22 Aromatics	< 21	21	ug/g	1	DBV	4/7/20	12625	4/8/20	13:52	MA EPH
Surrogate Recovery		**Limits**								
1-chloro-octadecane SUR	**61**	40-140	%	1	DBV	4/7/20	12625	4/8/20	13:52	MA EPH
o-terphenyl SUR	**63**	40-140	%	1	DBV	4/7/20	12625	4/8/20	13:52	MA EPH
2-fluorobiphenyl SUR	**67**	40-140	%	1	DBV	4/7/20	12625	4/8/20	13:52	MA EPH
2-bromonaphthalene SUR	**64**	40-140	%	1	DBV	4/7/20	12625	4/8/20	13:52	MA EPH

Project ID: Cedar Woods 2180311
Job ID: 52498
Sample#: 52498-011
Sample ID: SB-101 (9-12')
Matrix: Solid Percent Dry: 74% Results expressed on a dry weight basis.
Sampled: 4/6/20 13:05

Parameter	Result	Reporting Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
naphthalene	< 0.25	0.25	ug/g	1	CL	4/7/20	12625	4/9/20	3:06	MA EPH
2-methylnaphthalene	< 0.25	0.25	ug/g	1	CL	4/7/20	12625	4/9/20	3:06	MA EPH
phenanthrene	**2.1**	0.25	ug/g	1	CL	4/7/20	12625	4/9/20	3:06	MA EPH
acenaphthene	< 0.25	0.25	ug/g	1	CL	4/7/20	12625	4/9/20	3:06	MA EPH
acenaphthylene	< 0.25	0.25	ug/g	1	CL	4/7/20	12625	4/9/20	3:06	MA EPH
fluorene	< 0.25	0.25	ug/g	1	CL	4/7/20	12625	4/9/20	3:06	MA EPH
anthracene	**0.40**	0.25	ug/g	1	CL	4/7/20	12625	4/9/20	3:06	MA EPH
fluoranthene	**2.1**	0.25	ug/g	1	CL	4/7/20	12625	4/9/20	3:06	MA EPH
pyrene	**2.3**	0.25	ug/g	1	CL	4/7/20	12625	4/9/20	3:06	MA EPH
benzo(a)anthracene	**0.98**	0.25	ug/g	1	CL	4/7/20	12625	4/9/20	3:06	MA EPH
chrysene	**1.0**	0.25	ug/g	1	CL	4/7/20	12625	4/9/20	3:06	MA EPH
benzo(b)fluoranthene	**0.88**	0.25	ug/g	1	CL	4/7/20	12625	4/9/20	3:06	MA EPH
benzo(k)fluoranthene	**0.71**	0.25	ug/g	1	CL	4/7/20	12625	4/9/20	3:06	MA EPH
benzo(a)pyrene	**0.89**	0.25	ug/g	1	CL	4/7/20	12625	4/9/20	3:06	MA EPH
indeno(1,2,3-cd)pyrene	**0.63**	0.25	ug/g	1	CL	4/7/20	12625	4/9/20	3:06	MA EPH
dibenzo(a,h)anthracene	< 0.25	0.25	ug/g	1	CL	4/7/20	12625	4/9/20	3:06	MA EPH
benzo(g,h,i)perylene	**0.72**	0.25	ug/g	1	CL	4/7/20	12625	4/9/20	3:06	MA EPH
Unadjusted C11-C22 Aromatics	**54**	25	ug/g	1	DBV	4/7/20	12625	4/8/20	14:26	MA EPH
C9-C18 Aliphatics	< 25	25	ug/g	1	DBV	4/7/20	12625	4/8/20	14:26	MA EPH
C19-C36 Aliphatics	**82**	25	ug/g	1	DBV	4/7/20	12625	4/8/20	14:26	MA EPH
C11-C22 Aromatics	**41**	25	ug/g	1	DBV	4/7/20	12625	4/8/20	14:26	MA EPH
Surrogate Recovery		**Limits**								
1-chloro-octadecane SUR	**57**	40-140	%	1	DBV	4/7/20	12625	4/8/20	14:26	MA EPH
o-terphenyl SUR	**63**	40-140	%	1	DBV	4/7/20	12625	4/8/20	14:26	MA EPH
2-fluorobiphenyl SUR	**69**	40-140	%	1	DBV	4/7/20	12625	4/8/20	14:26	MA EPH
2-bromonaphthalene SUR	**67**	40-140	%	1	DBV	4/7/20	12625	4/8/20	14:26	MA EPH

Project ID: Cedar Woods 2180311
Job ID: 52498
Sample#: 52498-016
Sample ID: SB-106 (5-8')REX
Matrix: Solid Percent Dry: 81.1% Results expressed on a dry weight basis.
Sampled: 4/6/20 10:00

Parameter	Result	Reporting Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
naphthalene	< 2.4	2.4	ug/g	5	CL	4/9/20	12630	4/9/20	21:15	MA EPH
2-methylnaphthalene	< 2.4	2.4	ug/g	5	CL	4/9/20	12630	4/9/20	21:15	MA EPH
phenanthrene	< 2.4	2.4	ug/g	5	CL	4/9/20	12630	4/9/20	21:15	MA EPH
acenaphthene	< 2.4	2.4	ug/g	5	CL	4/9/20	12630	4/9/20	21:15	MA EPH
acenaphthylene	< 2.4	2.4	ug/g	5	CL	4/9/20	12630	4/9/20	21:15	MA EPH
fluorene	< 2.4	2.4	ug/g	5	CL	4/9/20	12630	4/9/20	21:15	MA EPH
anthracene	< 2.4	2.4	ug/g	5	CL	4/9/20	12630	4/9/20	21:15	MA EPH
fluoranthene	< 2.4	2.4	ug/g	5	CL	4/9/20	12630	4/9/20	21:15	MA EPH
pyrene	< 2.4	2.4	ug/g	5	CL	4/9/20	12630	4/9/20	21:15	MA EPH
benzo(a)anthracene	< 2.4	2.4	ug/g	5	CL	4/9/20	12630	4/9/20	21:15	MA EPH
chrysene	< 2.4	2.4	ug/g	5	CL	4/9/20	12630	4/9/20	21:15	MA EPH
benzo(b)fluoranthene	< 2.4	2.4	ug/g	5	CL	4/9/20	12630	4/9/20	21:15	MA EPH
benzo(k)fluoranthene	< 2.4	2.4	ug/g	5	CL	4/9/20	12630	4/9/20	21:15	MA EPH
benzo(a)pyrene	< 2.4	2.4	ug/g	5	CL	4/9/20	12630	4/9/20	21:15	MA EPH
indeno(1,2,3-cd)pyrene	< 2.4	2.4	ug/g	5	CL	4/9/20	12630	4/9/20	21:15	MA EPH
dibenzo(a,h)anthracene	< 2.4	2.4	ug/g	5	CL	4/9/20	12630	4/9/20	21:15	MA EPH
benzo(g,h,i)perylene	< 2.4	2.4	ug/g	5	CL	4/9/20	12630	4/9/20	21:15	MA EPH
Unadjusted C11-C22 Aromatics	**410**	240	ug/g	5	DBV	4/9/20	12630	4/9/20	23:38	MA EPH
C9-C18 Aliphatics	< 240	240	ug/g	5	DBV	4/9/20	12630	4/9/20	23:38	MA EPH
C19-C36 Aliphatics	**830**	240	ug/g	5	DBV	4/9/20	12630	4/9/20	23:38	MA EPH
C11-C22 Aromatics	**410**	240	ug/g	5	DBV	4/9/20	12630	4/9/20	23:38	MA EPH
Surrogate Recovery		**Limits**								
1-chloro-octadecane SUR	**21** *	40-140	%	5	DBV	4/9/20	12630	4/9/20	23:38	MA EPH
o-terphenyl SUR	**23** *	40-140	%	5	DBV	4/9/20	12630	4/9/20	23:38	MA EPH
2-fluorobiphenyl SUR	**118**	40-140	%	5	DBV	4/9/20	12630	4/9/20	23:38	MA EPH
2-bromonaphthalene SUR	**107**	40-140	%	5	DBV	4/9/20	12630	4/9/20	23:38	MA EPH

**** The surrogate showed recovery outside the acceptance limits.***
Note: Dilution was required due to sample matrix interference.

Project ID: Cedar Woods 2180311

Job ID: 52498

Sample#: 52498-002

Sample ID: SB-106 (0-3')

Matrix: Solid Percent Dry: 89.1% Results expressed on a dry weight basis.

Sampled: 4/6/20 9:40

Parameter	Result	Reporting Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
Antimony	**0.90**	0.56	ug/g	5	AGN	4/8/20	12626	4/10/20	0:52	SW3051A6020A
Arsenic	**4.0**	2.8	ug/g	5	AGN	4/8/20	12626	4/9/20	2:01	SW3051A6020A
Barium	**200** DM	5.6	ug/g	5	AGN	4/8/20	12626	4/10/20	0:52	SW3051A6020A
Beryllium	< 0.56	0.56	ug/g	5	AGN	4/8/20	12626	4/9/20	2:01	SW3051A6020A
Cadmium	< 0.56	0.56	ug/g	5	AGN	4/8/20	12626	4/9/20	2:01	SW3051A6020A
Chromium	**16**	5.6	ug/g	5	AGN	4/8/20	12626	4/10/20	0:52	SW3051A6020A
Lead	**120**	2.8	ug/g	5	AGN	4/8/20	12626	4/10/20	0:52	SW3051A6020A
Mercury	**0.17**	0.14	ug/g	1	AGN	4/7/20	12622	4/7/20	18:25	SW7471B
Nickel	**12**	5.6	ug/g	5	AGN	4/8/20	12626	4/10/20	0:52	SW3051A6020A
Selenium	< 5.6	5.6	ug/g	5	AGN	4/8/20	12626	4/9/20	2:01	SW3051A6020A
Silver	< 2.8	2.8	ug/g	5	AGN	4/8/20	12626	4/9/20	2:01	SW3051A6020A
Thallium	< 0.56	0.56	ug/g	5	AGN	4/8/20	12626	4/9/20	2:01	SW3051A6020A
Vanadium	**17**	5.6	ug/g	5	AGN	4/8/20	12626	4/10/20	0:52	SW3051A6020A
Zinc	**190** M	5.6	ug/g	5	AGN	4/8/20	12626	4/10/20	0:52	SW3051A6020A

D = The RPD for the sample duplicate, run as internal QC, was outside the 20% acceptance range. M = The recovery for the matrix spike was 161%. The acceptance criteria is 75-125%.

M = The recovery for the matrix spike was 141%. The acceptance criteria is 75-125%.

Sample#: 52498-003

Sample ID: SB-106 (5-8')

Matrix: Solid Percent Dry: 81.1% Results expressed on a dry weight basis.

Sampled: 4/6/20 10:00

Parameter	Result	Reporting Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
Antimony	**0.78**	0.59	ug/g	5	AGN	4/8/20	12626	4/10/20	1:20	SW3051A6020A
Arsenic	**3.2**	3.0	ug/g	5	AGN	4/8/20	12626	4/9/20	2:29	SW3051A6020A
Barium	**32**	5.9	ug/g	5	AGN	4/8/20	12626	4/10/20	1:20	SW3051A6020A
Beryllium	< 0.59	0.59	ug/g	5	AGN	4/8/20	12626	4/9/20	2:29	SW3051A6020A
Cadmium	< 0.59	0.59	ug/g	5	AGN	4/8/20	12626	4/9/20	2:29	SW3051A6020A
Chromium	**23**	5.9	ug/g	5	AGN	4/8/20	12626	4/10/20	1:20	SW3051A6020A
Lead	**150**	3.0	ug/g	5	AGN	4/8/20	12626	4/10/20	1:20	SW3051A6020A
Mercury	< 0.15	0.15	ug/g	1	AGN	4/7/20	12622	4/7/20	18:27	SW7471B
Nickel	**9.8**	5.9	ug/g	5	AGN	4/8/20	12626	4/10/20	1:20	SW3051A6020A
Selenium	< 5.9	5.9	ug/g	5	AGN	4/8/20	12626	4/9/20	2:29	SW3051A6020A
Silver	< 3.0	3.0	ug/g	5	AGN	4/8/20	12626	4/9/20	2:29	SW3051A6020A
Thallium	< 0.59	0.59	ug/g	5	AGN	4/8/20	12626	4/9/20	2:29	SW3051A6020A
Vanadium	**12**	5.9	ug/g	5	AGN	4/8/20	12626	4/10/20	1:20	SW3051A6020A
Zinc	**91**	5.9	ug/g	5	AGN	4/8/20	12626	4/10/20	1:20	SW3051A6020A

Project ID: Cedar Woods 2180311

Job ID: 52498

Sample#: 52498-005

Sample ID: SB-105 (0-3')

Matrix: Solid Percent Dry: 81.3% Results expressed on a dry weight basis.

Sampled: 4/6/20 10:40

Parameter	Result	Reporting Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
Antimony	**4.7**	0.60	ug/g	5	AGN	4/8/20	12626	4/10/20	1:29	SW3051A6020A
Arsenic	**7.3**	3.0	ug/g	5	AGN	4/8/20	12626	4/10/20	1:29	SW3051A6020A
Barium	**310**	6.0	ug/g	5	AGN	4/8/20	12626	4/10/20	1:29	SW3051A6020A
Beryllium	< 0.60	0.60	ug/g	5	AGN	4/8/20	12626	4/9/20	2:38	SW3051A6020A
Cadmium	**2.0**	0.60	ug/g	5	AGN	4/8/20	12626	4/9/20	2:38	SW3051A6020A
Chromium	**18**	6.0	ug/g	5	AGN	4/8/20	12626	4/10/20	1:29	SW3051A6020A
Lead	**650**	3.0	ug/g	5	AGN	4/8/20	12626	4/10/20	1:29	SW3051A6020A
Mercury	**2.9**	0.79	ug/g	5	AGN	4/7/20	12622	4/7/20	18:53	SW7471B
Nickel	**18**	6.0	ug/g	5	AGN	4/8/20	12626	4/10/20	1:29	SW3051A6020A
Selenium	< 6.0	6.0	ug/g	5	AGN	4/8/20	12626	4/9/20	2:38	SW3051A6020A
Silver	< 3.0	3.0	ug/g	5	AGN	4/8/20	12626	4/9/20	2:38	SW3051A6020A
Thallium	< 0.60	0.60	ug/g	5	AGN	4/8/20	12626	4/9/20	2:38	SW3051A6020A
Vanadium	**19**	6.0	ug/g	5	AGN	4/8/20	12626	4/10/20	1:29	SW3051A6020A
Zinc	**770**	6.0	ug/g	5	AGN	4/8/20	12626	4/10/20	1:29	SW3051A6020A

Sample#: 52498-006

Sample ID: SB-105 (5-8')

Matrix: Solid Percent Dry: 88% Results expressed on a dry weight basis.

Sampled: 4/6/20 11:00

Parameter	Result	Reporting Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
Antimony	< 0.55	0.55	ug/g	5	AGN	4/8/20	12626	4/9/20	3:16	SW3051A6020A
Arsenic	**3.0**	2.7	ug/g	5	AGN	4/8/20	12626	4/9/20	3:16	SW3051A6020A
Barium	**23**	5.5	ug/g	5	AGN	4/8/20	12626	4/10/20	1:39	SW3051A6020A
Beryllium	< 0.55	0.55	ug/g	5	AGN	4/8/20	12626	4/9/20	3:16	SW3051A6020A
Cadmium	< 0.55	0.55	ug/g	5	AGN	4/8/20	12626	4/9/20	3:16	SW3051A6020A
Chromium	**11**	5.5	ug/g	5	AGN	4/8/20	12626	4/10/20	1:39	SW3051A6020A
Lead	**5.0**	2.7	ug/g	5	AGN	4/8/20	12626	4/9/20	3:16	SW3051A6020A
Mercury	< 0.15	0.15	ug/g	1	AGN	4/7/20	12622	4/7/20	18:31	SW7471B
Nickel	**14**	5.5	ug/g	5	AGN	4/8/20	12626	4/10/20	1:39	SW3051A6020A
Selenium	< 5.5	5.5	ug/g	5	AGN	4/8/20	12626	4/9/20	3:16	SW3051A6020A
Silver	< 2.7	2.7	ug/g	5	AGN	4/8/20	12626	4/9/20	3:16	SW3051A6020A
Thallium	< 0.55	0.55	ug/g	5	AGN	4/8/20	12626	4/9/20	3:16	SW3051A6020A
Vanadium	**14**	5.5	ug/g	5	AGN	4/8/20	12626	4/10/20	1:39	SW3051A6020A
Zinc	**69**	5.5	ug/g	5	AGN	4/8/20	12626	4/10/20	1:39	SW3051A6020A

Project ID: Cedar Woods 2180311

Job ID: 52498

Sample#: 52498-007

Sample ID: SB-102 (0-3')

Matrix: Solid Percent Dry: 93% Results expressed on a dry weight basis.

Sampled: 4/6/20 11:45

Parameter	Result	Reporting Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
Antimony	< 0.54	0.54	ug/g	5	AGN	4/8/20	12626	4/9/20	3:25	SW3051A6020A
Arsenic	**3.3**	2.7	ug/g	5	AGN	4/8/20	12626	4/9/20	3:25	SW3051A6020A
Barium	**27**	5.4	ug/g	5	AGN	4/8/20	12626	4/10/20	1:48	SW3051A6020A
Beryllium	< 0.54	0.54	ug/g	5	AGN	4/8/20	12626	4/9/20	3:25	SW3051A6020A
Cadmium	< 0.54	0.54	ug/g	5	AGN	4/8/20	12626	4/9/20	3:25	SW3051A6020A
Chromium	**17**	5.4	ug/g	5	AGN	4/8/20	12626	4/10/20	1:48	SW3051A6020A
Lead	**16**	2.7	ug/g	5	AGN	4/8/20	12626	4/10/20	1:48	SW3051A6020A
Mercury	< 0.13	0.13	ug/g	1	AGN	4/7/20	12622	4/7/20	18:33	SW7471B
Nickel	**23**	5.4	ug/g	5	AGN	4/8/20	12626	4/10/20	1:48	SW3051A6020A
Selenium	< 5.4	5.4	ug/g	5	AGN	4/8/20	12626	4/9/20	3:25	SW3051A6020A
Silver	< 2.7	2.7	ug/g	5	AGN	4/8/20	12626	4/9/20	3:25	SW3051A6020A
Thallium	< 0.54	0.54	ug/g	5	AGN	4/8/20	12626	4/9/20	3:25	SW3051A6020A
Vanadium	**20**	5.4	ug/g	5	AGN	4/8/20	12626	4/10/20	1:48	SW3051A6020A
Zinc	**31**	5.4	ug/g	5	AGN	4/8/20	12626	4/10/20	1:48	SW3051A6020A

Sample#: 52498-009

Sample ID: SB-102 (11-14')

Matrix: Solid Percent Dry: 40% Results expressed on a dry weight basis.

Sampled: 4/6/20 11:40

Parameter	Result	Reporting Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
Antimony	< 1.1	1.1	ug/g	5	AGN	4/8/20	12626	4/10/20	2:25	SW3051A6020A
Arsenic	**10**	5.6	ug/g	5	AGN	4/8/20	12626	4/9/20	3:34	SW3051A6020A
Barium	**56**	11	ug/g	5	AGN	4/8/20	12626	4/10/20	2:25	SW3051A6020A
Beryllium	< 1.1	1.1	ug/g	5	AGN	4/8/20	12626	4/9/20	3:34	SW3051A6020A
Cadmium	< 1.1	1.1	ug/g	5	AGN	4/8/20	12626	4/9/20	3:34	SW3051A6020A
Chromium	**41**	11	ug/g	5	AGN	4/8/20	12626	4/10/20	2:25	SW3051A6020A
Lead	**190**	5.6	ug/g	5	AGN	4/8/20	12626	4/10/20	2:25	SW3051A6020A
Mercury	< 0.31	0.31	ug/g	1	AGN	4/7/20	12622	4/7/20	18:34	SW7471B
Nickel	**64**	11	ug/g	5	AGN	4/8/20	12626	4/10/20	2:25	SW3051A6020A
Selenium	< 11	11	ug/g	5	AGN	4/8/20	12626	4/9/20	3:34	SW3051A6020A
Silver	< 5.6	5.6	ug/g	5	AGN	4/8/20	12626	4/9/20	3:34	SW3051A6020A
Thallium	< 1.1	1.1	ug/g	5	AGN	4/8/20	12626	4/9/20	3:34	SW3051A6020A
Vanadium	**17**	11	ug/g	5	AGN	4/8/20	12626	4/10/20	2:25	SW3051A6020A
Zinc	**530**	11	ug/g	5	AGN	4/8/20	12626	4/10/20	2:25	SW3051A6020A

Project ID: Cedar Woods 2180311

Job ID: 52498

Sample#: 52498-010

Sample ID: SB-101 (0-3')

Matrix: Solid Percent Dry: 90.7% Results expressed on a dry weight basis.

Sampled: 4/6/20 12:55

Parameter	Result	Reporting Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
Antimony	< 0.52	0.52	ug/g	5	AGN	4/8/20	12626	4/9/20	3:44	SW3051A6020A
Arsenic	**3.3**	2.6	ug/g	5	AGN	4/8/20	12626	4/9/20	3:44	SW3051A6020A
Barium	**18**	5.2	ug/g	5	AGN	4/8/20	12626	4/10/20	2:35	SW3051A6020A
Beryllium	< 0.52	0.52	ug/g	5	AGN	4/8/20	12626	4/9/20	3:44	SW3051A6020A
Cadmium	< 0.52	0.52	ug/g	5	AGN	4/8/20	12626	4/9/20	3:44	SW3051A6020A
Chromium	**7.3**	5.2	ug/g	5	AGN	4/8/20	12626	4/10/20	2:35	SW3051A6020A
Lead	**8.7**	2.6	ug/g	5	AGN	4/8/20	12626	4/10/20	2:35	SW3051A6020A
Mercury	< 0.15	0.15	ug/g	1	AGN	4/7/20	12622	4/7/20	18:36	SW7471B
Nickel	**7.4**	5.2	ug/g	5	AGN	4/8/20	12626	4/10/20	2:35	SW3051A6020A
Selenium	< 5.2	5.2	ug/g	5	AGN	4/8/20	12626	4/9/20	3:44	SW3051A6020A
Silver	< 2.6	2.6	ug/g	5	AGN	4/8/20	12626	4/9/20	3:44	SW3051A6020A
Thallium	< 0.52	0.52	ug/g	5	AGN	4/8/20	12626	4/9/20	3:44	SW3051A6020A
Vanadium	**11**	5.2	ug/g	5	AGN	4/8/20	12626	4/10/20	2:35	SW3051A6020A
Zinc	**17**	5.2	ug/g	5	AGN	4/8/20	12626	4/10/20	2:35	SW3051A6020A

Sample#: 52498-011

Sample ID: SB-101 (9-12')

Matrix: Solid Percent Dry: 74% Results expressed on a dry weight basis.

Sampled: 4/6/20 13:05

Parameter	Result	Reporting Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
Antimony	**2.7**	0.68	ug/g	5	AGN	4/8/20	12626	4/10/20	2:44	SW3051A6020A
Arsenic	**28**	3.4	ug/g	5	AGN	4/8/20	12626	4/10/20	2:44	SW3051A6020A
Barium	**140**	6.8	ug/g	5	AGN	4/8/20	12626	4/10/20	2:44	SW3051A6020A
Beryllium	< 0.68	0.68	ug/g	5	AGN	4/8/20	12626	4/9/20	3:53	SW3051A6020A
Cadmium	**1.3**	0.68	ug/g	5	AGN	4/8/20	12626	4/10/20	2:44	SW3051A6020A
Chromium	**51**	6.8	ug/g	5	AGN	4/8/20	12626	4/10/20	2:44	SW3051A6020A
Lead	**230**	3.4	ug/g	5	AGN	4/8/20	12626	4/10/20	2:44	SW3051A6020A
Mercury	**0.58**	0.18	ug/g	1	AGN	4/7/20	12622	4/7/20	18:42	SW7471B
Nickel	**14**	6.8	ug/g	5	AGN	4/8/20	12626	4/10/20	2:44	SW3051A6020A
Selenium	< 6.8	6.8	ug/g	5	AGN	4/8/20	12626	4/9/20	3:53	SW3051A6020A
Silver	< 3.4	3.4	ug/g	5	AGN	4/8/20	12626	4/9/20	3:53	SW3051A6020A
Thallium	< 0.68	0.68	ug/g	5	AGN	4/8/20	12626	4/9/20	3:53	SW3051A6020A
Vanadium	**15**	6.8	ug/g	5	AGN	4/8/20	12626	4/10/20	2:44	SW3051A6020A
Zinc	**220**	6.8	ug/g	5	AGN	4/8/20	12626	4/10/20	2:44	SW3051A6020A

Project ID: Cedar Woods 2180311

Job ID: 52498

Sample#: 52498-012

Sample ID: SB-103 (0-3')

Matrix: Solid Percent Dry: 93% Results expressed on a dry weight basis.

Sampled: 4/6/20 12:20

Parameter	Result	Reporting Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
Antimony	< 0.51	0.51	ug/g	5	AGN	4/8/20	12626	4/9/20	4:02	SW3051A6020A
Arsenic	**3.5**	2.5	ug/g	5	AGN	4/8/20	12626	4/9/20	4:02	SW3051A6020A
Barium	**25**	5.1	ug/g	5	AGN	4/8/20	12626	4/10/20	2:53	SW3051A6020A
Beryllium	< 0.51	0.51	ug/g	5	AGN	4/8/20	12626	4/9/20	4:02	SW3051A6020A
Cadmium	< 0.51	0.51	ug/g	5	AGN	4/8/20	12626	4/9/20	4:02	SW3051A6020A
Chromium	**6.9**	5.1	ug/g	5	AGN	4/8/20	12626	4/10/20	2:53	SW3051A6020A
Lead	**22**	2.5	ug/g	5	AGN	4/8/20	12626	4/10/20	2:53	SW3051A6020A
Mercury	< 0.15	0.15	ug/g	1	AGN	4/7/20	12622	4/7/20	18:48	SW7471B
Nickel	**6.3**	5.1	ug/g	5	AGN	4/8/20	12626	4/10/20	2:53	SW3051A6020A
Selenium	< 5.1	5.1	ug/g	5	AGN	4/8/20	12626	4/9/20	4:02	SW3051A6020A
Silver	< 2.5	2.5	ug/g	5	AGN	4/8/20	12626	4/9/20	4:02	SW3051A6020A
Thallium	< 0.51	0.51	ug/g	5	AGN	4/8/20	12626	4/9/20	4:02	SW3051A6020A
Vanadium	**10**	5.1	ug/g	5	AGN	4/8/20	12626	4/10/20	2:53	SW3051A6020A
Zinc	**19**	5.1	ug/g	5	AGN	4/8/20	12626	4/10/20	2:53	SW3051A6020A

Sample#: 52498-013

Sample ID: SB-103 (3-5')

Matrix: Solid Percent Dry: 81.1% Results expressed on a dry weight basis.

Sampled: 4/6/20 12:20

Parameter	Result	Reporting Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
Antimony	**3.7**	0.62	ug/g	5	AGN	4/8/20	12626	4/10/20	3:03	SW3051A6020A
Arsenic	**13**	3.1	ug/g	5	AGN	4/8/20	12626	4/10/20	3:03	SW3051A6020A
Barium	**250**	6.2	ug/g	5	AGN	4/8/20	12626	4/10/20	3:03	SW3051A6020A
Beryllium	< 0.62	0.62	ug/g	5	AGN	4/8/20	12626	4/9/20	4:12	SW3051A6020A
Cadmium	**4.9**	0.62	ug/g	5	AGN	4/8/20	12626	4/10/20	3:03	SW3051A6020A
Chromium	**9.4**	6.2	ug/g	5	AGN	4/8/20	12626	4/10/20	3:03	SW3051A6020A
Lead	**710**	3.1	ug/g	5	AGN	4/8/20	12626	4/10/20	3:03	SW3051A6020A
Mercury	**0.58**	0.16	ug/g	1	AGN	4/7/20	12622	4/7/20	18:49	SW7471B
Nickel	**12**	6.2	ug/g	5	AGN	4/8/20	12626	4/10/20	3:03	SW3051A6020A
Selenium	< 6.2	6.2	ug/g	5	AGN	4/8/20	12626	4/9/20	4:12	SW3051A6020A
Silver	< 3.1	3.1	ug/g	5	AGN	4/8/20	12626	4/9/20	4:12	SW3051A6020A
Thallium	< 0.62	0.62	ug/g	5	AGN	4/8/20	12626	4/9/20	4:12	SW3051A6020A
Vanadium	**10.0**	6.2	ug/g	5	AGN	4/8/20	12626	4/10/20	3:03	SW3051A6020A
Zinc	**920**	6.2	ug/g	5	AGN	4/8/20	12626	4/10/20	3:03	SW3051A6020A

Project ID: Cedar Woods 2180311
Job ID: 52498
Sample#: 52498-014
Sample ID: SB-103 (7-10')
Matrix: Solid Percent Dry: 76.8% Results expressed on a dry weight basis.
Sampled: 4/6/20 12:25

Parameter	Result	Reporting Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
Antimony	< 0.60	0.60	ug/g	5	AGN	4/8/20	12626	4/9/20	4:21	SW3051A6020A
Arsenic	**3.3**	3.0	ug/g	5	AGN	4/8/20	12626	4/9/20	4:21	SW3051A6020A
Barium	**36**	6.0	ug/g	5	AGN	4/8/20	12626	4/10/20	3:12	SW3051A6020A
Beryllium	< 0.60	0.60	ug/g	5	AGN	4/8/20	12626	4/9/20	4:21	SW3051A6020A
Cadmium	< 0.60	0.60	ug/g	5	AGN	4/8/20	12626	4/9/20	4:21	SW3051A6020A
Chromium	**18**	6.0	ug/g	5	AGN	4/8/20	12626	4/10/20	3:12	SW3051A6020A
Lead	**8.4**	3.0	ug/g	5	AGN	4/8/20	12626	4/10/20	3:12	SW3051A6020A
Mercury	< 0.17	0.17	ug/g	1	AGN	4/7/20	12622	4/7/20	18:51	SW7471B
Nickel	**13**	6.0	ug/g	5	AGN	4/8/20	12626	4/10/20	3:12	SW3051A6020A
Selenium	< 6.0	6.0	ug/g	5	AGN	4/8/20	12626	4/9/20	4:21	SW3051A6020A
Silver	< 3.0	3.0	ug/g	5	AGN	4/8/20	12626	4/9/20	4:21	SW3051A6020A
Thallium	< 0.60	0.60	ug/g	5	AGN	4/8/20	12626	4/9/20	4:21	SW3051A6020A
Vanadium	**25**	6.0	ug/g	5	AGN	4/8/20	12626	4/10/20	3:12	SW3051A6020A
Zinc	**18**	6.0	ug/g	5	AGN	4/8/20	12626	4/10/20	3:12	SW3051A6020A

Project ID: Cedar Woods 2180311

Job ID: 52498

Sample#: 52498-004

Sample ID: SB-106 (3-4')

Matrix: Solid Percent Dry: 88.6% Results expressed on a dry weight basis.

Sampled: 4/6/20 9:50

Parameter	Result	Reporting Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
Chromium, Hexavalent	**0.50**	0.45	ug/g	1	SFM		2001871	4/10/20	11:30	SW3060A7196A
Oxidation Reduction Potential	**430**		mV	1	WAS		2001824	4/7/20	8:00	ASTM1498-08
pH	**5.9**		pH	1	WAS		2001823	4/7/20	7:47	SW9045C

Sample#: 52498-005

Sample ID: SB-105 (0-3')

Matrix: Solid Percent Dry: 81.3% Results expressed on a dry weight basis.

Sampled: 4/6/20 10:40

Parameter	Result	Reporting Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
Chromium, Hexavalent	< 0.48	0.48	ug/g	1	SFM		2001871	4/10/20	11:30	SW3060A7196A
Oxidation Reduction Potential	**450**		mV	1	WAS		2001824	4/7/20	8:10	ASTM1498-08
pH	**6.8**		pH	1	WAS		2001823	4/7/20	7:53	SW9045C

Sample#: 52498-009

Sample ID: SB-102 (11-14')

Matrix: Solid Percent Dry: 40% Results expressed on a dry weight basis.

Sampled: 4/6/20 11:40

Parameter	Result	Reporting Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
Chromium, Hexavalent	< 1.00	1.00	ug/g	1	SFM		2001871	4/10/20	11:30	SW3060A7196A
Oxidation Reduction Potential	**49**		mV	1	WAS		2001824	4/7/20	8:14	ASTM1498-08
pH	**6.9**		pH	1	WAS		2001823	4/7/20	8:04	SW9045C

Sample#: 52498-011

Sample ID: SB-101 (9-12')

Matrix: Solid Percent Dry: 74% Results expressed on a dry weight basis.

Sampled: 4/6/20 13:05

Parameter	Result	Reporting Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
Chromium, Hexavalent	**3.8**	2.8	ug/g	5	SFM		2001871	4/10/20	11:30	SW3060A7196A
Oxidation Reduction Potential	**180**		mV	1	WAS		2001824	4/7/20	8:26	ASTM1498-08
pH	**6.1**		pH	1	WAS		2001823	4/7/20	7:55	SW9045C

Sample#: 52498-013

Sample ID: SB-103 (3-5')

Matrix: Solid Percent Dry: 81.1% Results expressed on a dry weight basis.

Sampled: 4/6/20 12:20

Parameter	Result	Reporting Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
Chromium, Hexavalent	< 0.49	0.49	ug/g	1	SFM		2001871	4/10/20	11:30	SW3060A7196A
Oxidation Reduction Potential	**250** D		mV	1	WAS		2001824	4/7/20	8:39	ASTM1498-08

D = The RPD for the sample duplicate, run as internal QC, was outside the 10mV acceptance range. The duplicate result is 370 mV.

pH	**6.4**		pH	1	WAS		2001823	4/7/20	8:00	SW9045C

Quality Control Report

124 Heritage Avenue Unit 16
Portsmouth, NH 03801
www.absoluteresourceassociates.com

MassDEP Analytical Protocol Certification Form

Laboratory Name: Absolute Resource Associates	Project #: 2180311
Project Location: Massachusetts	RTN:

This Form provides certifications for the following data set: list Laboratory Sample ID Number(s): 52498

Matrices: ☐ Groundwater/Surface Water ☑ Soil/Sediment ☐ Drinking Water ☐ Air ☐ Other:

CAM Protocol (check all that apply below):

8260 VOC CAM II A ☐	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 ☐
8270 SVOC CAM II B ☐	7010 Metals CAM III C ☐	MassDEP VPH (GC/MS) CAM IV C ☐	8081 Pesticides CAM V B ☐	7196 Hex Cr CAM VI B ☑	MassDEP APH CAM IX A ☐
6010 Metals CAM III A ☐	6020 Metals CAM III D ☑	MassDEP EPH CAM IV B ☑	8151 Herbicides CAM V C ☐	8330 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 ☐ No
B	Were the analytical method(s) and all associated QC requirements specified in the selected CAM protocol(s) followed?	☑ Yes ☐ 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 ☐ No
D	Does the laboratory report comply with all the reporting requirements specified in CAM VII A, "Quality Assurance and Quality Control Guidelines for the Acquisition and Reporting of Analytical Data"?	☑ Yes ☐ No
E	VPH, EPH, APH, and TO-15 only a. VPH, EPH, and APH Methods only: Was each method conducted without significant modification(s)? (Refer to the individual method(s) for a list of significant modifications). b. APH and TO-15 Methods only: Was the complete analyte list reported for each method?	☑ Yes ☐ No ☐ 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 ☐ 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 protocol(s)?	☐ Yes ☑ No[1]

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

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

[1]*All negative responses must be addressed in an attached 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, is accurate and complete.

Signature: _____ **Position:** Chief Operating Officer

Printed Name: Aaron DeWees **Date**: 5/1/20

Sample Integrity Table

Parameter	Method	Matrix	Minimum Volume	Recommended Container(s)	Required Preservation	Holding Time
Volatile Organics	EPA 8260	Aqueous	40mL	2 x 40mL VOA Vials with Teflon lined septa	Cool to ≤6°C 1:1 HCl to pH <2	14 Days
Volatile Organics	EPA 8260	Solid	40mL	1 x 40mL VOA Vial with 10mLs Methanol and 1 unpreserved container for percent moisture	Cool to ≤6°C Methanol	14 Days
Semivolatile Organics	EPA 8270	Aqueous	1L	1L Amber Glass Bottle w/Teflon liner	Cool to ≤6°C	7 Days
Semivolatile Organics	EPA 8270	Solid	20g	4oz Amber Glass Jar w/Teflon liner	Cool to ≤6°C	14 Days
Organochlorine Pesticides	EPA 8081	Aqueous	1L	1L Amber Glass Bottle w/Teflon liner	Cool to ≤6°C	7 Days
Organochlorine Pesticides	EPA 8081	Solid	20g	4oz Glass Jar w/Teflon liner	Cool to ≤6°C	14 Days
PCBs	EPA 8082	Aqueous	1L	1L Amber Glass Bottle w/Teflon liner	Cool to ≤6°C	365 Days
PCBs	EPA 8082	Solid	20g	4oz Glass Jar w/Teflon liner	Cool to ≤6°C	365 Days
Herbicides (subcontracted)	EPA 8151	Aqueous	1L	1L Amber Glass Bottle w/Teflon liner	Cool to ≤6°C	7 Days
Herbicides (subcontracted)	EPA 8151	Solid	30g	4oz Glass Jar w/Teflon liner	Cool to ≤6°C	14 Days
MA DEP VPH	MADEP VPH	Aqueous	40mL	2 x 40mL VOA Vials with Teflon lined septa	Cool to ≤6°C 1:1 HCl to pH <2	14 Days
MA DEP VPH	MADEP VPH	Solid	40mL	1 x 40mL VOA Vial with 10mLs Methanol and 1 unpreserved container for percent moisture	Cool to ≤6°C Methanol	28 Days
MA DEP EPH	MADEP EPH	Aqueous	1L	1L Amber Glass Bottle w/Teflon liner	Cool to ≤6°C 1:1 HCl to pH <2	14 Days
MA DEP EPH	MADEP EPH	Solid	30g	4oz Amber Glass Jar w/Teflon liner	Cool to ≤6°C	14 Days
Total Metals	EPA 6010	Aqueous	100mL	250mL Polyethylene Bottle	1:1 HNO_3 to pH <2	180 Days
Dissolved Metals	EPA 6010	Aqueous	100mL	250mL Polyethylene Bottle	Filter First 1:1 HNO_3 to pH <2	180 Days
Total Metals	EPA 6010	Solid	15g	4oz Glass Jar w/Teflon liner	Cool to ≤6°C	180 Days
Total Mercury (may be combined with Total Metals)	EPA 7470	Aqueous	100mL	125mL Polyethylene Bottle	1:1 HNO_3 to pH <2	28 Days
Total Mercury (may be combined with Total Metals)	EPA 7471	Solid	15g	4oz Glass Jar w/Teflon liner	Cool to ≤6°C	28 Days
Chromium, Hexavalent	EPA 7196	Aqueous	100mL	125mL Polyethylene Bottle	Cool to ≤6°C (NH4)2SO4 buffer	28 Days
Chromium, Hexavalent (subcontract)	EPA 7196	Solid	15g	4oz Glass Jar w/Teflon liner	Cool to ≤6°C	30 Days
Cyanide, Total	EPA 9014	Aqueous	125mL	125mL Polyethylene Bottle	Cool to ≤6°C 1:1 NaOH to pH >8	14 Days
Cyanide, Total	EPA 9014	Solid	15g	4oz Glass Jar w/Teflon liner	Cool to ≤6°C	14 Days

Absolute Resource Associates
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Portsmouth, NH 03801
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Absolute Resource associates

Case Narrative
Lab # 52498

Sample Receiving and Chain of Custody Discrepancies

Samples were received in acceptable condition, between 0 and 6 degrees C, on ice, and in accordance with sample handling, preservation and integrity guidelines.
As noted on the result page, the VPH samples did not meet the 1:1 +/-25% methanol to soil ratio.

Calibration

No exceptions noted.

Method Blank

No exceptions noted.

Surrogate Recoveries

EPH: Sample 52498-003 had recoveries for both extraction surrogates below acceptance criteria and one fractionation surrogate above acceptance criteria. The sample was re-extracted beyond method holding time with similar results. Both extractions are included.
VPH: The surrogate a,a,a-trifluorotoluene was below acceptance criteria in sample 52498-011.

Laboratory Control Sample Results

VOC: The LCSD2001516 did not meet the acceptance criteria for t-butanol (TBA). Since <10% of the compounds were outside of the acceptance criteria, reanalysis is not required.

Matrix Spike/Matrix Spike Duplicate/Duplicate Results

Metals: The percent recovery for barium in the matrix spike for sample 52498-002 was 161% the recovery for Zinc was 141%, outside the acceptance criteria of 75-125%. The duplicate of sample 52498-002 had an RPD for barium that was outside the acceptance criteria. Results have been qualified accordingly.
ORP: The duplicate of sample 52498-013 was outside the 10 mV limit. Both results have been included.

Other

VPH: The trap used for VPH analysis is a Tekmar STRATUM Purge Trap 9. The column used for VPH analysis is a Restek Rtx-502.2, 105m, 0.53mmID, and 3um df.

MassDEP Analytical Protocol Certification Form Questions A through I

No explanation is needed for Questions A through I answered in the affirmative.
Question G: The CAM protocol reporting limits were not achieved for this project due to dilutions necessary for sample analysis. Box G is "No."
Question H: See surrogate section above. Box H is "No."

GLOSSARY

%R	Percent Recovery
BLK	Blank (Method Blank, Preparation Blank)
CCB	Continuing Calibration Blank
CCV	Continuing Calibration Verification
CRM	Certified Reference Material (associated with solid Metals samples)
CRMD	Certified Reference Material Duplicate (associated with solid Metals samples)
Dil'n	Dilution
DL	Detection Limit
DUP	Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
LOD	Limit of Detection
LOQ	Limit of Quantitation
MB	Methanol Blank (associated with solid VOC samples)
MLCS	Methanol Laboratory Control Sample (associated with solid VOC samples)
MLCSD	Methanol Laboratory Control Sample Duplicate (associated with solid VOC samples)
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PB	Preparation Blank
QC	Quality Control
RL	Reporting Limit
RPD	Relative Percent Difference
SUR	Surrogate

Method	QC ID	Parameter	Associated Sample		Result	Units	Amt Added	%R	Limits		RPD	RPD Limit
MA VPH	MB12628	Unadjusted C5-C8 Aliphatics		<	5.0	ug/g						
		Unadjusted C9-C12 Aliphatics		<	5.0	ug/g						
		methyl t-butyl ether (MTBE)		<	0.10	ug/g						
		benzene		<	0.10	ug/g						
		toluene		<	0.10	ug/g						
		ethylbenzene		<	0.10	ug/g						
		m&p-xylenes		<	0.10	ug/g						
		o-xylene		<	0.10	ug/g						
		naphthalene		<	0.25	ug/g						
		C5-C8 Aliphatics		<	5.0	ug/g						
		C9-C12 Aliphatics		<	5.0	ug/g						
		C9-C10 Aromatics		<	5.0	ug/g						
		2,5-dibromotoluene as Aromatic SUR			113	%			70	130		
		2,5-dibromotoluene as Aliphatic SUR			112	%			70	130		
		a,a,a-trifluorotoluene SUR			90	%			70	130		
MA VPH	MLCS12628	Unadjusted C5-C8 Aliphatics			14	ug/g	15	93	70	130		
		Unadjusted C9-C12 Aliphatics			13	ug/g	15	89	70	130		
		methyl t-butyl ether (MTBE)			4.6	ug/g	5	92	70	130		
		benzene			4.8	ug/g	5	97	70	130		
		toluene			4.8	ug/g	5	95	70	130		
		ethylbenzene			4.8	ug/g	5	96	70	130		
		m&p-xylenes			9.7	ug/g	10	97	70	130		
		o-xylene			4.8	ug/g	5	96	70	130		
		naphthalene			5.0	ug/g	5	100	70	130		
		C5-C8 Aliphatics		<	5.0	ug/g			70	130		
		C9-C12 Aliphatics		<	5.0	ug/g			70	130		
		C9-C10 Aromatics			5.1	ug/g	5	102	70	130		
		2,5-dibromotoluene as Aromatic SUR			111	%			70	130		
		2,5-dibromotoluene as Aliphatic SUR			112	%			70	130		
		a,a,a-trifluorotoluene SUR			86	%			70	130		
MA VPH	MLCSD12628	Unadjusted C5-C8 Aliphatics			14	ug/g	15	93	70	130	0	25
		Unadjusted C9-C12 Aliphatics			14	ug/g	15	90	70	130	2	25
		methyl t-butyl ether (MTBE)			4.7	ug/g	5	93	70	130	1	25
		benzene			4.9	ug/g	5	99	70	130	2	25
		toluene			4.9	ug/g	5	98	70	130	3	25
		ethylbenzene			4.9	ug/g	5	99	70	130	3	25
		m&p-xylenes			10.0	ug/g	10	100	70	130	3	25
		o-xylene			4.9	ug/g	5	99	70	130	2	25
		naphthalene			5.1	ug/g	5	102	70	130	2	25
		C5-C8 Aliphatics		<	5.0	ug/g			70	130		25
		C9-C12 Aliphatics		<	5.0	ug/g			70	130		25
		C9-C10 Aromatics			5.2	ug/g	5	103	70	130	1	25
		2,5-dibromotoluene as Aromatic SUR			99	%			70	130		
		2,5-dibromotoluene as Aliphatic SUR			100	%			70	130		
		a,a,a-trifluorotoluene SUR			90	%			70	130		

Method	QC ID	Parameter	Associated Sample		Result	Units	Amt Added	%R	Limits		RPD	RPD Limit
MA EPH	BLK12625	naphthalene		<	0.20	ug/g						
		2-methylnaphthalene		<	0.20	ug/g						
		phenanthrene		<	0.20	ug/g						
		acenaphthene		<	0.20	ug/g						
		acenaphthylene		<	0.20	ug/g						
		fluorene		<	0.20	ug/g						
		anthracene		<	0.20	ug/g						
		fluoranthene		<	0.20	ug/g						
		pyrene		<	0.20	ug/g						
		benzo(a)anthracene		<	0.20	ug/g						
		chrysene		<	0.20	ug/g						
		benzo(b)fluoranthene		<	0.20	ug/g						
		benzo(k)fluoranthene		<	0.20	ug/g						
		benzo(a)pyrene		<	0.20	ug/g						
		indeno(1,2,3-cd)pyrene		<	0.20	ug/g						
		dibenzo(a,h)anthracene		<	0.20	ug/g						
		benzo(g,h,i)perylene		<	0.20	ug/g						
		Unadjusted C11-C22 Aromatics		<	20	ug/g						
		C9-C18 Aliphatics		<	20	ug/g						
		C19-C36 Aliphatics		<	20	ug/g						
		C11-C22 Aromatics		<	20	ug/g						
		1-chloro-octadecane SUR			52	%			40	140		
		o-terphenyl SUR			53	%			40	140		
		2-fluorobiphenyl SUR			67	%			40	140		
		2-bromonaphthalene SUR			65	%			40	140		

Method	QC ID	Parameter	Associated Sample		Result	Units	Amt Added	%R	Limits		RPD	RPD Limit
MA EPH	LCS12625	naphthalene			3.0	ug/g	6	50	40	140		
		2-methylnaphthalene			3.0	ug/g	6	50	40	140		
		phenanthrene			3.6	ug/g	6	60	40	140		
		acenaphthene			3.3	ug/g	6	55	40	140		
		acenaphthylene			3.1	ug/g	6	51	40	140		
		fluorene			3.4	ug/g	6	57	40	140		
		anthracene			3.5	ug/g	6	58	40	140		
		fluoranthene			3.8	ug/g	6	64	40	140		
		pyrene			4.1	ug/g	6	69	40	140		
		benzo(a)anthracene			4.1	ug/g	6	68	40	140		
		chrysene			4.2	ug/g	6	71	40	140		
		benzo(b)fluoranthene			4.0	ug/g	6	67	40	140		
		benzo(k)fluoranthene			3.9	ug/g	6	65	40	140		
		benzo(a)pyrene			4.0	ug/g	6	66	40	140		
		indeno(1,2,3-cd)pyrene			4.2	ug/g	6	71	40	140		
		dibenzo(a,h)anthracene			4.2	ug/g	6	70	40	140		
		benzo(g,h,i)perylene			4.2	ug/g	6	69	40	140		
		Unadjusted C11-C22 Aromatics			68	ug/g	102	66	40	140		
		C9-C18 Aliphatics			20	ug/g	36	57	40	140		
		C19-C36 Aliphatics			56	ug/g	48	116	40	140		
		C11-C22 Aromatics		<	20	ug/g			40	140		
		1-chloro-octadecane SUR			60	%			40	140		
		o-terphenyl SUR			58	%			40	140		
		2-fluorobiphenyl SUR			65	%			40	140		
		2-bromonaphthalene SUR			64	%			40	140		

Method	QC ID	Parameter	Associated Sample		Result	Units	Amt Added	%R	Limits		RPD	RPD Limit
MA EPH	LCSD12625	naphthalene			2.9	ug/g	6	48	40	140	2	25
		2-methylnaphthalene			2.9	ug/g	6	49	40	140	3	25
		phenanthrene			3.5	ug/g	6	59	40	140	1	25
		acenaphthene			3.3	ug/g	6	55	40	140	0	25
		acenaphthylene			3.1	ug/g	6	51	40	140	0	25
		fluorene			3.4	ug/g	6	57	40	140	1	25
		anthracene			3.4	ug/g	6	57	40	140	1	25
		fluoranthene			3.7	ug/g	6	61	40	140	4	25
		pyrene			4.0	ug/g	6	67	40	140	3	25
		benzo(a)anthracene			4.0	ug/g	6	66	40	140	3	25
		chrysene			4.1	ug/g	6	68	40	140	4	25
		benzo(b)fluoranthene			4.0	ug/g	6	66	40	140	1	25
		benzo(k)fluoranthene			3.8	ug/g	6	63	40	140	3	25
		benzo(a)pyrene			3.9	ug/g	6	64	40	140	3	25
		indeno(1,2,3-cd)pyrene			4.2	ug/g	6	69	40	140	2	25
		dibenzo(a,h)anthracene			4.1	ug/g	6	69	40	140	2	25
		benzo(g,h,i)perylene			4.1	ug/g	6	68	40	140	1	25
		Unadjusted C11-C22 Aromatics			65	ug/g	102	63	40	140	5	25
		C9-C18 Aliphatics		<	20	ug/g	36	52	40	140	8	25
		C19-C36 Aliphatics			54	ug/g	48	113	40	140	3	25
		C11-C22 Aromatics		<	20	ug/g			40	140		25
		1-chloro-octadecane SUR			55	%			40	140		
		o-terphenyl SUR			55	%			40	140		
		2-fluorobiphenyl SUR			68	%			40	140		
		2-bromonaphthalene SUR			66	%			40	140		

Method	QC ID	Parameter	Associated Sample		Result	Units	Amt Added	%R	Limits		RPD	RPD Limit
MA EPH	BLK12630	naphthalene		<	0.20	ug/g						
		2-methylnaphthalene		<	0.20	ug/g						
		phenanthrene		<	0.20	ug/g						
		acenaphthene		<	0.20	ug/g						
		acenaphthylene		<	0.20	ug/g						
		fluorene		<	0.20	ug/g						
		anthracene		<	0.20	ug/g						
		fluoranthene		<	0.20	ug/g						
		pyrene		<	0.20	ug/g						
		benzo(a)anthracene		<	0.20	ug/g						
		chrysene		<	0.20	ug/g						
		benzo(b)fluoranthene		<	0.20	ug/g						
		benzo(k)fluoranthene		<	0.20	ug/g						
		benzo(a)pyrene		<	0.20	ug/g						
		indeno(1,2,3-cd)pyrene		<	0.20	ug/g						
		dibenzo(a,h)anthracene		<	0.20	ug/g						
		benzo(g,h,i)perylene		<	0.20	ug/g						
		Unadjusted C11-C22 Aromatics		<	20	ug/g						
		C9-C18 Aliphatics		<	20	ug/g						
		C19-C36 Aliphatics		<	20	ug/g						
		C11-C22 Aromatics		<	20	ug/g						
		1-chloro-octadecane SUR			52	%			40	140		
		o-terphenyl SUR			59	%			40	140		
		2-fluorobiphenyl SUR			66	%			40	140		
		2-bromonaphthalene SUR			64	%			40	140		

Method	QC ID	Parameter	Associated Sample		Result	Units	Amt Added	%R	Limits		RPD	RPD Limit
MA EPH	LCS12630	naphthalene			3.1	ug/g	6	51	40	140		
		2-methylnaphthalene			3.1	ug/g	6	52	40	140		
		phenanthrene			3.6	ug/g	6	60	40	140		
		acenaphthene			3.3	ug/g	6	56	40	140		
		acenaphthylene			3.3	ug/g	6	54	40	140		
		fluorene			3.6	ug/g	6	60	40	140		
		anthracene			3.5	ug/g	6	59	40	140		
		fluoranthene			4.0	ug/g	6	66	40	140		
		pyrene			4.2	ug/g	6	70	40	140		
		benzo(a)anthracene			4.3	ug/g	6	71	40	140		
		chrysene			4.4	ug/g	6	73	40	140		
		benzo(b)fluoranthene			4.4	ug/g	6	73	40	140		
		benzo(k)fluoranthene			3.9	ug/g	6	65	40	140		
		benzo(a)pyrene			4.1	ug/g	6	68	40	140		
		indeno(1,2,3-cd)pyrene			4.4	ug/g	6	73	40	140		
		dibenzo(a,h)anthracene			4.4	ug/g	6	73	40	140		
		benzo(g,h,i)perylene			4.4	ug/g	6	73	40	140		
		Unadjusted C11-C22 Aromatics			65	ug/g	102	64	40	140		
		C9-C18 Aliphatics		<	20	ug/g	36	44	40	140		
		C19-C36 Aliphatics			49	ug/g	48	102	40	140		
		C11-C22 Aromatics		<	20	ug/g			40	140		
		1-chloro-octadecane SUR			52	%			40	140		
		o-terphenyl SUR			57	%			40	140		
		2-fluorobiphenyl SUR			64	%			40	140		
		2-bromonaphthalene SUR			61	%			40	140		

Method	QC ID	Parameter	Associated Sample		Result	Units	Amt Added	%R	Limits		RPD	RPD Limit
MA EPH	LCSD12630	naphthalene			2.9	ug/g	6	48	40	140	6	25
		2-methylnaphthalene			2.9	ug/g	6	49	40	140	6	25
		phenanthrene			3.5	ug/g	6	59	40	140	2	25
		acenaphthene			3.3	ug/g	6	55	40	140	1	25
		acenaphthylene			3.1	ug/g	6	52	40	140	4	25
		fluorene			3.6	ug/g	6	59	40	140	1	25
		anthracene			3.5	ug/g	6	59	40	140	0	25
		fluoranthene			4.1	ug/g	6	68	40	140	3	25
		pyrene			4.0	ug/g	6	66	40	140	5	25
		benzo(a)anthracene			4.2	ug/g	6	70	40	140	2	25
		chrysene			4.3	ug/g	6	71	40	140	2	25
		benzo(b)fluoranthene			4.1	ug/g	6	68	40	140	8	25
		benzo(k)fluoranthene			4.2	ug/g	6	70	40	140	8	25
		benzo(a)pyrene			4.1	ug/g	6	68	40	140	0	25
		indeno(1,2,3-cd)pyrene			4.2	ug/g	6	71	40	140	4	25
		dibenzo(a,h)anthracene			4.2	ug/g	6	71	40	140	3	25
		benzo(g,h,i)perylene			4.1	ug/g	6	69	40	140	6	25
		Unadjusted C11-C22 Aromatics			67	ug/g	102	66	40	140	3	25
		C9-C18 Aliphatics		<	20	ug/g	36	53	40	140	18	25
		C19-C36 Aliphatics			54	ug/g	48	112	40	140	9	25
		C11-C22 Aromatics		<	20	ug/g			40	140		25
		1-chloro-octadecane SUR			63	%			40	140		
		o-terphenyl SUR			60	%			40	140		
		2-fluorobiphenyl SUR			60	%			40	140		
		2-bromonaphthalene SUR			59	%			40	140		

Method	QC ID	Parameter	Associated Sample		Result	Units	Amt Added	%R	Limits		RPD	RPD Limit
SW3051A6020A	BLK12626	Silver		<	2.5	ug/g						
		Arsenic		<	2.5	ug/g						
		Barium		<	5.0	ug/g						
		Beryllium		<	0.50	ug/g						
		Cadmium		<	0.50	ug/g						
		Chromium		<	5.0	ug/g						
		Nickel		<	5.0	ug/g						
		Lead		<	2.5	ug/g						
		Antimony		<	0.50	ug/g						
		Selenium		<	5.0	ug/g						
		Thallium		<	0.50	ug/g						
		Vanadium		<	5.0	ug/g						
		Zinc		<	5.0	ug/g						
SW3051A6020A	CRM12626	Silver			47.3	ug/g	53.8		31.9	59.7		
		Arsenic			172	ug/g	219		129	240		
		Barium			634	ug/g	788		509	867		
		Beryllium			204	ug/g	247		160	272		
		Cadmium			155	ug/g	175		111	192		
		Chromium			301	ug/g	375		223	414		
		Nickel			258	ug/g	318		193	358		
		Lead			269	ug/g	321		207	353		
		Antimony			97.6	ug/g	159		15.9	180		
		Selenium			117	ug/g	145		78.5	160		
		Thallium			89.0	ug/g	98.6		53.7	111		
		Vanadium			205	ug/g	267		168	294		
		Zinc			239	ug/g	311		190	352		
SW3051A6020A	CRMD12626	Silver			45.8	ug/g	53.8		31.9	59.7	3	20
		Arsenic			168	ug/g	219		129	240	2	20
		Barium			592	ug/g	788		509	867	7	20
		Beryllium			205	ug/g	247		160	272	1	20
		Cadmium			147	ug/g	175		111	192	6	20
		Chromium			294	ug/g	375		223	414	2	20
		Nickel			254	ug/g	318		193	358	1	20
		Lead			251	ug/g	321		207	353	7	20
		Antimony			92.7	ug/g	159		15.9	180	5	20
		Selenium			106	ug/g	145		78.5	160	10	20
		Thallium			83.4	ug/g	98.6		53.7	111	6	20
		Vanadium			196	ug/g	267		168	294	5	20
		Zinc			230	ug/g	311		190	352	4	20

Method	QC ID	Parameter	Associated Sample		Result	Units	Amt Added	%R		Limits		RPD		RPD Limit
SW3051A6020A	DUP12626	Silver	52498-002	<	2.6	ug/g								20
		Arsenic	52498-002		4.8	ug/g						19		20
		Barium	52498-002		300	ug/g						39	*	20
		Beryllium	52498-002	<	0.51	ug/g								20
		Cadmium	52498-002		0.53	ug/g						43		20
		Chromium	52498-002		18	ug/g						15		20
		Nickel	52498-002		12	ug/g						3		20
		Lead	52498-002		140	ug/g						13		20
		Antimony	52498-002		0.83	ug/g						9		20
		Selenium	52498-002	<	5.1	ug/g								20
		Thallium	52498-002	<	0.51	ug/g								20
		Vanadium	52498-002		17	ug/g						2		20
		Zinc	52498-002		230	ug/g						17		20
SW3051A6020A	MS12626	Silver	52498-002		120	ug/g	125	97		75	125			
		Arsenic	52498-002		200	ug/g	250	78		75	125			
		Barium	52498-002		610	ug/g	250	161	*	75	125			
		Beryllium	52498-002		240	ug/g	250	96		75	125			
		Cadmium	52498-002		240	ug/g	250	97		75	125			
		Chromium	52498-002		240	ug/g	250	90		75	125			
		Nickel	52498-002		230	ug/g	250	87		75	125			
		Lead	52498-002		400	ug/g	250	110		75	125			
		Antimony	52498-002		240	ug/g	250	94		75	125			
		Selenium	52498-002		200	ug/g	250	78		75	125			
		Vanadium	52498-002		240	ug/g	250	89		75	125			
		Zinc	52498-002		550	ug/g	250	141	*	75	125			
SW7471B	BLK12622	Mercury		<	0.14	ug/g								
SW7471B	CRM12622	Mercury			0.249	ug/g	0.221			0.0908	0.351			
SW7471B	CRMD12622	Mercury			0.223	ug/g	0.221			0.0908	0.351		11	35
SW7471B	DUP12622	Mercury	52490-001	<	0.14	ug/g								35
SW7471B	MS12622	Mercury	52490-001		0.40	ug/g	0.333	119		80	120			

Method	QC ID	Parameter	Associated Sample		Result	Units	Amt Added	%R		Limits		RPD	RPD Limit
SW3060A7196A	CRM2001871	Chromium, Hexavalent			110	ug/g	260			93.3	350		
SW3060A7196A	CRMD2001871	Chromium, Hexavalent			100	ug/g	260			93.3	350		30
SW3060A7196A	DUP2001871	Chromium, Hexavalent	52498-013	<	0.48	ug/g							20
SW3060A7196A	MS2001871	Chromium, Hexavalent	52513-004	<	0.50	ug/g	25.01	1	*	75	125		
SW3060A7196A	MS2001871	Chromium, Hexavalent	52537-009	<	0.55	ug/g	27.25	1	*	75	125		
SW3060A7196A	MSD2001871	Chromium, Hexavalent	52513-004	<	0.49	ug/g	24.43	1	*	75	125	25	20
SW3060A7196A	MSD2001871	Chromium, Hexavalent	52537-009	<	0.55	ug/g	27.35	1	*	75	125	63	20
SW3060A7196A	PB2001871	Chromium, Hexavalent		<	0.40	ug/g							
SW9045C	DUP2001823	pH	52498-004		6.0	pH							

AROMATIC HYDROCARBON BREAKTHROUGH CALCULATION

Method: MADEP EPH 2019 Rev 2.1

	lcs12625 Aliphatic Breakthrough (%)	Acceptance Criteria	Date of Analysis
naphthalene	0.3%	<5.0%	4/8/2020
2-methylnaphthalene	0.2%	<5.0%	4/8/2020

	lcsd12625 Aliphatic Breakthrough (%)	Acceptance Criteria	Date of Analysis
naphthalene	0.3%	<5.0%	4/8/2020
2-methylnaphthalene	0.3%	<5.0%	4/8/2020

AROMATIC HYDROCARBON BREAKTHROUGH CALCULATION

Method: MADEP EPH 2019 Rev 2.1

	lcs12630 Aliphatic Breakthrough (%)	Acceptance Criteria	Date of Analysis
naphthalene	0.6%	<5.0%	4/9/2020
2-methylnaphthalene	0.2%	<5.0%	4/9/2020

	lcsd12630 Aliphatic Breakthrough (%)	Acceptance Criteria	Date of Analysis
naphthalene	0.4%	<5.0%	4/9/2020
2-methylnaphthalene	0.2%	<5.0%	4/9/2020

Absolute Resource associates
124 Heritage Avenue #16
Portsmouth, NH 03801
603-436-2001
absoluteresourceassociates.com

CHAIN-OF-CUSTODY RECORD AND ANALYSIS REQUEST

52498

Company Name: WESTON & SAMPSON
Company Address: 55 WALKERS BROOK DR READING, MA
Report To: SARAH DESTEFANO & JILL MURPHY
Phone #: 1800 SAMPSON
Invoice to: SARAH DESTEFANO
Email: DESTEFANOS@WSEINC.COM
PO #: FRAMINGHAM BROWNFIELDS

Project Name: CEDAR WOODS
Project #: 2180311
Project Location: NH (MA) ME VT
Accreditation Required? N/Y: Y
Protocol: RCRA SDWA NPDES; (MCP) NHDES DOD
Reporting Limits: ~~QAPP~~ MDEP CW-1 (S-1); EPA DW Other
Quote # N/A
☐ NH Reimbursement Pricing

ANALYSIS REQUEST

☐ VOC 8260 ☐ VOC 8260 NHDES ☐ VOC 8260 MADEP
☐ VOC 624.1 ☐ VOC BTEX MtBE, only ☐ VOC 8021VT
☒ VPH MADEP ☐ GRO 8015 ☐ 1,4-Dioxane *
☐ VOC 524.2 ☐ VOC 524.2 NH List ☐ Gases-List:
☐ TPH ☐ DRO 8015 ☒ EPH MADEP ☐ TPH Fingerprint
☐ 8270PAH ☐ 8270ABN ☐ 625.1 ☐ EDB
☐ 8082 PCB ☐ 8081 Pesticides ☐ 608.3 Pest/PCB
☐ O&G 1664 ☐ Mineral O&G 1664
☐ pH ☐ BOD ☐ Conductivity ☐ Turbidity ☐ Apparent Color
☐ TSS ☐ TDS ☐ TS ☐ TVS ☐ Alkalinity ☐ Acidity
☐ RCRA Metals ☐ Priority Pollutant Metals ☐ TAL Metals ☐ Hardness
☒ Total Metals-list: MCP 14 METALS
☐ Dissolved Metals-list:
☐ Ammonia ☐ COD ☐ TKN ☐ TN ☐ TON ☐ TOC ☐ Ferrous Iron
☐ T-Phosphorus ☐ Bacteria P/A ☐ Bacteria MPN ☐ Enterococci
☐ Cyanide ☐ Sulfide ☐ Nitrate + Nitrite ☐ Ortho P ☐ Phenols
☐ Nitrate ☐ Nitrite ☐ Chloride ☐ Sulfate ☐ Bromide ☐ Fluoride
☐ Corrosivity ☐ Ignitibility/FP
☐ TCLP Metals ☐ TCLP VOC ☐ TCLP SVOC ☐ TCLP Pesticide
Subcontract: ☐ Grain Size ☐ Herbicides ☐ Asbestos ☐ PFAS
HEXAVALENT CHROMIUM (CR IV)
Grab (G) or Composite (C)

Lab Sample ID (Lab Use Only)	Field ID	# CONTAINERS	Matrix: WATER	SOLID	OTHER	Preservation Method: HCl	HNO3	H2SO4	NaOH	MeOH	Sampling: DATE	TIME	SAMPLER
52498-01 HOLD	SB-106(0-1')			X		~~X~~	X			X	4/6/20	0920	
-02	SB-106(0-3')			X						X		0940	
-03	SB-106(5-8')			X						X		1006	
-04	SB-106(3-4')			X						X		0950	
-05	SB-105(0-3')			X						X		1040	
-06	SB-105(5-8')			X						X		1100	
-07	SB-102(0-3')			X						X		1145	
-08 HOLD	SB-102(0-1')			X						X		1130	
-09	SB-102(11-14')			X						X		1140	
-10	SB-101(0-3')			X						X		1255	
-11	SB-101(9-12')			X						X		1305	

TAT REQUESTED
Priority (24 hr)* ☐
Expedited (48 hr)* ☐
Standard ☐ (10 Business Days)
*Date Needed: 5-DAY

See absoluteresourceassociates.com for sample acceptance policy and current accreditation lists.

SPECIAL INSTRUCTIONS
* VPH W/ TARGET VOCS

REPORTING INSTRUCTIONS ☒ PDF (e-mail address) murphyj@wseinc.com
☐ HARD COPY REQUIRED ☒ EDD

RECEIVED ON ICE ☒ YES ☐ NO
TEMPERATURE 0 °C

CUSTODY RECORD
QSD-01 Revision 11/06/19

	Date	Time		Date	Time
Relinquished by Sampler:	4/6/20	1340	Received by:	4-6	1:48
Relinquished by:	4-6	15:43	Received by:		
Relinquished by:			Received by Laboratory:	4/6/20	15:43

Absolute Resource associates
124 Heritage Avenue #16
Portsmouth, NH 03801
603-436-2001
absoluteresourceassociates.com

CHAIN-OF-CUSTODY RECORD AND ANALYSIS REQUEST

52498

Company Name:

Company Address: SEE PAGE

Report To: 1 OF 2

Phone #:

Invoice to:

Email:

PO #:

Project Name:

Project #:

Project Location: NH MA ME VT

Accreditation Required? N/Y:

Protocol: RCRA SDWA NPDES MCP NHDES DOD

Reporting Limits: QAPP GW-1 S-1 EPA DW Other

Quote #

❑ NH Reimbursement Pricing

ANALYSIS REQUEST

❑ VOC 8260 MADEP ❑ VOC 8260 NHDES ❑ VOC 8260 ❑ VOC 624.1 ❑ VOC BTEX MtBE, only ❑ VOC 8021VT ✓ VPH MADEP ❑ GRO 8015 ❑ 1,4-Dioxane * ❑ VOC 524.2 ❑ VOC 524.2 NH List ❑ Gases-List: ❑ TPH ❑ DRO 8015 ✓EPH MADEP ❑ TPH Fingerprint ❑ 8270PAH ❑ 8270ABN ❑ 625.1 ❑ EDB ❑ 8082 PCB ❑ 8081 Pesticides ❑ 608.3 Pest/PCB ❑ O&G 1664 ❑ Mineral O&G 1664 ❑ pH ❑ BOD ❑ Conductivity ❑ Turbidity ❑ Apparent Color ❑ TSS ❑ TDS ❑ TS ❑ TVS ❑ Alkalinity ❑ Acidity ❑ RCRA Metals ❑ Priority Pollutant Metals ❑ TAL Metals ❑ Hardness ✓ Total Metals-list: MCP 14 METALS ❑ Dissolved Metals-list: ❑ Ammonia ❑ COD ❑ TKN ❑ TN ❑ TON ❑ TOC ❑ Ferrous Iron ❑ T-Phosphorus ❑ Bacteria P/A ❑ Bacteria MPN ❑ Enterococci ❑ Cyanide ❑ Sulfide ❑ Nitrate + Nitrite ❑ Ortho P ❑ Phenols ❑ Nitrate ❑ Nitrite ❑ Chloride ❑ Sulfate ❑ Bromide ❑ Fluoride ❑ Corrosivity ❑ Ignitibility/FP ❑ TCLP Metals ❑ TCLP VOC ❑ TCLP SVOC ❑ TCLP Pesticide Subcontract: ❑ Grain Size ❑ Herbicides ❑ Asbestos ❑ PFAS ✓ HEXAVALENT CHROMIUM (CR IV) Grab (G) or Composite (C)

Lab Sample ID (Lab Use Only)	Field ID	# CONTAINERS	Matrix: WATER	SOLID	OTHER	Preservation Method: HCl	HNO_3	H_2SO_4	NaOH	MeOH	Sampling: DATE	TIME	SAMPLER
52498-12	SB-103(0-3')			X						X	4/6/20	1220	
-13	SB-103(3-5')			X						X		1220	
-14	SB-103(7-10')			X						X		1225	
-15	TRIP BLANK			X						X	4/6/20		

VPH MADEP 4/6/20 MDM — Total Metals-list: MCP 14 METALS
VPH MADEP 4/6/20 MDM — Total Metals-list: MCP 14 METALS
VPH — Total Metals-list: MCP 14 METALS
Trip Blank — VOC 8260 MADEP: X

HEXAVALENT CHROMIUM (CR IV): MDM 4/6/20 (G) (G)

TAT REQUESTED
Priority (24 hr)* ❑
Expedited (48 hr)* ❑
Standard ❑
(10 Business Days)
*Date Needed 5-DAY

See absoluteresourceassociates.com for sample acceptance policy and current accreditation lists.

SPECIAL INSTRUCTIONS
*VPH W/TARGET VOCS

REPORTING INSTRUCTIONS ✓PDF (e-mail address) ❑ HARD COPY REQUIRED ❑ EDD

RECEIVED ON ICE ✓YES ❑NO
TEMPERATURE 6 °C

CUSTODY RECORD
QSD-01 Revision 11/06/19

	Relinquished by Sampler:	Date	Time	Received by:	Date	Time
		4/6/20	1340		4-6	1-40
	Relinquished by:	Date	Time	Received by:	Date	Time
		4-6	1543			
	Relinquished by:	Date	Time	Received by Laboratory:	Date	Time
					4/6/20	1543

Laboratory Report

Absolute Resource associates
124 Heritage Avenue Portsmouth NH 03801

Jill Murphy
Weston & Sampson
55 Walkers Brook Drive
Reading, MA 01867

PO Number: Framingham Brownfields
Job ID: 52513
Date Received: 4/7/20

Project: Cedar Woods 21

Attached please find results for the analysis of the samples received on the date referenced above.

Unless otherwise noted in the attached report, the analyses performed met the requirements of Absolute Resource Associates' Quality Assurance Plan. The Standard Operating Procedures are based upon USEPA SW-846, USEPA Methods for Chemical Analysis of Water and Wastewater, Standard Methods for the Examination of Water and Wastewater and other recognized methodologies. The results contained in this report pertain only to the samples as indicated on the chain of custody.

Absolute Resource Associates maintains certification with the agencies listed below. The reported results apply to the sample(s) in the condition as received at the time the laboratory took custody. This report shall not be reproduced except in full and with approval from the laboratory. The liability of ARA is limited to the cost of the requested analyses, unless otherwise agreed upon in writing.

We appreciate the opportunity to provide laboratory services. If you have any questions regarding the enclosed report, please contact the laboratory and we will be glad to assist you.

Sincerely,
Absolute Resource Associates

Aaron DeWees
Chief Operating Officer

Date of Approval: 5/4/2020
Total number of pages: 69

Absolute Resource Associates Certifications

New Hampshire	1732	Massachusetts	M-NH902
Maine	NH902		

Project ID: Cedar Woods 21

Sample Association Table

Field ID	Matrix	Date-Time Sampled	Lab#	Analysis
SB-104 (0-3')	Solid	4/7/2020 8:45	52513-001	
				Antimony in solids by 6020
				Arsenic in solids by 6020
				Barium in solids by 6020
				Beryllium in solids by 6020
				Cadmium in solids by 6020
				Chromium in solids by 6020
				Combo: 14 MA MCP Metals
				EPH in solids by MADEP Method
				Lead in solids by 6020
				Mercury in solids by 7471
				Nickel in solids by 6020
				Selenium in solids by 6020
				Silver in solids by 6020
				Solid Digestion for ICP Analysis
				Thallium in solids by 6020
				Vanadium in solids by 6020
				Zinc in solids by 6020
SB-104 (8-10')	Solid	4/7/2020 8:55	52513-002	
				Antimony in solids by 6020
				Arsenic in solids by 6020
				Barium in solids by 6020
				Beryllium in solids by 6020
				Cadmium in solids by 6020
				Chromium in solids by 6020
				Combo: 14 MA MCP Metals
				EPH in solids by MADEP Method
				Hexavalent Chromium in solids by SW3060A7196A
				Lead in solids by 6020
				Mercury in solids by 7471
				Nickel in solids by 6020
				ORP in solids by ASTM-1498-08
				pH in solids by SW9045C
				Selenium in solids by 6020
				Silver in solids by 6020
				Solid Digestion for ICP Analysis
				Thallium in solids by 6020
				Vanadium in solids by 6020
				VPH in solids by MA DEP Method
				Zinc in solids by 6020

Project ID: Cedar Woods 21

Sample Association Table

Field ID	Matrix	Date-Time Sampled	Lab#	Analysis
SB-107 (0-3')	Solid	4/7/2020 10:00	52513-004	
				Antimony in solids by 6020
				Arsenic in solids by 6020
				Barium in solids by 6020
				Beryllium in solids by 6020
				Cadmium in solids by 6020
				Chromium in solids by 6020
				Combo: 14 MA MCP Metals
				EPH in solids by MADEP Method
				Field Specified Laboratory Duplicate
				Field Specified Matrix Spike
				Hexavalent Chromium in solids by SW3060A7196A
				Lead in solids by 6020
				Mercury in solids by 7471
				Nickel in solids by 6020
				ORP in solids by ASTM-1498-08
				pH in solids by SW9045C
				Selenium in solids by 6020
				Silver in solids by 6020
				Solid Digestion for ICP Analysis
				Thallium in solids by 6020
				Vanadium in solids by 6020
				VPH in solids by MA DEP Method
				Zinc in solids by 6020
SB-107 (10-11')	Solid	4/7/2020 10:20	52513-005	
				Antimony in solids by 6020
				Arsenic in solids by 6020
				Barium in solids by 6020
				Beryllium in solids by 6020
				Cadmium in solids by 6020
				Chromium in solids by 6020
				Combo: 14 MA MCP Metals
				EPH in solids by MADEP Method
				Lead in solids by 6020
				Mercury in solids by 7471
				Nickel in solids by 6020
				Selenium in solids by 6020
				Silver in solids by 6020
				Solid Digestion for ICP Analysis
				Thallium in solids by 6020
				Vanadium in solids by 6020
				VPH in solids by MA DEP Method
				Zinc in solids by 6020

Project ID: Cedar Woods 21

Sample Association Table

Field ID	Matrix	Date-Time Sampled	Lab#	Analysis
SB-108 (0-3')	Solid	4/7/2020 10:50	52513-007	
				Antimony in solids by 6020
				Arsenic in solids by 6020
				Barium in solids by 6020
				Beryllium in solids by 6020
				Cadmium in solids by 6020
				Chromium in solids by 6020
				Combo: 14 MA MCP Metals
				EPH in solids by MADEP Method
				Lead in solids by 6020
				Mercury in solids by 7471
				Nickel in solids by 6020
				Selenium in solids by 6020
				Silver in solids by 6020
				Solid Digestion for ICP Analysis
				Thallium in solids by 6020
				Vanadium in solids by 6020
				Zinc in solids by 6020
SB-108 (6-9')	Solid	4/7/2020 11:00	52513-008	
				Antimony in solids by 6020
				Arsenic in solids by 6020
				Barium in solids by 6020
				Beryllium in solids by 6020
				Cadmium in solids by 6020
				Chromium in solids by 6020
				Combo: 14 MA MCP Metals
				EPH in solids by MADEP Method
				Hexavalent Chromium in solids by SW3060A7196A
				Lead in solids by 6020
				Mercury in solids by 7471
				Nickel in solids by 6020
				ORP in solids by ASTM-1498-08
				pH in solids by SW9045C
				Selenium in solids by 6020
				Silver in solids by 6020
				Solid Digestion for ICP Analysis
				Thallium in solids by 6020
				Vanadium in solids by 6020
				VOCs in solids by 8260
				VPH in solids by MA DEP Method
				Zinc in solids by 6020

Project ID: Cedar Woods 21

Sample Association Table

Field ID	Matrix	Date-Time Sampled	Lab#	Analysis
SB-109 (0-3')	Solid	4/7/2020 11:40	52513-010	
				Antimony in solids by 6020
				Arsenic in solids by 6020
				Barium in solids by 6020
				Beryllium in solids by 6020
				Cadmium in solids by 6020
				Chromium in solids by 6020
				Combo: 14 MA MCP Metals
				EPH in solids by MADEP Method
				Lead in solids by 6020
				Mercury in solids by 7471
				Nickel in solids by 6020
				Selenium in solids by 6020
				Silver in solids by 6020
				Solid Digestion for ICP Analysis
				Thallium in solids by 6020
				Vanadium in solids by 6020
				Zinc in solids by 6020
SB-109 (5-8')	Solid	4/7/2020 11:45	52513-011	
				Antimony in solids by 6020
				Arsenic in solids by 6020
				Barium in solids by 6020
				Beryllium in solids by 6020
				Cadmium in solids by 6020
				Chromium in solids by 6020
				Combo: 14 MA MCP Metals
				EPH in solids by MADEP Method
				Hexavalent Chromium in solids by SW3060A7196A
				Lead in solids by 6020
				Mercury in solids by 7471
				Nickel in solids by 6020
				ORP in solids by ASTM-1498-08
				pH in solids by SW9045C
				Selenium in solids by 6020
				Silver in solids by 6020
				Solid Digestion for ICP Analysis
				Thallium in solids by 6020
				Vanadium in solids by 6020
				VPH in solids by MA DEP Method
				Zinc in solids by 6020

Project ID: Cedar Woods 21

Sample Association Table

Field ID	Matrix	Date-Time Sampled	Lab#	Analysis
SB-110 (0-3')	Solid	4/7/2020 12:50	52513-013	
				Antimony in solids by 6020
				Arsenic in solids by 6020
				Barium in solids by 6020
				Beryllium in solids by 6020
				Cadmium in solids by 6020
				Chromium in solids by 6020
				Combo: 14 MA MCP Metals
				EPH in solids by MADEP Method
				Lead in solids by 6020
				Mercury in solids by 7471
				Nickel in solids by 6020
				Selenium in solids by 6020
				Silver in solids by 6020
				Solid Digestion for ICP Analysis
				Thallium in solids by 6020
				Vanadium in solids by 6020
				Zinc in solids by 6020
SB-110 (5-8')	Solid	4/7/2020 12:55	52513-014	
				Antimony in solids by 6020
				Arsenic in solids by 6020
				Barium in solids by 6020
				Beryllium in solids by 6020
				Cadmium in solids by 6020
				Chromium in solids by 6020
				Combo: 14 MA MCP Metals
				EPH in solids by MADEP Method
				Hexavalent Chromium in solids by SW3060A7196A
				Lead in solids by 6020
				Mercury in solids by 7471
				Nickel in solids by 6020
				ORP in solids by ASTM-1498-08
				pH in solids by SW9045C
				Selenium in solids by 6020
				Silver in solids by 6020
				Solid Digestion for ICP Analysis
				Thallium in solids by 6020
				Vanadium in solids by 6020
				VPH in solids by MA DEP Method
				Zinc in solids by 6020

Project ID: Cedar Woods 21

Sample Association Table

Field ID	Matrix	Date-Time Sampled	Lab#	Analysis
SB-112 (0-3')	Solid	4/7/2020 13:20	52513-016	
				Antimony in solids by 6020
				Arsenic in solids by 6020
				Barium in solids by 6020
				Beryllium in solids by 6020
				Cadmium in solids by 6020
				Chromium in solids by 6020
				Combo: 14 MA MCP Metals
				EPH in solids by MADEP Method
				Lead in solids by 6020
				Mercury in solids by 7471
				Nickel in solids by 6020
				Selenium in solids by 6020
				Silver in solids by 6020
				Solid Digestion for ICP Analysis
				Thallium in solids by 6020
				Vanadium in solids by 6020
				Zinc in solids by 6020
SB-112 (5-8')	Solid	4/7/2020 13:25	52513-017	
				Antimony in solids by 6020
				Arsenic in solids by 6020
				Barium in solids by 6020
				Beryllium in solids by 6020
				Cadmium in solids by 6020
				Chromium in solids by 6020
				Combo: 14 MA MCP Metals
				EPH in solids by MADEP Method
				Hexavalent Chromium in solids by SW3060A7196A
				Lead in solids by 6020
				Mercury in solids by 7471
				Nickel in solids by 6020
				ORP in solids by ASTM-1498-08
				pH in solids by SW9045C
				Selenium in solids by 6020
				Silver in solids by 6020
				Solid Digestion for ICP Analysis
				Thallium in solids by 6020
				Vanadium in solids by 6020
				VPH in solids by MA DEP Method
				Zinc in solids by 6020

Project ID: Cedar Woods 21

Sample Association Table

Field ID	Matrix	Date-Time Sampled	Lab#	Analysis
DUP-1	Solid	4/7/2020 0:00	52513-018	
				Antimony in solids by 6020
				Arsenic in solids by 6020
				Barium in solids by 6020
				Beryllium in solids by 6020
				Cadmium in solids by 6020
				Chromium in solids by 6020
				Combo: 14 MA MCP Metals
				EPH in solids by MADEP Method
				Lead in solids by 6020
				Mercury in solids by 7471
				Nickel in solids by 6020
				Selenium in solids by 6020
				Silver in solids by 6020
				Solid Digestion for ICP Analysis
				Thallium in solids by 6020
				Vanadium in solids by 6020
				VPH in solids by MA DEP Method
				Zinc in solids by 6020
Trip Blank	Solid	4/7/2020 0:00	52513-019	
				VOCs in solids by 8260

Project ID: Cedar Woods 21
Job ID: 52513

Sample#: 52513-008
Sample ID: SB-108 (6-9')
Matrix: Solid Percent Dry: 80.4% Results expressed on a dry weight basis.
Samples prepared in methanol at a ratio of 0.67 mL MeOH/g soil.
Received on ice at 2˚C, in satisfactory condition.
Sampled: 4/7/20 11:00

Parameter	Result	Reporting Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
dichlorodifluoromethane	< 0.11	0.11	ug/g	1	LMM	4/8/20	12627	4/10/20	9:36	SW5035A8260D
chloromethane	< 0.11	0.11	ug/g	1	LMM	4/8/20	12627	4/10/20	9:36	SW5035A8260D
vinyl chloride	< 0.11	0.11	ug/g	1	LMM	4/8/20	12627	4/10/20	9:36	SW5035A8260D
bromomethane	< 0.27	0.27	ug/g	1	LMM	4/8/20	12627	4/10/20	9:36	SW5035A8260D
chloroethane	< 0.11	0.11	ug/g	1	LMM	4/8/20	12627	4/10/20	9:36	SW5035A8260D
trichlorofluoromethane	< 0.11	0.11	ug/g	1	LMM	4/8/20	12627	4/10/20	9:36	SW5035A8260D
diethyl ether	< 0.54	0.54	ug/g	1	LMM	4/8/20	12627	4/10/20	9:36	SW5035A8260D
acetone	< 2.7	2.7	ug/g	1	LMM	4/8/20	12627	4/10/20	9:36	SW5035A8260D
1,1-dichloroethene	< 0.11	0.11	ug/g	1	LMM	4/8/20	12627	4/10/20	9:36	SW5035A8260D
methylene chloride	< 0.27	0.27	ug/g	1	LMM	4/8/20	12627	4/10/20	9:36	SW5035A8260D
carbon disulfide	< 0.11	0.11	ug/g	1	LMM	4/8/20	12627	4/10/20	9:36	SW5035A8260D
methyl t-butyl ether (MTBE)	< 0.11	0.11	ug/g	1	LMM	4/8/20	12627	4/10/20	9:36	SW5035A8260D
trans-1,2-dichloroethene	< 0.11	0.11	ug/g	1	LMM	4/8/20	12627	4/10/20	9:36	SW5035A8260D
isopropyl ether (DIPE)	< 0.11	0.11	ug/g	1	LMM	4/8/20	12627	4/10/20	9:36	SW5035A8260D
ethyl t-butyl ether (ETBE)	< 0.11	0.11	ug/g	1	LMM	4/8/20	12627	4/10/20	9:36	SW5035A8260D
1,1-dichloroethane	< 0.11	0.11	ug/g	1	LMM	4/8/20	12627	4/10/20	9:36	SW5035A8260D
t-butanol (TBA)	< 2.7	2.7	ug/g	1	LMM	4/8/20	12627	4/10/20	9:36	SW5035A8260D
2-butanone (MEK)	< 0.32	0.32	ug/g	1	LMM	4/8/20	12627	4/10/20	9:36	SW5035A8260D
2,2-dichloropropane	< 0.11	0.11	ug/g	1	LMM	4/8/20	12627	4/10/20	9:36	SW5035A8260D
cis-1,2-dichloroethene	**0.20**	0.11	ug/g	1	LMM	4/8/20	12627	4/10/20	9:36	SW5035A8260D
chloroform	< 0.11	0.11	ug/g	1	LMM	4/8/20	12627	4/10/20	9:36	SW5035A8260D
bromochloromethane	< 0.11	0.11	ug/g	1	LMM	4/8/20	12627	4/10/20	9:36	SW5035A8260D
tetrahydrofuran (THF)	< 0.54	0.54	ug/g	1	LMM	4/8/20	12627	4/10/20	9:36	SW5035A8260D
1,1,1-trichloroethane	< 0.11	0.11	ug/g	1	LMM	4/8/20	12627	4/10/20	9:36	SW5035A8260D
1,1-dichloropropene	< 0.11	0.11	ug/g	1	LMM	4/8/20	12627	4/10/20	9:36	SW5035A8260D
t-amyl-methyl ether (TAME)	< 0.11	0.11	ug/g	1	LMM	4/8/20	12627	4/10/20	9:36	SW5035A8260D
carbon tetrachloride	< 0.11	0.11	ug/g	1	LMM	4/8/20	12627	4/10/20	9:36	SW5035A8260D
1,2-dichloroethane	< 0.11	0.11	ug/g	1	LMM	4/8/20	12627	4/10/20	9:36	SW5035A8260D
benzene	**0.19**	0.11	ug/g	1	LMM	4/8/20	12627	4/10/20	9:36	SW5035A8260D
trichloroethene	**0.36**	0.11	ug/g	1	LMM	4/8/20	12627	4/10/20	9:36	SW5035A8260D
1,2-dichloropropane	< 0.11	0.11	ug/g	1	LMM	4/8/20	12627	4/10/20	9:36	SW5035A8260D
bromodichloromethane	< 0.11	0.11	ug/g	1	LMM	4/8/20	12627	4/10/20	9:36	SW5035A8260D
1,4-dioxane	< 2.7	2.7	ug/g	1	LMM	4/8/20	12627	4/10/20	9:36	SW5035A8260D
dibromomethane	< 0.11	0.11	ug/g	1	LMM	4/8/20	12627	4/10/20	9:36	SW5035A8260D
4-methyl-2-pentanone (MIBK)	< 0.49	0.49	ug/g	1	LMM	4/8/20	12627	4/10/20	9:36	SW5035A8260D
cis-1,3-dichloropropene	< 0.11	0.11	ug/g	1	LMM	4/8/20	12627	4/10/20	9:36	SW5035A8260D
toluene	**0.46**	0.11	ug/g	1	LMM	4/8/20	12627	4/10/20	9:36	SW5035A8260D
trans-1,3-dichloropropene	< 0.11	0.11	ug/g	1	LMM	4/8/20	12627	4/10/20	9:36	SW5035A8260D
2-hexanone	< 0.54	0.54	ug/g	1	LMM	4/8/20	12627	4/10/20	9:36	SW5035A8260D
1,1,2-trichloroethane	< 0.11	0.11	ug/g	1	LMM	4/8/20	12627	4/10/20	9:36	SW5035A8260D
1,3-dichloropropane	< 0.11	0.11	ug/g	1	LMM	4/8/20	12627	4/10/20	9:36	SW5035A8260D

Project ID: Cedar Woods 21
Job ID: 52513

Sample#: 52513-008
Sample ID: SB-108 (6-9')
Matrix: Solid Percent Dry: 80.4% Results expressed on a dry weight basis.
Samples prepared in methanol at a ratio of 0.67 mL MeOH/g soil.
Received on ice at 2˚C, in satisfactory condition.
Sampled: 4/7/20 11:00

Parameter	Result	Reporting Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
tetrachloroethene	< 0.11	0.11	ug/g	1	LMM	4/8/20	12627	4/10/20	9:36	SW5035A8260D
dibromochloromethane	< 0.11	0.11	ug/g	1	LMM	4/8/20	12627	4/10/20	9:36	SW5035A8260D
1,2-dibromoethane (EDB)	< 0.11	0.11	ug/g	1	LMM	4/8/20	12627	4/10/20	9:36	SW5035A8260D
chlorobenzene	< 0.11	0.11	ug/g	1	LMM	4/8/20	12627	4/10/20	9:36	SW5035A8260D
1,1,1,2-tetrachloroethane	< 0.11	0.11	ug/g	1	LMM	4/8/20	12627	4/10/20	9:36	SW5035A8260D
ethylbenzene	**0.59**	0.11	ug/g	1	LMM	4/8/20	12627	4/10/20	9:36	SW5035A8260D
m&p-xylenes	**2.9**	0.11	ug/g	1	LMM	4/8/20	12627	4/10/20	9:36	SW5035A8260D
o-xylene	**0.53**	0.11	ug/g	1	LMM	4/8/20	12627	4/10/20	9:36	SW5035A8260D
styrene	< 0.11	0.11	ug/g	1	LMM	4/8/20	12627	4/10/20	9:36	SW5035A8260D
bromoform	< 0.11	0.11	ug/g	1	LMM	4/8/20	12627	4/10/20	9:36	SW5035A8260D
isopropylbenzene	**0.34**	0.11	ug/g	1	LMM	4/8/20	12627	4/10/20	9:36	SW5035A8260D
1,1,2,2-tetrachloroethane	< 0.11	0.11	ug/g	1	LMM	4/8/20	12627	4/10/20	9:36	SW5035A8260D
1,2,3-trichloropropane	< 0.11	0.11	ug/g	1	LMM	4/8/20	12627	4/10/20	9:36	SW5035A8260D
n-propylbenzene	**0.93**	0.11	ug/g	1	LMM	4/8/20	12627	4/10/20	9:36	SW5035A8260D
bromobenzene	< 0.11	0.11	ug/g	1	LMM	4/8/20	12627	4/10/20	9:36	SW5035A8260D
1,3,5-trimethylbenzene	**2.3**	0.11	ug/g	1	LMM	4/8/20	12627	4/10/20	9:36	SW5035A8260D
2-chlorotoluene	< 0.11	0.11	ug/g	1	LMM	4/8/20	12627	4/10/20	9:36	SW5035A8260D
4-chlorotoluene	< 0.11	0.11	ug/g	1	LMM	4/8/20	12627	4/10/20	9:36	SW5035A8260D
tert-butylbenzene	< 0.11	0.11	ug/g	1	LMM	4/8/20	12627	4/10/20	9:36	SW5035A8260D
1,2,4-trimethylbenzene	**6.9**	0.11	ug/g	1	LMM	4/8/20	12627	4/10/20	9:36	SW5035A8260D
sec-butylbenzene	**0.26**	0.11	ug/g	1	LMM	4/8/20	12627	4/10/20	9:36	SW5035A8260D
1,3-dichlorobenzene	< 0.11	0.11	ug/g	1	LMM	4/8/20	12627	4/10/20	9:36	SW5035A8260D
4-isopropyltoluene	**0.30**	0.11	ug/g	1	LMM	4/8/20	12627	4/10/20	9:36	SW5035A8260D
1,4-dichlorobenzene	< 0.11	0.11	ug/g	1	LMM	4/8/20	12627	4/10/20	9:36	SW5035A8260D
1,2-dichlorobenzene	< 0.11	0.11	ug/g	1	LMM	4/8/20	12627	4/10/20	9:36	SW5035A8260D
n-butylbenzene	< 0.11	0.11	ug/g	1	LMM	4/8/20	12627	4/10/20	9:36	SW5035A8260D
1,2-dibromo-3-chloropropane (DBCP)	< 0.11	0.11	ug/g	1	LMM	4/8/20	12627	4/10/20	9:36	SW5035A8260D
1,2,4-trichlorobenzene	< 0.11	0.11	ug/g	1	LMM	4/8/20	12627	4/10/20	9:36	SW5035A8260D
hexachlorobutadiene	< 0.11	0.11	ug/g	1	LMM	4/8/20	12627	4/10/20	9:36	SW5035A8260D
naphthalene	**1.8**	0.27	ug/g	1	LMM	4/8/20	12627	4/10/20	9:36	SW5035A8260D
1,2,3-trichlorobenzene	< 0.11	0.11	ug/g	1	LMM	4/8/20	12627	4/10/20	9:36	SW5035A8260D
Surrogate Recovery		**Limits**								
dibromofluoromethane SUR	**81**	78-114	%	1	LMM	4/8/20	12627	4/10/20	9:36	SW5035A8260D
toluene-D8 SUR	**98**	88-110	%	1	LMM	4/8/20	12627	4/10/20	9:36	SW5035A8260D
4-bromofluorobenzene SUR	**116** *	86-115	%	1	LMM	4/8/20	12627	4/10/20	9:36	SW5035A8260D
a,a,a-trifluorotoluene SUR	**89**	70-130	%	1	LMM	4/8/20	12627	4/10/20	9:36	SW5035A8260D

**** The surrogate showed recovery outside the acceptance limits as a result of hydrocarbons present in the sample.***

Project ID: Cedar Woods 21
Job ID: 52513

Sample#: 52513-019
Sample ID: Trip Blank
Matrix: Solid
Samples prepared in methanol within a 1:1 ratio +/- 25% mL MeOH/g soil
Received on ice at 2˚C, in satisfactory condition.
Sampled: 4/7/20 0:00

Parameter	Result	Reporting Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
dichlorodifluoromethane	< 0.10	0.10	ug/g	1	LMM	4/8/20	12627	4/9/20	12:48	SW5035A8260D
chloromethane	< 0.10	0.10	ug/g	1	LMM	4/8/20	12627	4/9/20	12:48	SW5035A8260D
vinyl chloride	< 0.10	0.10	ug/g	1	LMM	4/8/20	12627	4/9/20	12:48	SW5035A8260D
bromomethane	< 0.25	0.25	ug/g	1	LMM	4/8/20	12627	4/9/20	12:48	SW5035A8260D
chloroethane	< 0.10	0.10	ug/g	1	LMM	4/8/20	12627	4/9/20	12:48	SW5035A8260D
trichlorofluoromethane	< 0.10	0.10	ug/g	1	LMM	4/8/20	12627	4/9/20	12:48	SW5035A8260D
diethyl ether	< 0.50	0.50	ug/g	1	LMM	4/8/20	12627	4/9/20	12:48	SW5035A8260D
acetone	< 2.5	2.5	ug/g	1	LMM	4/8/20	12627	4/9/20	12:48	SW5035A8260D
1,1-dichloroethene	< 0.10	0.10	ug/g	1	LMM	4/8/20	12627	4/9/20	12:48	SW5035A8260D
methylene chloride	< 0.25	0.25	ug/g	1	LMM	4/8/20	12627	4/9/20	12:48	SW5035A8260D
carbon disulfide	< 0.10	0.10	ug/g	1	LMM	4/8/20	12627	4/9/20	12:48	SW5035A8260D
methyl t-butyl ether (MTBE)	< 0.10	0.10	ug/g	1	LMM	4/8/20	12627	4/9/20	12:48	SW5035A8260D
trans-1,2-dichloroethene	< 0.10	0.10	ug/g	1	LMM	4/8/20	12627	4/9/20	12:48	SW5035A8260D
isopropyl ether (DIPE)	< 0.10	0.10	ug/g	1	LMM	4/8/20	12627	4/9/20	12:48	SW5035A8260D
ethyl t-butyl ether (ETBE)	< 0.10	0.10	ug/g	1	LMM	4/8/20	12627	4/9/20	12:48	SW5035A8260D
1,1-dichloroethane	< 0.10	0.10	ug/g	1	LMM	4/8/20	12627	4/9/20	12:48	SW5035A8260D
t-butanol (TBA)	< 2.5	2.5	ug/g	1	LMM	4/8/20	12627	4/9/20	12:48	SW5035A8260D
2-butanone (MEK)	< 0.30	0.30	ug/g	1	LMM	4/8/20	12627	4/9/20	12:48	SW5035A8260D
2,2-dichloropropane	< 0.10	0.10	ug/g	1	LMM	4/8/20	12627	4/9/20	12:48	SW5035A8260D
cis-1,2-dichloroethene	< 0.10	0.10	ug/g	1	LMM	4/8/20	12627	4/9/20	12:48	SW5035A8260D
chloroform	< 0.10	0.10	ug/g	1	LMM	4/8/20	12627	4/9/20	12:48	SW5035A8260D
bromochloromethane	< 0.10	0.10	ug/g	1	LMM	4/8/20	12627	4/9/20	12:48	SW5035A8260D
tetrahydrofuran (THF)	< 0.50	0.50	ug/g	1	LMM	4/8/20	12627	4/9/20	12:48	SW5035A8260D
1,1,1-trichloroethane	< 0.10	0.10	ug/g	1	LMM	4/8/20	12627	4/9/20	12:48	SW5035A8260D
1,1-dichloropropene	< 0.10	0.10	ug/g	1	LMM	4/8/20	12627	4/9/20	12:48	SW5035A8260D
t-amyl-methyl ether (TAME)	< 0.10	0.10	ug/g	1	LMM	4/8/20	12627	4/9/20	12:48	SW5035A8260D
carbon tetrachloride	< 0.10	0.10	ug/g	1	LMM	4/8/20	12627	4/9/20	12:48	SW5035A8260D
1,2-dichloroethane	< 0.10	0.10	ug/g	1	LMM	4/8/20	12627	4/9/20	12:48	SW5035A8260D
benzene	< 0.10	0.10	ug/g	1	LMM	4/8/20	12627	4/9/20	12:48	SW5035A8260D
trichloroethene	< 0.10	0.10	ug/g	1	LMM	4/8/20	12627	4/9/20	12:48	SW5035A8260D
1,2-dichloropropane	< 0.10	0.10	ug/g	1	LMM	4/8/20	12627	4/9/20	12:48	SW5035A8260D
bromodichloromethane	< 0.10	0.10	ug/g	1	LMM	4/8/20	12627	4/9/20	12:48	SW5035A8260D
1,4-dioxane	< 2.5	2.5	ug/g	1	LMM	4/8/20	12627	4/9/20	12:48	SW5035A8260D
dibromomethane	< 0.10	0.10	ug/g	1	LMM	4/8/20	12627	4/9/20	12:48	SW5035A8260D
4-methyl-2-pentanone (MIBK)	< 0.45	0.45	ug/g	1	LMM	4/8/20	12627	4/9/20	12:48	SW5035A8260D
cis-1,3-dichloropropene	< 0.10	0.10	ug/g	1	LMM	4/8/20	12627	4/9/20	12:48	SW5035A8260D
toluene	< 0.10	0.10	ug/g	1	LMM	4/8/20	12627	4/9/20	12:48	SW5035A8260D
trans-1,3-dichloropropene	< 0.10	0.10	ug/g	1	LMM	4/8/20	12627	4/9/20	12:48	SW5035A8260D
2-hexanone	< 0.50	0.50	ug/g	1	LMM	4/8/20	12627	4/9/20	12:48	SW5035A8260D
1,1,2-trichloroethane	< 0.10	0.10	ug/g	1	LMM	4/8/20	12627	4/9/20	12:48	SW5035A8260D
1,3-dichloropropane	< 0.10	0.10	ug/g	1	LMM	4/8/20	12627	4/9/20	12:48	SW5035A8260D

Project ID: Cedar Woods 21
Job ID: 52513
Sample#: 52513-019
Sample ID: Trip Blank
Matrix: Solid
Samples prepared in methanol within a 1:1 ratio +/- 25% mL MeOH/g soil
Received on ice at 2˚C, in satisfactory condition.
Sampled: 4/7/20 0:00

Parameter	Result	Reporting Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
tetrachloroethene	< 0.10	0.10	ug/g	1	LMM	4/8/20	12627	4/9/20	12:48	SW5035A8260D
dibromochloromethane	< 0.10	0.10	ug/g	1	LMM	4/8/20	12627	4/9/20	12:48	SW5035A8260D
1,2-dibromoethane (EDB)	< 0.10	0.10	ug/g	1	LMM	4/8/20	12627	4/9/20	12:48	SW5035A8260D
chlorobenzene	< 0.10	0.10	ug/g	1	LMM	4/8/20	12627	4/9/20	12:48	SW5035A8260D
1,1,1,2-tetrachloroethane	< 0.10	0.10	ug/g	1	LMM	4/8/20	12627	4/9/20	12:48	SW5035A8260D
ethylbenzene	< 0.10	0.10	ug/g	1	LMM	4/8/20	12627	4/9/20	12:48	SW5035A8260D
m&p-xylenes	< 0.10	0.10	ug/g	1	LMM	4/8/20	12627	4/9/20	12:48	SW5035A8260D
o-xylene	< 0.10	0.10	ug/g	1	LMM	4/8/20	12627	4/9/20	12:48	SW5035A8260D
styrene	< 0.10	0.10	ug/g	1	LMM	4/8/20	12627	4/9/20	12:48	SW5035A8260D
bromoform	< 0.10	0.10	ug/g	1	LMM	4/8/20	12627	4/9/20	12:48	SW5035A8260D
isopropylbenzene	< 0.10	0.10	ug/g	1	LMM	4/8/20	12627	4/9/20	12:48	SW5035A8260D
1,1,2,2-tetrachloroethane	< 0.10	0.10	ug/g	1	LMM	4/8/20	12627	4/9/20	12:48	SW5035A8260D
1,2,3-trichloropropane	< 0.10	0.10	ug/g	1	LMM	4/8/20	12627	4/9/20	12:48	SW5035A8260D
n-propylbenzene	< 0.10	0.10	ug/g	1	LMM	4/8/20	12627	4/9/20	12:48	SW5035A8260D
bromobenzene	< 0.10	0.10	ug/g	1	LMM	4/8/20	12627	4/9/20	12:48	SW5035A8260D
1,3,5-trimethylbenzene	< 0.10	0.10	ug/g	1	LMM	4/8/20	12627	4/9/20	12:48	SW5035A8260D
2-chlorotoluene	< 0.10	0.10	ug/g	1	LMM	4/8/20	12627	4/9/20	12:48	SW5035A8260D
4-chlorotoluene	< 0.10	0.10	ug/g	1	LMM	4/8/20	12627	4/9/20	12:48	SW5035A8260D
tert-butylbenzene	< 0.10	0.10	ug/g	1	LMM	4/8/20	12627	4/9/20	12:48	SW5035A8260D
1,2,4-trimethylbenzene	< 0.10	0.10	ug/g	1	LMM	4/8/20	12627	4/9/20	12:48	SW5035A8260D
sec-butylbenzene	< 0.10	0.10	ug/g	1	LMM	4/8/20	12627	4/9/20	12:48	SW5035A8260D
1,3-dichlorobenzene	< 0.10	0.10	ug/g	1	LMM	4/8/20	12627	4/9/20	12:48	SW5035A8260D
4-isopropyltoluene	< 0.10	0.10	ug/g	1	LMM	4/8/20	12627	4/9/20	12:48	SW5035A8260D
1,4-dichlorobenzene	< 0.10	0.10	ug/g	1	LMM	4/8/20	12627	4/9/20	12:48	SW5035A8260D
1,2-dichlorobenzene	< 0.10	0.10	ug/g	1	LMM	4/8/20	12627	4/9/20	12:48	SW5035A8260D
n-butylbenzene	< 0.10	0.10	ug/g	1	LMM	4/8/20	12627	4/9/20	12:48	SW5035A8260D
1,2-dibromo-3-chloropropane (DBCP)	< 0.10	0.10	ug/g	1	LMM	4/8/20	12627	4/9/20	12:48	SW5035A8260D
1,2,4-trichlorobenzene	< 0.10	0.10	ug/g	1	LMM	4/8/20	12627	4/9/20	12:48	SW5035A8260D
hexachlorobutadiene	< 0.10	0.10	ug/g	1	LMM	4/8/20	12627	4/9/20	12:48	SW5035A8260D
naphthalene	< 0.25	0.25	ug/g	1	LMM	4/8/20	12627	4/9/20	12:48	SW5035A8260D
1,2,3-trichlorobenzene	< 0.10	0.10	ug/g	1	LMM	4/8/20	12627	4/9/20	12:48	SW5035A8260D
Surrogate Recovery		**Limits**								
dibromofluoromethane SUR	**98**	78-114	%	1	LMM	4/8/20	12627	4/9/20	12:48	SW5035A8260D
toluene-D8 SUR	**105**	88-110	%	1	LMM	4/8/20	12627	4/9/20	12:48	SW5035A8260D
4-bromofluorobenzene SUR	**110**	86-115	%	1	LMM	4/8/20	12627	4/9/20	12:48	SW5035A8260D
a,a,a-trifluorotoluene SUR	**110**	70-130	%	1	LMM	4/8/20	12627	4/9/20	12:48	SW5035A8260D

Project ID: Cedar Woods 21
Job ID: 52513

Sample#: 52513-002
Sample ID: SB-104 (8-10')
Matrix: Solid Percent Dry: 83.1% Results expressed on a dry weight basis.
Samples prepared in methanol at a ratio of 0.64 mL MeOH/g soil.
Received on ice at 2˚C, in satisfactory condition.
Sampled: 4/7/20 8:55

Parameter	Result	Reporting Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
Unadjusted C5-C8 Aliphatics	< 4.9	4.9	ug/g	1	LMM	4/8/20	12628	4/9/20	15:19	MA VPH
Unadjusted C9-C12 Aliphatics	< 4.9	4.9	ug/g	1	LMM	4/8/20	12628	4/9/20	15:19	MA VPH
methyl t-butyl ether (MTBE)	< 0.097	0.097	ug/g	1	LMM	4/8/20	12628	4/9/20	15:19	MA VPH
benzene	< 0.097	0.097	ug/g	1	LMM	4/8/20	12628	4/9/20	15:19	MA VPH
toluene	< 0.097	0.097	ug/g	1	LMM	4/8/20	12628	4/9/20	15:19	MA VPH
ethylbenzene	< 0.097	0.097	ug/g	1	LMM	4/8/20	12628	4/9/20	15:19	MA VPH
m&p-xylenes	< 0.097	0.097	ug/g	1	LMM	4/8/20	12628	4/9/20	15:19	MA VPH
o-xylene	< 0.097	0.097	ug/g	1	LMM	4/8/20	12628	4/9/20	15:19	MA VPH
naphthalene	< 0.24	0.24	ug/g	1	LMM	4/8/20	12628	4/9/20	15:19	MA VPH
C5-C8 Aliphatics	< 4.9	4.9	ug/g	1	LMM	4/8/20	12628	4/9/20	15:19	MA VPH
C9-C12 Aliphatics	< 4.9	4.9	ug/g	1	LMM	4/8/20	12628	4/9/20	15:19	MA VPH
C9-C10 Aromatics	< 4.9	4.9	ug/g	1	LMM	4/8/20	12628	4/9/20	15:19	MA VPH
Surrogate Recovery		**Limits**								
2,5-dibromotoluene as Aromatic SUR	**106**	70-130	%	1	LMM	4/8/20	12628	4/9/20	15:19	MA VPH
2,5-dibromotoluene as Aliphatic SUR	**107**	70-130	%	1	LMM	4/8/20	12628	4/9/20	15:19	MA VPH
a,a,a-trifluorotoluene SUR	**79**	70-130	%	1	LMM	4/8/20	12628	4/9/20	15:19	MA VPH

Hydrocarbon Range data exclude concentrations of any surrogate(s) and/or internal standards eluting in that range.
C5-C8 Aliphatic Hydrocarbons exclude the concentration of target analytes eluting in that range.
C9-C12 Aliphatic Hydrocarbons exclude concentration of target analytes eluting in that range AND C9-C10 Aromatics.

Project ID: Cedar Woods 21
Job ID: 52513

Sample#: 52513-004
Sample ID: SB-107 (0-3')
Matrix: Solid Percent Dry: 79% Results expressed on a dry weight basis.
Samples prepared in methanol at a ratio of 0.65 mL MeOH/g soil.
Received on ice at 2˚C, in satisfactory condition.
Sampled: 4/7/20 10:00

Parameter	Result	Reporting Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
Unadjusted C5-C8 Aliphatics	**7.6**	5.4	ug/g	1	LMM	4/8/20	12628	4/9/20	15:49	MA VPH
Unadjusted C9-C12 Aliphatics	< 5.4	5.4	ug/g	1	LMM	4/8/20	12628	4/9/20	15:49	MA VPH
methyl t-butyl ether (MTBE)	< 0.11	0.11	ug/g	1	LMM	4/8/20	12628	4/9/20	15:49	MA VPH
benzene	< 0.11	0.11	ug/g	1	LMM	4/8/20	12628	4/9/20	15:49	MA VPH
toluene	< 0.11	0.11	ug/g	1	LMM	4/8/20	12628	4/9/20	15:49	MA VPH
ethylbenzene	< 0.11	0.11	ug/g	1	LMM	4/8/20	12628	4/9/20	15:49	MA VPH
m&p-xylenes	< 0.11	0.11	ug/g	1	LMM	4/8/20	12628	4/9/20	15:49	MA VPH
o-xylene	< 0.11	0.11	ug/g	1	LMM	4/8/20	12628	4/9/20	15:49	MA VPH
naphthalene	< 0.27	0.27	ug/g	1	LMM	4/8/20	12628	4/9/20	15:49	MA VPH
C5-C8 Aliphatics	**7.6**	5.4	ug/g	1	LMM	4/8/20	12628	4/9/20	15:49	MA VPH
C9-C12 Aliphatics	< 5.4	5.4	ug/g	1	LMM	4/8/20	12628	4/9/20	15:49	MA VPH
C9-C10 Aromatics	< 5.4	5.4	ug/g	1	LMM	4/8/20	12628	4/9/20	15:49	MA VPH
Surrogate Recovery		**Limits**								
2,5-dibromotoluene as Aromatic SUR	**106**	70-130	%	1	LMM	4/8/20	12628	4/9/20	15:49	MA VPH
2,5-dibromotoluene as Aliphatic SUR	**106**	70-130	%	1	LMM	4/8/20	12628	4/9/20	15:49	MA VPH
a,a,a-trifluorotoluene SUR	**32** *	70-130	%	1	LMM	4/8/20	12628	4/9/20	15:49	MA VPH

**** This surrogate showed recovery outside the acceptance limits.***

Hydrocarbon Range data exclude concentrations of any surrogate(s) and/or internal standards eluting in that range.

C5-C8 Aliphatic Hydrocarbons exclude the concentration of target analytes eluting in that range.

C9-C12 Aliphatic Hydrocarbons exclude concentration of target analytes eluting in that range AND C9-C10 Aromatics.

Project ID: Cedar Woods 21
Job ID: 52513

Sample#: 52513-005
Sample ID: SB-107 (10-11')
Matrix: Solid Percent Dry: 84.5% Results expressed on a dry weight basis.
Samples prepared in methanol at a ratio of 0.64 mL MeOH/g soil.
Received on ice at 2˚C, in satisfactory condition.
Sampled: 4/7/20 10:20

Parameter	Result	Reporting Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
Unadjusted C5-C8 Aliphatics	**26**	4.7	ug/g	1	LMM	4/8/20	12628	4/9/20	16:19	MA VPH
Unadjusted C9-C12 Aliphatics	**62**	4.7	ug/g	1	LMM	4/8/20	12628	4/9/20	16:19	MA VPH
methyl t-butyl ether (MTBE)	< 0.094	0.094	ug/g	1	LMM	4/8/20	12628	4/9/20	16:19	MA VPH
benzene	< 0.094	0.094	ug/g	1	LMM	4/8/20	12628	4/9/20	16:19	MA VPH
toluene	< 0.094	0.094	ug/g	1	LMM	4/8/20	12628	4/9/20	16:19	MA VPH
ethylbenzene	**0.48**	0.094	ug/g	1	LMM	4/8/20	12628	4/9/20	16:19	MA VPH
m&p-xylenes	**1.6**	0.094	ug/g	1	LMM	4/8/20	12628	4/9/20	16:19	MA VPH
o-xylene	< 0.094	0.094	ug/g	1	LMM	4/8/20	12628	4/9/20	16:19	MA VPH
naphthalene	**1.3**	0.23	ug/g	1	LMM	4/8/20	12628	4/9/20	16:19	MA VPH
C5-C8 Aliphatics	**26**	4.7	ug/g	1	LMM	4/8/20	12628	4/9/20	16:19	MA VPH
C9-C12 Aliphatics	**22**	4.7	ug/g	1	LMM	4/8/20	12628	4/9/20	16:19	MA VPH
C9-C10 Aromatics	**39**	4.7	ug/g	1	LMM	4/8/20	12628	4/9/20	16:19	MA VPH
Surrogate Recovery		**Limits**								
2,5-dibromotoluene as Aromatic SUR	**121**	70-130	%	1	LMM	4/8/20	12628	4/9/20	16:19	MA VPH
2,5-dibromotoluene as Aliphatic SUR	**136** *	70-130	%	1	LMM	4/8/20	12628	4/9/20	16:19	MA VPH
a,a,a-trifluorotoluene SUR	**115**	70-130	%	1	LMM	4/8/20	12628	4/9/20	16:19	MA VPH

**** The surrogate showed recovery outside the acceptance limits as a result of hydrocarbons present in the sample.***

Hydrocarbon Range data exclude concentrations of any surrogate(s) and/or internal standards eluting in that range.

C5-C8 Aliphatic Hydrocarbons exclude the concentration of target analytes eluting in that range.

C9-C12 Aliphatic Hydrocarbons exclude concentration of target analytes eluting in that range AND C9-C10 Aromatics.

Project ID: Cedar Woods 21
Job ID: 52513

Sample#: 52513-008
Sample ID: SB-108 (6-9')
Matrix: Solid Percent Dry: 80.4% Results expressed on a dry weight basis.
Samples prepared in methanol at a ratio of 0.67 mL MeOH/g soil.
Received on ice at 2˚C, in satisfactory condition.
Sampled: 4/7/20 11:00

Parameter	Result	Reporting Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
Unadjusted C5-C8 Aliphatics	**31**	5.4	ug/g	1	LMM	4/8/20	12628	4/9/20	16:49	MA VPH
Unadjusted C9-C12 Aliphatics	**95**	5.4	ug/g	1	LMM	4/8/20	12628	4/9/20	16:49	MA VPH
methyl t-butyl ether (MTBE)	< 0.11	0.11	ug/g	1	LMM	4/8/20	12628	4/9/20	16:49	MA VPH
benzene	**0.30**	0.11	ug/g	1	LMM	4/8/20	12628	4/9/20	16:49	MA VPH
toluene	**0.42**	0.11	ug/g	1	LMM	4/8/20	12628	4/9/20	16:49	MA VPH
ethylbenzene	**0.49**	0.11	ug/g	1	LMM	4/8/20	12628	4/9/20	16:49	MA VPH
m&p-xylenes	**2.7**	0.11	ug/g	1	LMM	4/8/20	12628	4/9/20	16:49	MA VPH
o-xylene	**0.45**	0.11	ug/g	1	LMM	4/8/20	12628	4/9/20	16:49	MA VPH
naphthalene	**1.9**	0.27	ug/g	1	LMM	4/8/20	12628	4/9/20	16:49	MA VPH
C5-C8 Aliphatics	**30**	5.4	ug/g	1	LMM	4/8/20	12628	4/9/20	16:49	MA VPH
C9-C12 Aliphatics	**24**	5.4	ug/g	1	LMM	4/8/20	12628	4/9/20	16:49	MA VPH
C9-C10 Aromatics	**67**	5.4	ug/g	1	LMM	4/8/20	12628	4/9/20	16:49	MA VPH
Surrogate Recovery		**Limits**								
2,5-dibromotoluene as Aromatic SUR	**98**	70-130	%	1	LMM	4/8/20	12628	4/9/20	16:49	MA VPH
2,5-dibromotoluene as Aliphatic SUR	**98**	70-130	%	1	LMM	4/8/20	12628	4/9/20	16:49	MA VPH
a,a,a-trifluorotoluene SUR	**96**	70-130	%	1	LMM	4/8/20	12628	4/9/20	16:49	MA VPH

Hydrocarbon Range data exclude concentrations of any surrogate(s) and/or internal standards eluting in that range.
C5-C8 Aliphatic Hydrocarbons exclude the concentration of target analytes eluting in that range.
C9-C12 Aliphatic Hydrocarbons exclude concentration of target analytes eluting in that range AND C9-C10 Aromatics.

Project ID: Cedar Woods 21
Job ID: 52513

Sample#: 52513-011
Sample ID: SB-109 (5-8')
Matrix: Solid Percent Dry: 23.7% Results expressed on a dry weight basis.
Samples prepared in methanol at a ratio of 0.63 mL MeOH/g soil.
Received on ice at 2˚C, in satisfactory condition.
Sampled: 4/7/20 11:45

Parameter	Result	Reporting Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
Unadjusted C5-C8 Aliphatics	< 29	29	ug/g	1	LMM	4/8/20	12628	4/9/20	17:19	MA VPH
Unadjusted C9-C12 Aliphatics	< 29	29	ug/g	1	LMM	4/8/20	12628	4/9/20	17:19	MA VPH
methyl t-butyl ether (MTBE)	< 0.59	0.59	ug/g	1	LMM	4/8/20	12628	4/9/20	17:19	MA VPH
benzene	< 0.59	0.59	ug/g	1	LMM	4/8/20	12628	4/9/20	17:19	MA VPH
toluene	< 0.59	0.59	ug/g	1	LMM	4/8/20	12628	4/9/20	17:19	MA VPH
ethylbenzene	< 0.59	0.59	ug/g	1	LMM	4/8/20	12628	4/9/20	17:19	MA VPH
m&p-xylenes	< 0.59	0.59	ug/g	1	LMM	4/8/20	12628	4/9/20	17:19	MA VPH
o-xylene	< 0.59	0.59	ug/g	1	LMM	4/8/20	12628	4/9/20	17:19	MA VPH
naphthalene	< 1.5	1.5	ug/g	1	LMM	4/8/20	12628	4/9/20	17:19	MA VPH
C5-C8 Aliphatics	< 29	29	ug/g	1	LMM	4/8/20	12628	4/9/20	17:19	MA VPH
C9-C12 Aliphatics	< 29	29	ug/g	1	LMM	4/8/20	12628	4/9/20	17:19	MA VPH
C9-C10 Aromatics	< 29	29	ug/g	1	LMM	4/8/20	12628	4/9/20	17:19	MA VPH
Surrogate Recovery		**Limits**								
2,5-dibromotoluene as Aromatic SUR	**100**	70-130	%	1	LMM	4/8/20	12628	4/9/20	17:19	MA VPH
2,5-dibromotoluene as Aliphatic SUR	**98**	70-130	%	1	LMM	4/8/20	12628	4/9/20	17:19	MA VPH
a,a,a-trifluorotoluene SUR	**75**	70-130	%	1	LMM	4/8/20	12628	4/9/20	17:19	MA VPH

Hydrocarbon Range data exclude concentrations of any surrogate(s) and/or internal standards eluting in that range.
C5-C8 Aliphatic Hydrocarbons exclude the concentration of target analytes eluting in that range.
C9-C12 Aliphatic Hydrocarbons exclude concentration of target analytes eluting in that range AND C9-C10 Aromatics.

Project ID: Cedar Woods 21
Job ID: 52513

Sample#: 52513-014
Sample ID: SB-110 (5-8')
Matrix: Solid Percent Dry: 17.7% Results expressed on a dry weight basis.
Samples prepared in methanol at a ratio of 0.65 mL MeOH/g soil.
Received on ice at 2˚C, in satisfactory condition.
Sampled: 4/7/20 12:55

Parameter	Result	Reporting Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
Unadjusted C5-C8 Aliphatics	< 42	42	ug/g	1	LMM	4/8/20	12628	4/9/20	17:49	MA VPH
Unadjusted C9-C12 Aliphatics	< 42	42	ug/g	1	LMM	4/8/20	12628	4/9/20	17:49	MA VPH
methyl t-butyl ether (MTBE)	< 0.83	0.83	ug/g	1	LMM	4/8/20	12628	4/9/20	17:49	MA VPH
benzene	< 0.83	0.83	ug/g	1	LMM	4/8/20	12628	4/9/20	17:49	MA VPH
toluene	< 0.83	0.83	ug/g	1	LMM	4/8/20	12628	4/9/20	17:49	MA VPH
ethylbenzene	< 0.83	0.83	ug/g	1	LMM	4/8/20	12628	4/9/20	17:49	MA VPH
m&p-xylenes	< 0.83	0.83	ug/g	1	LMM	4/8/20	12628	4/9/20	17:49	MA VPH
o-xylene	< 0.83	0.83	ug/g	1	LMM	4/8/20	12628	4/9/20	17:49	MA VPH
naphthalene	< 2.1	2.1	ug/g	1	LMM	4/8/20	12628	4/9/20	17:49	MA VPH
C5-C8 Aliphatics	< 42	42	ug/g	1	LMM	4/8/20	12628	4/9/20	17:49	MA VPH
C9-C12 Aliphatics	< 42	42	ug/g	1	LMM	4/8/20	12628	4/9/20	17:49	MA VPH
C9-C10 Aromatics	< 42	42	ug/g	1	LMM	4/8/20	12628	4/9/20	17:49	MA VPH
Surrogate Recovery		**Limits**								
2,5-dibromotoluene as Aromatic SUR	**102**	70-130	%	1	LMM	4/8/20	12628	4/9/20	17:49	MA VPH
2,5-dibromotoluene as Aliphatic SUR	**103**	70-130	%	1	LMM	4/8/20	12628	4/9/20	17:49	MA VPH
a,a,a-trifluorotoluene SUR	**158** *	70-130	%	1	LMM	4/8/20	12628	4/9/20	17:49	MA VPH

**** This surrogate showed recovery outside the acceptance limits. This is likely a result of high moisture content in the sample.***

Hydrocarbon Range data exclude concentrations of any surrogate(s) and/or internal standards eluting in that range.

C5-C8 Aliphatic Hydrocarbons exclude the concentration of target analytes eluting in that range.

C9-C12 Aliphatic Hydrocarbons exclude concentration of target analytes eluting in that range AND C9-C10 Aromatics.

Project ID: Cedar Woods 21
Job ID: 52513

Sample#: 52513-017
Sample ID: SB-112 (5-8')
Matrix: Solid Percent Dry: 52.4% Results expressed on a dry weight basis.
Samples prepared in methanol at a ratio of 0.61 mL MeOH/g soil.
Received on ice at 2˚C, in satisfactory condition.
Sampled: 4/7/20 13:25

Parameter	Result	Reporting Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
Unadjusted C5-C8 Aliphatics	< 10	10	ug/g	1	LMM	4/8/20	12628	4/9/20	18:19	MA VPH
Unadjusted C9-C12 Aliphatics	< 10	10	ug/g	1	LMM	4/8/20	12628	4/9/20	18:19	MA VPH
methyl t-butyl ether (MTBE)	< 0.21	0.21	ug/g	1	LMM	4/8/20	12628	4/9/20	18:19	MA VPH
benzene	< 0.21	0.21	ug/g	1	LMM	4/8/20	12628	4/9/20	18:19	MA VPH
toluene	< 0.21	0.21	ug/g	1	LMM	4/8/20	12628	4/9/20	18:19	MA VPH
ethylbenzene	< 0.21	0.21	ug/g	1	LMM	4/8/20	12628	4/9/20	18:19	MA VPH
m&p-xylenes	< 0.21	0.21	ug/g	1	LMM	4/8/20	12628	4/9/20	18:19	MA VPH
o-xylene	< 0.21	0.21	ug/g	1	LMM	4/8/20	12628	4/9/20	18:19	MA VPH
naphthalene	< 0.52	0.52	ug/g	1	LMM	4/8/20	12628	4/9/20	18:19	MA VPH
C5-C8 Aliphatics	< 10	10	ug/g	1	LMM	4/8/20	12628	4/9/20	18:19	MA VPH
C9-C12 Aliphatics	< 10	10	ug/g	1	LMM	4/8/20	12628	4/9/20	18:19	MA VPH
C9-C10 Aromatics	< 10	10	ug/g	1	LMM	4/8/20	12628	4/9/20	18:19	MA VPH
Surrogate Recovery		**Limits**								
2,5-dibromotoluene as Aromatic SUR	**105**	70-130	%	1	LMM	4/8/20	12628	4/9/20	18:19	MA VPH
2,5-dibromotoluene as Aliphatic SUR	**106**	70-130	%	1	LMM	4/8/20	12628	4/9/20	18:19	MA VPH
a,a,a-trifluorotoluene SUR	**75**	70-130	%	1	LMM	4/8/20	12628	4/9/20	18:19	MA VPH

Hydrocarbon Range data exclude concentrations of any surrogate(s) and/or internal standards eluting in that range.
C5-C8 Aliphatic Hydrocarbons exclude the concentration of target analytes eluting in that range.
C9-C12 Aliphatic Hydrocarbons exclude concentration of target analytes eluting in that range AND C9-C10 Aromatics.

Project ID: Cedar Woods 21
Job ID: 52513

Sample#: 52513-018
Sample ID: DUP-1
Matrix: Solid Percent Dry: 23.7% Results expressed on a dry weight basis.
Samples prepared in methanol at a ratio of 0.63 mL MeOH/g soil.
Received on ice at 2˚C, in satisfactory condition.
Sampled: 4/7/20 0:00

Parameter	Result	Reporting Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
Unadjusted C5-C8 Aliphatics	< 29	29	ug/g	1	LMM	4/8/20	12628	4/9/20	18:49	MA VPH
Unadjusted C9-C12 Aliphatics	< 29	29	ug/g	1	LMM	4/8/20	12628	4/9/20	18:49	MA VPH
methyl t-butyl ether (MTBE)	< 0.59	0.59	ug/g	1	LMM	4/8/20	12628	4/9/20	18:49	MA VPH
benzene	< 0.59	0.59	ug/g	1	LMM	4/8/20	12628	4/9/20	18:49	MA VPH
toluene	< 0.59	0.59	ug/g	1	LMM	4/8/20	12628	4/9/20	18:49	MA VPH
ethylbenzene	< 0.59	0.59	ug/g	1	LMM	4/8/20	12628	4/9/20	18:49	MA VPH
m&p-xylenes	< 0.59	0.59	ug/g	1	LMM	4/8/20	12628	4/9/20	18:49	MA VPH
o-xylene	< 0.59	0.59	ug/g	1	LMM	4/8/20	12628	4/9/20	18:49	MA VPH
naphthalene	< 1.5	1.5	ug/g	1	LMM	4/8/20	12628	4/9/20	18:49	MA VPH
C5-C8 Aliphatics	< 29	29	ug/g	1	LMM	4/8/20	12628	4/9/20	18:49	MA VPH
C9-C12 Aliphatics	< 29	29	ug/g	1	LMM	4/8/20	12628	4/9/20	18:49	MA VPH
C9-C10 Aromatics	< 29	29	ug/g	1	LMM	4/8/20	12628	4/9/20	18:49	MA VPH
Surrogate Recovery		**Limits**								
2,5-dibromotoluene as Aromatic SUR	**107**	70-130	%	1	LMM	4/8/20	12628	4/9/20	18:49	MA VPH
2,5-dibromotoluene as Aliphatic SUR	**105**	70-130	%	1	LMM	4/8/20	12628	4/9/20	18:49	MA VPH
a,a,a-trifluorotoluene SUR	**71**	70-130	%	1	LMM	4/8/20	12628	4/9/20	18:49	MA VPH

Hydrocarbon Range data exclude concentrations of any surrogate(s) and/or internal standards eluting in that range.
C5-C8 Aliphatic Hydrocarbons exclude the concentration of target analytes eluting in that range.
C9-C12 Aliphatic Hydrocarbons exclude concentration of target analytes eluting in that range AND C9-C10 Aromatics.

Project ID: Cedar Woods 21
Job ID: 52513
Sample#: 52513-001
Sample ID: SB-104 (0-3')
Matrix: Solid Percent Dry: 89.3% Results expressed on a dry weight basis.
Sampled: 4/7/20 8:45

Parameter	Result	Reporting Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
naphthalene	< 0.20	0.20	ug/g	1	CL	4/8/20	12630	4/9/20	18:13	MA EPH
2-methylnaphthalene	< 0.20	0.20	ug/g	1	CL	4/8/20	12630	4/9/20	18:13	MA EPH
phenanthrene	**0.39**	0.20	ug/g	1	CL	4/8/20	12630	4/9/20	18:13	MA EPH
acenaphthene	< 0.20	0.20	ug/g	1	CL	4/8/20	12630	4/9/20	18:13	MA EPH
acenaphthylene	< 0.20	0.20	ug/g	1	CL	4/8/20	12630	4/9/20	18:13	MA EPH
fluorene	< 0.20	0.20	ug/g	1	CL	4/8/20	12630	4/9/20	18:13	MA EPH
anthracene	< 0.20	0.20	ug/g	1	CL	4/8/20	12630	4/9/20	18:13	MA EPH
fluoranthene	**0.80**	0.20	ug/g	1	CL	4/8/20	12630	4/9/20	18:13	MA EPH
pyrene	**0.85**	0.20	ug/g	1	CL	4/8/20	12630	4/9/20	18:13	MA EPH
benzo(a)anthracene	**0.40**	0.20	ug/g	1	CL	4/8/20	12630	4/9/20	18:13	MA EPH
chrysene	**0.56**	0.20	ug/g	1	CL	4/8/20	12630	4/9/20	18:13	MA EPH
benzo(b)fluoranthene	**0.46**	0.20	ug/g	1	CL	4/8/20	12630	4/9/20	18:13	MA EPH
benzo(k)fluoranthene	**0.44**	0.20	ug/g	1	CL	4/8/20	12630	4/9/20	18:13	MA EPH
benzo(a)pyrene	**0.44**	0.20	ug/g	1	CL	4/8/20	12630	4/9/20	18:13	MA EPH
indeno(1,2,3-cd)pyrene	**0.30**	0.20	ug/g	1	CL	4/8/20	12630	4/9/20	18:13	MA EPH
dibenzo(a,h)anthracene	< 0.20	0.20	ug/g	1	CL	4/8/20	12630	4/9/20	18:13	MA EPH
benzo(g,h,i)perylene	**0.35**	0.20	ug/g	1	CL	4/8/20	12630	4/9/20	18:13	MA EPH
Unadjusted C11-C22 Aromatics	**31**	20	ug/g	1	DBV	4/8/20	12630	4/9/20	12:48	MA EPH
C9-C18 Aliphatics	< 20	20	ug/g	1	DBV	4/8/20	12630	4/9/20	12:48	MA EPH
C19-C36 Aliphatics	**34**	20	ug/g	1	DBV	4/8/20	12630	4/9/20	12:48	MA EPH
C11-C22 Aromatics	**25**	20	ug/g	1	DBV	4/8/20	12630	4/9/20	12:48	MA EPH
Surrogate Recovery		**Limits**								
1-chloro-octadecane SUR	**55**	40-140	%	1	DBV	4/8/20	12630	4/9/20	12:48	MA EPH
o-terphenyl SUR	**61**	40-140	%	1	DBV	4/8/20	12630	4/9/20	12:48	MA EPH
2-fluorobiphenyl SUR	**65**	40-140	%	1	DBV	4/8/20	12630	4/9/20	12:48	MA EPH
2-bromonaphthalene SUR	**63**	40-140	%	1	DBV	4/8/20	12630	4/9/20	12:48	MA EPH

Project ID: Cedar Woods 21
Job ID: 52513
Sample#: 52513-002
Sample ID: SB-104 (8-10')
Matrix: Solid Percent Dry: 83.1% Results expressed on a dry weight basis.
Sampled: 4/7/20 8:55

Parameter	Result	Reporting Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
naphthalene	< 0.22	0.22	ug/g	1	CL	4/8/20	12630	4/9/20	19:44	MA EPH
2-methylnaphthalene	< 0.22	0.22	ug/g	1	CL	4/8/20	12630	4/9/20	19:44	MA EPH
phenanthrene	< 0.22	0.22	ug/g	1	CL	4/8/20	12630	4/9/20	19:44	MA EPH
acenaphthene	< 0.22	0.22	ug/g	1	CL	4/8/20	12630	4/9/20	19:44	MA EPH
acenaphthylene	< 0.22	0.22	ug/g	1	CL	4/8/20	12630	4/9/20	19:44	MA EPH
fluorene	< 0.22	0.22	ug/g	1	CL	4/8/20	12630	4/9/20	19:44	MA EPH
anthracene	< 0.22	0.22	ug/g	1	CL	4/8/20	12630	4/9/20	19:44	MA EPH
fluoranthene	< 0.22	0.22	ug/g	1	CL	4/8/20	12630	4/9/20	19:44	MA EPH
pyrene	< 0.22	0.22	ug/g	1	CL	4/8/20	12630	4/9/20	19:44	MA EPH
benzo(a)anthracene	< 0.22	0.22	ug/g	1	CL	4/8/20	12630	4/9/20	19:44	MA EPH
chrysene	< 0.22	0.22	ug/g	1	CL	4/8/20	12630	4/9/20	19:44	MA EPH
benzo(b)fluoranthene	< 0.22	0.22	ug/g	1	CL	4/8/20	12630	4/9/20	19:44	MA EPH
benzo(k)fluoranthene	< 0.22	0.22	ug/g	1	CL	4/8/20	12630	4/9/20	19:44	MA EPH
benzo(a)pyrene	< 0.22	0.22	ug/g	1	CL	4/8/20	12630	4/9/20	19:44	MA EPH
indeno(1,2,3-cd)pyrene	< 0.22	0.22	ug/g	1	CL	4/8/20	12630	4/9/20	19:44	MA EPH
dibenzo(a,h)anthracene	< 0.22	0.22	ug/g	1	CL	4/8/20	12630	4/9/20	19:44	MA EPH
benzo(g,h,i)perylene	< 0.22	0.22	ug/g	1	CL	4/8/20	12630	4/9/20	19:44	MA EPH
Unadjusted C11-C22 Aromatics	< 22	22	ug/g	1	DBV	4/8/20	12630	4/9/20	21:55	MA EPH
C9-C18 Aliphatics	< 22	22	ug/g	1	DBV	4/8/20	12630	4/9/20	21:55	MA EPH
C19-C36 Aliphatics	**100**	22	ug/g	1	DBV	4/8/20	12630	4/9/20	21:55	MA EPH
C11-C22 Aromatics	< 22	22	ug/g	1	DBV	4/8/20	12630	4/9/20	21:55	MA EPH
Surrogate Recovery		**Limits**								
1-chloro-octadecane SUR	**65**	40-140	%	1	DBV	4/8/20	12630	4/9/20	21:55	MA EPH
o-terphenyl SUR	**71**	40-140	%	1	DBV	4/8/20	12630	4/9/20	21:55	MA EPH
2-fluorobiphenyl SUR	**70**	40-140	%	1	DBV	4/8/20	12630	4/9/20	21:55	MA EPH
2-bromonaphthalene SUR	**69**	40-140	%	1	DBV	4/8/20	12630	4/9/20	21:55	MA EPH

Project ID: Cedar Woods 21
Job ID: 52513
Sample#: 52513-004
Sample ID: SB-107 (0-3')
Matrix: Solid Percent Dry: 79% Results expressed on a dry weight basis.
Sampled: 4/7/20 10:00

Parameter	Result	Reporting Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
naphthalene	< 0.23	0.23	ug/g	1	CL	4/8/20	12630	4/9/20	14:41	MA EPH
2-methylnaphthalene	< 0.23	0.23	ug/g	1	CL	4/8/20	12630	4/9/20	14:41	MA EPH
phenanthrene	< 0.23	0.23	ug/g	1	CL	4/8/20	12630	4/9/20	14:41	MA EPH
acenaphthene	< 0.23	0.23	ug/g	1	CL	4/8/20	12630	4/9/20	14:41	MA EPH
acenaphthylene	< 0.23	0.23	ug/g	1	CL	4/8/20	12630	4/9/20	14:41	MA EPH
fluorene	< 0.23	0.23	ug/g	1	CL	4/8/20	12630	4/9/20	14:41	MA EPH
anthracene	< 0.23	0.23	ug/g	1	CL	4/8/20	12630	4/9/20	14:41	MA EPH
fluoranthene	**0.25**	0.23	ug/g	1	CL	4/8/20	12630	4/9/20	14:41	MA EPH
pyrene	< 0.23	0.23	ug/g	1	CL	4/8/20	12630	4/9/20	14:41	MA EPH
benzo(a)anthracene	< 0.23	0.23	ug/g	1	CL	4/8/20	12630	4/9/20	14:41	MA EPH
chrysene	< 0.23	0.23	ug/g	1	CL	4/8/20	12630	4/9/20	14:41	MA EPH
benzo(b)fluoranthene	< 0.23	0.23	ug/g	1	CL	4/8/20	12630	4/9/20	14:41	MA EPH
benzo(k)fluoranthene	< 0.23	0.23	ug/g	1	CL	4/8/20	12630	4/9/20	14:41	MA EPH
benzo(a)pyrene	< 0.23	0.23	ug/g	1	CL	4/8/20	12630	4/9/20	14:41	MA EPH
indeno(1,2,3-cd)pyrene	< 0.23	0.23	ug/g	1	CL	4/8/20	12630	4/9/20	14:41	MA EPH
dibenzo(a,h)anthracene	< 0.23	0.23	ug/g	1	CL	4/8/20	12630	4/9/20	14:41	MA EPH
benzo(g,h,i)perylene	< 0.23	0.23	ug/g	1	CL	4/8/20	12630	4/9/20	14:41	MA EPH
Unadjusted C11-C22 Aromatics	< 23	23	ug/g	1	DBV	4/8/20	12630	4/9/20	13:22	MA EPH
C9-C18 Aliphatics	< 23	23	ug/g	1	DBV	4/8/20	12630	4/9/20	13:22	MA EPH
C19-C36 Aliphatics	**36**	23	ug/g	1	DBV	4/8/20	12630	4/9/20	13:22	MA EPH
C11-C22 Aromatics	< 23	23	ug/g	1	DBV	4/8/20	12630	4/9/20	13:22	MA EPH
Surrogate Recovery		**Limits**								
1-chloro-octadecane SUR	**55**	40-140	%	1	DBV	4/8/20	12630	4/9/20	13:22	MA EPH
o-terphenyl SUR	**54**	40-140	%	1	DBV	4/8/20	12630	4/9/20	13:22	MA EPH
2-fluorobiphenyl SUR	**63**	40-140	%	1	DBV	4/8/20	12630	4/9/20	13:22	MA EPH
2-bromonaphthalene SUR	**59**	40-140	%	1	DBV	4/8/20	12630	4/9/20	13:22	MA EPH

Project ID: Cedar Woods 21
Job ID: 52513
Sample#: 52513-005
Sample ID: SB-107 (10-11')
Matrix: Solid Percent Dry: 84.5% Results expressed on a dry weight basis.
Sampled: 4/7/20 10:20

Parameter	Result	Reporting Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
naphthalene	< 0.23	0.23	ug/g	1	CL	4/8/20	12630	4/9/20	18:44	MA EPH
2-methylnaphthalene	< 0.23	0.23	ug/g	1	CL	4/8/20	12630	4/9/20	18:44	MA EPH
phenanthrene	< 0.23	0.23	ug/g	1	CL	4/8/20	12630	4/9/20	18:44	MA EPH
acenaphthene	< 0.23	0.23	ug/g	1	CL	4/8/20	12630	4/9/20	18:44	MA EPH
acenaphthylene	< 0.23	0.23	ug/g	1	CL	4/8/20	12630	4/9/20	18:44	MA EPH
fluorene	< 0.23	0.23	ug/g	1	CL	4/8/20	12630	4/9/20	18:44	MA EPH
anthracene	< 0.23	0.23	ug/g	1	CL	4/8/20	12630	4/9/20	18:44	MA EPH
fluoranthene	< 0.23	0.23	ug/g	1	CL	4/8/20	12630	4/9/20	18:44	MA EPH
pyrene	< 0.23	0.23	ug/g	1	CL	4/8/20	12630	4/9/20	18:44	MA EPH
benzo(a)anthracene	< 0.23	0.23	ug/g	1	CL	4/8/20	12630	4/9/20	18:44	MA EPH
chrysene	< 0.23	0.23	ug/g	1	CL	4/8/20	12630	4/9/20	18:44	MA EPH
benzo(b)fluoranthene	< 0.23	0.23	ug/g	1	CL	4/8/20	12630	4/9/20	18:44	MA EPH
benzo(k)fluoranthene	< 0.23	0.23	ug/g	1	CL	4/8/20	12630	4/9/20	18:44	MA EPH
benzo(a)pyrene	< 0.23	0.23	ug/g	1	CL	4/8/20	12630	4/9/20	18:44	MA EPH
indeno(1,2,3-cd)pyrene	< 0.23	0.23	ug/g	1	CL	4/8/20	12630	4/9/20	18:44	MA EPH
dibenzo(a,h)anthracene	< 0.23	0.23	ug/g	1	CL	4/8/20	12630	4/9/20	18:44	MA EPH
benzo(g,h,i)perylene	< 0.23	0.23	ug/g	1	CL	4/8/20	12630	4/9/20	18:44	MA EPH
Unadjusted C11-C22 Aromatics	**77**	23	ug/g	1	DBV	4/8/20	12630	4/9/20	21:21	MA EPH
C9-C18 Aliphatics	**34**	23	ug/g	1	DBV	4/8/20	12630	4/14/20	12:58	MA EPH
C19-C36 Aliphatics	**410**	23	ug/g	1	DBV	4/8/20	12630	4/14/20	12:58	MA EPH
C11-C22 Aromatics	**76**	23	ug/g	1	DBV	4/8/20	12630	4/9/20	21:21	MA EPH
Surrogate Recovery		**Limits**								
1-chloro-octadecane SUR	**60**	40-140	%	1	DBV	4/8/20	12630	4/14/20	12:58	MA EPH
o-terphenyl SUR	**63**	40-140	%	1	DBV	4/8/20	12630	4/9/20	21:21	MA EPH
2-fluorobiphenyl SUR	**65**	40-140	%	1	DBV	4/8/20	12630	4/9/20	21:21	MA EPH
2-bromonaphthalene SUR	**64**	40-140	%	1	DBV	4/8/20	12630	4/9/20	21:21	MA EPH

Project ID: Cedar Woods 21
Job ID: 52513
Sample#: 52513-007
Sample ID: SB-108 (0-3')
Matrix: Solid Percent Dry: 73.6% Results expressed on a dry weight basis.
Sampled: 4/7/20 10:50

Parameter	Result	Reporting Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
naphthalene	< 0.26	0.26	ug/g	1	CL	4/8/20	12630	4/9/20	15:11	MA EPH
2-methylnaphthalene	< 0.26	0.26	ug/g	1	CL	4/8/20	12630	4/9/20	15:11	MA EPH
phenanthrene	< 0.26	0.26	ug/g	1	CL	4/8/20	12630	4/9/20	15:11	MA EPH
acenaphthene	< 0.26	0.26	ug/g	1	CL	4/8/20	12630	4/9/20	15:11	MA EPH
acenaphthylene	< 0.26	0.26	ug/g	1	CL	4/8/20	12630	4/9/20	15:11	MA EPH
fluorene	< 0.26	0.26	ug/g	1	CL	4/8/20	12630	4/9/20	15:11	MA EPH
anthracene	< 0.26	0.26	ug/g	1	CL	4/8/20	12630	4/9/20	15:11	MA EPH
fluoranthene	< 0.26	0.26	ug/g	1	CL	4/8/20	12630	4/9/20	15:11	MA EPH
pyrene	< 0.26	0.26	ug/g	1	CL	4/8/20	12630	4/9/20	15:11	MA EPH
benzo(a)anthracene	< 0.26	0.26	ug/g	1	CL	4/8/20	12630	4/9/20	15:11	MA EPH
chrysene	< 0.26	0.26	ug/g	1	CL	4/8/20	12630	4/9/20	15:11	MA EPH
benzo(b)fluoranthene	< 0.26	0.26	ug/g	1	CL	4/8/20	12630	4/9/20	15:11	MA EPH
benzo(k)fluoranthene	< 0.26	0.26	ug/g	1	CL	4/8/20	12630	4/9/20	15:11	MA EPH
benzo(a)pyrene	< 0.26	0.26	ug/g	1	CL	4/8/20	12630	4/9/20	15:11	MA EPH
indeno(1,2,3-cd)pyrene	< 0.26	0.26	ug/g	1	CL	4/8/20	12630	4/9/20	15:11	MA EPH
dibenzo(a,h)anthracene	< 0.26	0.26	ug/g	1	CL	4/8/20	12630	4/9/20	15:11	MA EPH
benzo(g,h,i)perylene	< 0.26	0.26	ug/g	1	CL	4/8/20	12630	4/9/20	15:11	MA EPH
Unadjusted C11-C22 Aromatics	< 26	26	ug/g	1	DBV	4/8/20	12630	4/9/20	13:56	MA EPH
C9-C18 Aliphatics	< 26	26	ug/g	1	DBV	4/8/20	12630	4/9/20	13:56	MA EPH
C19-C36 Aliphatics	**39**	26	ug/g	1	DBV	4/8/20	12630	4/9/20	13:56	MA EPH
C11-C22 Aromatics	< 26	26	ug/g	1	DBV	4/8/20	12630	4/9/20	13:56	MA EPH
Surrogate Recovery		**Limits**								
1-chloro-octadecane SUR	**60**	40-140	%	1	DBV	4/8/20	12630	4/9/20	13:56	MA EPH
o-terphenyl SUR	**57**	40-140	%	1	DBV	4/8/20	12630	4/9/20	13:56	MA EPH
2-fluorobiphenyl SUR	**60**	40-140	%	1	DBV	4/8/20	12630	4/9/20	13:56	MA EPH
2-bromonaphthalene SUR	**58**	40-140	%	1	DBV	4/8/20	12630	4/9/20	13:56	MA EPH

Project ID: Cedar Woods 21
Job ID: 52513
Sample#: 52513-008
Sample ID: SB-108 (6-9')
Matrix: Solid Percent Dry: 80.4% Results expressed on a dry weight basis.
Sampled: 4/7/20 11:00

Parameter	Result	Reporting Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
naphthalene	**0.50**	0.24	ug/g	1	CL	4/8/20	12630	4/9/20	20:15	MA EPH
2-methylnaphthalene	**0.57**	0.24	ug/g	1	CL	4/8/20	12630	4/9/20	20:15	MA EPH
phenanthrene	**2.1**	0.24	ug/g	1	CL	4/8/20	12630	4/9/20	20:15	MA EPH
acenaphthene	< 0.24	0.24	ug/g	1	CL	4/8/20	12630	4/9/20	20:15	MA EPH
acenaphthylene	< 0.24	0.24	ug/g	1	CL	4/8/20	12630	4/9/20	20:15	MA EPH
fluorene	**0.37**	0.24	ug/g	1	CL	4/8/20	12630	4/9/20	20:15	MA EPH
anthracene	**0.46**	0.24	ug/g	1	CL	4/8/20	12630	4/9/20	20:15	MA EPH
fluoranthene	**1.9**	0.24	ug/g	1	CL	4/8/20	12630	4/9/20	20:15	MA EPH
pyrene	**2.1**	0.24	ug/g	1	CL	4/8/20	12630	4/9/20	20:15	MA EPH
benzo(a)anthracene	**0.79**	0.24	ug/g	1	CL	4/8/20	12630	4/9/20	20:15	MA EPH
chrysene	**0.87**	0.24	ug/g	1	CL	4/8/20	12630	4/9/20	20:15	MA EPH
benzo(b)fluoranthene	**0.64**	0.24	ug/g	1	CL	4/8/20	12630	4/9/20	20:15	MA EPH
benzo(k)fluoranthene	**0.57**	0.24	ug/g	1	CL	4/8/20	12630	4/9/20	20:15	MA EPH
benzo(a)pyrene	**0.70**	0.24	ug/g	1	CL	4/8/20	12630	4/9/20	20:15	MA EPH
indeno(1,2,3-cd)pyrene	**0.36**	0.24	ug/g	1	CL	4/8/20	12630	4/9/20	20:15	MA EPH
dibenzo(a,h)anthracene	< 0.24	0.24	ug/g	1	CL	4/8/20	12630	4/9/20	20:15	MA EPH
benzo(g,h,i)perylene	**0.51**	0.24	ug/g	1	CL	4/8/20	12630	4/9/20	20:15	MA EPH
Unadjusted C11-C22 Aromatics	**360**	24	ug/g	1	DBV	4/8/20	12630	4/9/20	20:46	MA EPH
C9-C18 Aliphatics	**92**	24	ug/g	1	DBV	4/8/20	12630	4/9/20	20:46	MA EPH
C19-C36 Aliphatics	**1900**	24	ug/g	1	DBV	4/8/20	12630	4/9/20	20:46	MA EPH
C11-C22 Aromatics	**350**	24	ug/g	1	DBV	4/8/20	12630	4/9/20	20:46	MA EPH
Surrogate Recovery		**Limits**								
1-chloro-octadecane SUR	**58**	40-140	%	1	DBV	4/8/20	12630	4/9/20	20:46	MA EPH
o-terphenyl SUR	**62**	40-140	%	1	DBV	4/8/20	12630	4/9/20	20:46	MA EPH
2-fluorobiphenyl SUR	**68**	40-140	%	1	DBV	4/8/20	12630	4/9/20	20:46	MA EPH
2-bromonaphthalene SUR	**72**	40-140	%	1	DBV	4/8/20	12630	4/9/20	20:46	MA EPH

Project ID: Cedar Woods 21
Job ID: 52513
Sample#: 52513-010
Sample ID: SB-109 (0-3')
Matrix: Solid Percent Dry: 70.9% Results expressed on a dry weight basis.
Sampled: 4/7/20 11:40

Parameter	Result	Reporting Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
naphthalene	< 0.28	0.28	ug/g	1	CL	4/8/20	12630	4/9/20	15:41	MA EPH
2-methylnaphthalene	< 0.28	0.28	ug/g	1	CL	4/8/20	12630	4/9/20	15:41	MA EPH
phenanthrene	< 0.28	0.28	ug/g	1	CL	4/8/20	12630	4/9/20	15:41	MA EPH
acenaphthene	< 0.28	0.28	ug/g	1	CL	4/8/20	12630	4/9/20	15:41	MA EPH
acenaphthylene	< 0.28	0.28	ug/g	1	CL	4/8/20	12630	4/9/20	15:41	MA EPH
fluorene	< 0.28	0.28	ug/g	1	CL	4/8/20	12630	4/9/20	15:41	MA EPH
anthracene	< 0.28	0.28	ug/g	1	CL	4/8/20	12630	4/9/20	15:41	MA EPH
fluoranthene	< 0.28	0.28	ug/g	1	CL	4/8/20	12630	4/9/20	15:41	MA EPH
pyrene	< 0.28	0.28	ug/g	1	CL	4/8/20	12630	4/9/20	15:41	MA EPH
benzo(a)anthracene	< 0.28	0.28	ug/g	1	CL	4/8/20	12630	4/9/20	15:41	MA EPH
chrysene	< 0.28	0.28	ug/g	1	CL	4/8/20	12630	4/9/20	15:41	MA EPH
benzo(b)fluoranthene	< 0.28	0.28	ug/g	1	CL	4/8/20	12630	4/9/20	15:41	MA EPH
benzo(k)fluoranthene	< 0.28	0.28	ug/g	1	CL	4/8/20	12630	4/9/20	15:41	MA EPH
benzo(a)pyrene	< 0.28	0.28	ug/g	1	CL	4/8/20	12630	4/9/20	15:41	MA EPH
indeno(1,2,3-cd)pyrene	< 0.28	0.28	ug/g	1	CL	4/8/20	12630	4/9/20	15:41	MA EPH
dibenzo(a,h)anthracene	< 0.28	0.28	ug/g	1	CL	4/8/20	12630	4/9/20	15:41	MA EPH
benzo(g,h,i)perylene	< 0.28	0.28	ug/g	1	CL	4/8/20	12630	4/9/20	15:41	MA EPH
Unadjusted C11-C22 Aromatics	< 28	28	ug/g	1	DBV	4/8/20	12630	4/9/20	14:31	MA EPH
C9-C18 Aliphatics	< 28	28	ug/g	1	DBV	4/8/20	12630	4/9/20	14:31	MA EPH
C19-C36 Aliphatics	**42**	28	ug/g	1	DBV	4/8/20	12630	4/9/20	14:31	MA EPH
C11-C22 Aromatics	< 28	28	ug/g	1	DBV	4/8/20	12630	4/9/20	14:31	MA EPH
Surrogate Recovery		**Limits**								
1-chloro-octadecane SUR	**56**	40-140	%	1	DBV	4/8/20	12630	4/9/20	14:31	MA EPH
o-terphenyl SUR	**61**	40-140	%	1	DBV	4/8/20	12630	4/9/20	14:31	MA EPH
2-fluorobiphenyl SUR	**68**	40-140	%	1	DBV	4/8/20	12630	4/9/20	14:31	MA EPH
2-bromonaphthalene SUR	**65**	40-140	%	1	DBV	4/8/20	12630	4/9/20	14:31	MA EPH

Project ID: Cedar Woods 21
Job ID: 52513
Sample#: 52513-011
Sample ID: SB-109 (5-8')
Matrix: Solid Percent Dry: 23.7% Results expressed on a dry weight basis.
Sampled: 4/7/20 11:45

Parameter	Result	Reporting Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
naphthalene	< 0.78	0.78	ug/g	1	CL	4/8/20	12630	4/9/20	16:12	MA EPH
2-methylnaphthalene	< 0.78	0.78	ug/g	1	CL	4/8/20	12630	4/9/20	16:12	MA EPH
phenanthrene	**0.80**	0.78	ug/g	1	CL	4/8/20	12630	4/9/20	16:12	MA EPH
acenaphthene	< 0.78	0.78	ug/g	1	CL	4/8/20	12630	4/9/20	16:12	MA EPH
acenaphthylene	< 0.78	0.78	ug/g	1	CL	4/8/20	12630	4/9/20	16:12	MA EPH
fluorene	< 0.78	0.78	ug/g	1	CL	4/8/20	12630	4/9/20	16:12	MA EPH
anthracene	< 0.78	0.78	ug/g	1	CL	4/8/20	12630	4/9/20	16:12	MA EPH
fluoranthene	**1.5**	0.78	ug/g	1	CL	4/8/20	12630	4/9/20	16:12	MA EPH
pyrene	**1.7**	0.78	ug/g	1	CL	4/8/20	12630	4/9/20	16:12	MA EPH
benzo(a)anthracene	**0.78**	0.78	ug/g	1	CL	4/8/20	12630	4/9/20	16:12	MA EPH
chrysene	**0.96**	0.78	ug/g	1	CL	4/8/20	12630	4/9/20	16:12	MA EPH
benzo(b)fluoranthene	**0.89**	0.78	ug/g	1	CL	4/8/20	12630	4/9/20	16:12	MA EPH
benzo(k)fluoranthene	< 0.78	0.78	ug/g	1	CL	4/8/20	12630	4/9/20	16:12	MA EPH
benzo(a)pyrene	**0.91**	0.78	ug/g	1	CL	4/8/20	12630	4/9/20	16:12	MA EPH
indeno(1,2,3-cd)pyrene	< 0.78	0.78	ug/g	1	CL	4/8/20	12630	4/9/20	16:12	MA EPH
dibenzo(a,h)anthracene	< 0.78	0.78	ug/g	1	CL	4/8/20	12630	4/9/20	16:12	MA EPH
benzo(g,h,i)perylene	< 0.78	0.78	ug/g	1	CL	4/8/20	12630	4/9/20	16:12	MA EPH
Unadjusted C11-C22 Aromatics	**110**	78	ug/g	1	DBV	4/8/20	12630	4/9/20	15:05	MA EPH
C9-C18 Aliphatics	< 78	78	ug/g	1	DBV	4/8/20	12630	4/9/20	15:05	MA EPH
C19-C36 Aliphatics	**290**	78	ug/g	1	DBV	4/8/20	12630	4/9/20	15:05	MA EPH
C11-C22 Aromatics	**100**	78	ug/g	1	DBV	4/8/20	12630	4/9/20	15:05	MA EPH
Surrogate Recovery		**Limits**								
1-chloro-octadecane SUR	**62**	40-140	%	1	DBV	4/8/20	12630	4/9/20	15:05	MA EPH
o-terphenyl SUR	**63**	40-140	%	1	DBV	4/8/20	12630	4/9/20	15:05	MA EPH
2-fluorobiphenyl SUR	**63**	40-140	%	1	DBV	4/8/20	12630	4/9/20	15:05	MA EPH
2-bromonaphthalene SUR	**60**	40-140	%	1	DBV	4/8/20	12630	4/9/20	15:05	MA EPH

Project ID: Cedar Woods 21
Job ID: 52513
Sample#: 52513-013
Sample ID: SB-110 (0-3')
Matrix: Solid Percent Dry: 88.3% Results expressed on a dry weight basis.
Sampled: 4/7/20 12:50

Parameter	Result	Reporting Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
naphthalene	< 0.22	0.22	ug/g	1	CL	4/8/20	12630	4/9/20	16:42	MA EPH
2-methylnaphthalene	< 0.22	0.22	ug/g	1	CL	4/8/20	12630	4/9/20	16:42	MA EPH
phenanthrene	**1.1**	0.22	ug/g	1	CL	4/8/20	12630	4/9/20	16:42	MA EPH
acenaphthene	< 0.22	0.22	ug/g	1	CL	4/8/20	12630	4/9/20	16:42	MA EPH
acenaphthylene	< 0.22	0.22	ug/g	1	CL	4/8/20	12630	4/9/20	16:42	MA EPH
fluorene	< 0.22	0.22	ug/g	1	CL	4/8/20	12630	4/9/20	16:42	MA EPH
anthracene	< 0.22	0.22	ug/g	1	CL	4/8/20	12630	4/9/20	16:42	MA EPH
fluoranthene	**1.3**	0.22	ug/g	1	CL	4/8/20	12630	4/9/20	16:42	MA EPH
pyrene	**1.4**	0.22	ug/g	1	CL	4/8/20	12630	4/9/20	16:42	MA EPH
benzo(a)anthracene	**0.59**	0.22	ug/g	1	CL	4/8/20	12630	4/9/20	16:42	MA EPH
chrysene	**0.74**	0.22	ug/g	1	CL	4/8/20	12630	4/9/20	16:42	MA EPH
benzo(b)fluoranthene	**0.57**	0.22	ug/g	1	CL	4/8/20	12630	4/9/20	16:42	MA EPH
benzo(k)fluoranthene	**0.53**	0.22	ug/g	1	CL	4/8/20	12630	4/9/20	16:42	MA EPH
benzo(a)pyrene	**0.63**	0.22	ug/g	1	CL	4/8/20	12630	4/9/20	16:42	MA EPH
indeno(1,2,3-cd)pyrene	**0.36**	0.22	ug/g	1	CL	4/8/20	12630	4/9/20	16:42	MA EPH
dibenzo(a,h)anthracene	< 0.22	0.22	ug/g	1	CL	4/8/20	12630	4/9/20	16:42	MA EPH
benzo(g,h,i)perylene	**0.42**	0.22	ug/g	1	CL	4/8/20	12630	4/9/20	16:42	MA EPH
Unadjusted C11-C22 Aromatics	**62**	22	ug/g	1	DBV	4/8/20	12630	4/9/20	15:39	MA EPH
C9-C18 Aliphatics	< 22	22	ug/g	1	DBV	4/8/20	12630	4/9/20	15:39	MA EPH
C19-C36 Aliphatics	**68**	22	ug/g	1	DBV	4/8/20	12630	4/9/20	15:39	MA EPH
C11-C22 Aromatics	**53**	22	ug/g	1	DBV	4/8/20	12630	4/9/20	15:39	MA EPH
Surrogate Recovery		**Limits**								
1-chloro-octadecane SUR	**45**	40-140	%	1	DBV	4/8/20	12630	4/9/20	15:39	MA EPH
o-terphenyl SUR	**54**	40-140	%	1	DBV	4/8/20	12630	4/9/20	15:39	MA EPH
2-fluorobiphenyl SUR	**73**	40-140	%	1	DBV	4/8/20	12630	4/9/20	15:39	MA EPH
2-bromonaphthalene SUR	**72**	40-140	%	1	DBV	4/8/20	12630	4/9/20	15:39	MA EPH

Project ID: Cedar Woods 21
Job ID: 52513
Sample#: 52513-014
Sample ID: SB-110 (5-8')
Matrix: Solid Percent Dry: 17.7% Results expressed on a dry weight basis.
Sampled: 4/7/20 12:55

Parameter	Result	Reporting Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
naphthalene	< 1.1	1.1	ug/g	1	CL	4/8/20	12630	4/9/20	14:10	MA EPH
2-methylnaphthalene	< 1.1	1.1	ug/g	1	CL	4/8/20	12630	4/9/20	14:10	MA EPH
phenanthrene	< 1.1	1.1	ug/g	1	CL	4/8/20	12630	4/9/20	14:10	MA EPH
acenaphthene	< 1.1	1.1	ug/g	1	CL	4/8/20	12630	4/9/20	14:10	MA EPH
acenaphthylene	< 1.1	1.1	ug/g	1	CL	4/8/20	12630	4/9/20	14:10	MA EPH
fluorene	< 1.1	1.1	ug/g	1	CL	4/8/20	12630	4/9/20	14:10	MA EPH
anthracene	< 1.1	1.1	ug/g	1	CL	4/8/20	12630	4/9/20	14:10	MA EPH
fluoranthene	< 1.1	1.1	ug/g	1	CL	4/8/20	12630	4/9/20	14:10	MA EPH
pyrene	< 1.1	1.1	ug/g	1	CL	4/8/20	12630	4/9/20	14:10	MA EPH
benzo(a)anthracene	< 1.1	1.1	ug/g	1	CL	4/8/20	12630	4/9/20	14:10	MA EPH
chrysene	< 1.1	1.1	ug/g	1	CL	4/8/20	12630	4/9/20	14:10	MA EPH
benzo(b)fluoranthene	< 1.1	1.1	ug/g	1	CL	4/8/20	12630	4/9/20	14:10	MA EPH
benzo(k)fluoranthene	< 1.1	1.1	ug/g	1	CL	4/8/20	12630	4/9/20	14:10	MA EPH
benzo(a)pyrene	< 1.1	1.1	ug/g	1	CL	4/8/20	12630	4/9/20	14:10	MA EPH
indeno(1,2,3-cd)pyrene	< 1.1	1.1	ug/g	1	CL	4/8/20	12630	4/9/20	14:10	MA EPH
dibenzo(a,h)anthracene	< 1.1	1.1	ug/g	1	CL	4/8/20	12630	4/9/20	14:10	MA EPH
benzo(g,h,i)perylene	< 1.1	1.1	ug/g	1	CL	4/8/20	12630	4/9/20	14:10	MA EPH
Unadjusted C11-C22 Aromatics	< 110	110	ug/g	1	DBV	4/8/20	12630	4/9/20	16:13	MA EPH
C9-C18 Aliphatics	< 110	110	ug/g	1	DBV	4/8/20	12630	4/9/20	16:13	MA EPH
C19-C36 Aliphatics	**140**	110	ug/g	1	DBV	4/8/20	12630	4/9/20	16:13	MA EPH
C11-C22 Aromatics	< 110	110	ug/g	1	DBV	4/8/20	12630	4/9/20	16:13	MA EPH
Surrogate Recovery		**Limits**								
1-chloro-octadecane SUR	**44**	40-140	%	1	DBV	4/8/20	12630	4/9/20	16:13	MA EPH
o-terphenyl SUR	**47**	40-140	%	1	DBV	4/8/20	12630	4/9/20	16:13	MA EPH
2-fluorobiphenyl SUR	**65**	40-140	%	1	DBV	4/8/20	12630	4/9/20	16:13	MA EPH
2-bromonaphthalene SUR	**62**	40-140	%	1	DBV	4/8/20	12630	4/9/20	16:13	MA EPH

Project ID: Cedar Woods 21
Job ID: 52513
Sample#: 52513-016
Sample ID: SB-112 (0-3')
Matrix: Solid Percent Dry: 90.3% Results expressed on a dry weight basis.
Sampled: 4/7/20 13:20

Parameter	Result	Reporting Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
naphthalene	< 0.21	0.21	ug/g	1	CL	4/8/20	12630	4/9/20	17:12	MA EPH
2-methylnaphthalene	< 0.21	0.21	ug/g	1	CL	4/8/20	12630	4/9/20	17:12	MA EPH
phenanthrene	**0.41**	0.21	ug/g	1	CL	4/8/20	12630	4/9/20	17:12	MA EPH
acenaphthene	< 0.21	0.21	ug/g	1	CL	4/8/20	12630	4/9/20	17:12	MA EPH
acenaphthylene	< 0.21	0.21	ug/g	1	CL	4/8/20	12630	4/9/20	17:12	MA EPH
fluorene	< 0.21	0.21	ug/g	1	CL	4/8/20	12630	4/9/20	17:12	MA EPH
anthracene	< 0.21	0.21	ug/g	1	CL	4/8/20	12630	4/9/20	17:12	MA EPH
fluoranthene	**0.80**	0.21	ug/g	1	CL	4/8/20	12630	4/9/20	17:12	MA EPH
pyrene	**0.73**	0.21	ug/g	1	CL	4/8/20	12630	4/9/20	17:12	MA EPH
benzo(a)anthracene	**0.39**	0.21	ug/g	1	CL	4/8/20	12630	4/9/20	17:12	MA EPH
chrysene	**0.42**	0.21	ug/g	1	CL	4/8/20	12630	4/9/20	17:12	MA EPH
benzo(b)fluoranthene	**0.37**	0.21	ug/g	1	CL	4/8/20	12630	4/9/20	17:12	MA EPH
benzo(k)fluoranthene	**0.38**	0.21	ug/g	1	CL	4/8/20	12630	4/9/20	17:12	MA EPH
benzo(a)pyrene	**0.40**	0.21	ug/g	1	CL	4/8/20	12630	4/9/20	17:12	MA EPH
indeno(1,2,3-cd)pyrene	**0.21**	0.21	ug/g	1	CL	4/8/20	12630	4/9/20	17:12	MA EPH
dibenzo(a,h)anthracene	< 0.21	0.21	ug/g	1	CL	4/8/20	12630	4/9/20	17:12	MA EPH
benzo(g,h,i)perylene	**0.25**	0.21	ug/g	1	CL	4/8/20	12630	4/9/20	17:12	MA EPH
Unadjusted C11-C22 Aromatics	**26**	21	ug/g	1	DBV	4/8/20	12630	4/9/20	16:47	MA EPH
C9-C18 Aliphatics	< 21	21	ug/g	1	DBV	4/8/20	12630	4/9/20	16:47	MA EPH
C19-C36 Aliphatics	**50**	21	ug/g	1	DBV	4/8/20	12630	4/9/20	16:47	MA EPH
C11-C22 Aromatics	**22**	21	ug/g	1	DBV	4/8/20	12630	4/9/20	16:47	MA EPH
Surrogate Recovery		**Limits**								
1-chloro-octadecane SUR	**62**	40-140	%	1	DBV	4/8/20	12630	4/9/20	16:47	MA EPH
o-terphenyl SUR	**68**	40-140	%	1	DBV	4/8/20	12630	4/9/20	16:47	MA EPH
2-fluorobiphenyl SUR	**66**	40-140	%	1	DBV	4/8/20	12630	4/9/20	16:47	MA EPH
2-bromonaphthalene SUR	**63**	40-140	%	1	DBV	4/8/20	12630	4/9/20	16:47	MA EPH

Project ID: Cedar Woods 21
Job ID: 52513
Sample#: 52513-017
Sample ID: SB-112 (5-8')
Matrix: Solid Percent Dry: 52.4% Results expressed on a dry weight basis.
Sampled: 4/7/20 13:25

Parameter	Result	Reporting Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
naphthalene	< 0.38	0.38	ug/g	1	CL	4/8/20	12630	4/9/20	19:14	MA EPH
2-methylnaphthalene	< 0.38	0.38	ug/g	1	CL	4/8/20	12630	4/9/20	19:14	MA EPH
phenanthrene	**4.7**	0.38	ug/g	1	CL	4/8/20	12630	4/9/20	19:14	MA EPH
acenaphthene	< 0.38	0.38	ug/g	1	CL	4/8/20	12630	4/9/20	19:14	MA EPH
acenaphthylene	< 0.38	0.38	ug/g	1	CL	4/8/20	12630	4/9/20	19:14	MA EPH
fluorene	**0.43**	0.38	ug/g	1	CL	4/8/20	12630	4/9/20	19:14	MA EPH
anthracene	**0.84**	0.38	ug/g	1	CL	4/8/20	12630	4/9/20	19:14	MA EPH
fluoranthene	**6.8**	0.38	ug/g	1	CL	4/8/20	12630	4/9/20	19:14	MA EPH
pyrene	**5.8**	0.38	ug/g	1	CL	4/8/20	12630	4/9/20	19:14	MA EPH
benzo(a)anthracene	**3.0**	0.38	ug/g	1	CL	4/8/20	12630	4/9/20	19:14	MA EPH
chrysene	**3.6**	0.38	ug/g	1	CL	4/8/20	12630	4/9/20	19:14	MA EPH
benzo(b)fluoranthene	**2.8**	0.38	ug/g	1	CL	4/8/20	12630	4/9/20	19:14	MA EPH
benzo(k)fluoranthene	**2.7**	0.38	ug/g	1	CL	4/8/20	12630	4/9/20	19:14	MA EPH
benzo(a)pyrene	**3.0**	0.38	ug/g	1	CL	4/8/20	12630	4/9/20	19:14	MA EPH
indeno(1,2,3-cd)pyrene	**1.7**	0.38	ug/g	1	CL	4/8/20	12630	4/9/20	19:14	MA EPH
dibenzo(a,h)anthracene	**0.62**	0.38	ug/g	1	CL	4/8/20	12630	4/9/20	19:14	MA EPH
benzo(g,h,i)perylene	**2.0**	0.38	ug/g	1	CL	4/8/20	12630	4/9/20	19:14	MA EPH
Unadjusted C11-C22 Aromatics	**180**	38	ug/g	1	DBV	4/8/20	12630	4/9/20	17:21	MA EPH
C9-C18 Aliphatics	< 38	38	ug/g	1	DBV	4/8/20	12630	4/9/20	17:21	MA EPH
C19-C36 Aliphatics	**190**	38	ug/g	1	DBV	4/8/20	12630	4/9/20	17:21	MA EPH
C11-C22 Aromatics	**140**	38	ug/g	1	DBV	4/8/20	12630	4/9/20	17:21	MA EPH
Surrogate Recovery		**Limits**								
1-chloro-octadecane SUR	**52**	40-140	%	1	DBV	4/8/20	12630	4/9/20	17:21	MA EPH
o-terphenyl SUR	**59**	40-140	%	1	DBV	4/8/20	12630	4/9/20	17:21	MA EPH
2-fluorobiphenyl SUR	**65**	40-140	%	1	DBV	4/8/20	12630	4/9/20	17:21	MA EPH
2-bromonaphthalene SUR	**64**	40-140	%	1	DBV	4/8/20	12630	4/9/20	17:21	MA EPH

Project ID: Cedar Woods 21
Job ID: 52513
Sample#: 52513-018
Sample ID: DUP-1
Matrix: Solid Percent Dry: 23.7% Results expressed on a dry weight basis.
Sampled: 4/7/20 0:00

Parameter	Result	Reporting Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
naphthalene	**0.86**	0.83	ug/g	1	CL	4/8/20	12630	4/9/20	17:43	MA EPH
2-methylnaphthalene	< 0.83	0.83	ug/g	1	CL	4/8/20	12630	4/9/20	17:43	MA EPH
phenanthrene	**5.7**	0.83	ug/g	1	CL	4/8/20	12630	4/9/20	17:43	MA EPH
acenaphthene	< 0.83	0.83	ug/g	1	CL	4/8/20	12630	4/9/20	17:43	MA EPH
acenaphthylene	< 0.83	0.83	ug/g	1	CL	4/8/20	12630	4/9/20	17:43	MA EPH
fluorene	< 0.83	0.83	ug/g	1	CL	4/8/20	12630	4/9/20	17:43	MA EPH
anthracene	**0.92**	0.83	ug/g	1	CL	4/8/20	12630	4/9/20	17:43	MA EPH
fluoranthene	**9.2**	0.83	ug/g	1	CL	4/8/20	12630	4/9/20	17:43	MA EPH
pyrene	**9.0**	0.83	ug/g	1	CL	4/8/20	12630	4/9/20	17:43	MA EPH
benzo(a)anthracene	**4.0**	0.83	ug/g	1	CL	4/8/20	12630	4/9/20	17:43	MA EPH
chrysene	**5.3**	0.83	ug/g	1	CL	4/8/20	12630	4/9/20	17:43	MA EPH
benzo(b)fluoranthene	**4.4**	0.83	ug/g	1	CL	4/8/20	12630	4/9/20	17:43	MA EPH
benzo(k)fluoranthene	**3.7**	0.83	ug/g	1	CL	4/8/20	12630	4/9/20	17:43	MA EPH
benzo(a)pyrene	**4.4**	0.83	ug/g	1	CL	4/8/20	12630	4/9/20	17:43	MA EPH
indeno(1,2,3-cd)pyrene	**2.9**	0.83	ug/g	1	CL	4/8/20	12630	4/9/20	17:43	MA EPH
dibenzo(a,h)anthracene	< 0.83	0.83	ug/g	1	CL	4/8/20	12630	4/9/20	17:43	MA EPH
benzo(g,h,i)perylene	**3.2**	0.83	ug/g	1	CL	4/8/20	12630	4/9/20	17:43	MA EPH
Unadjusted C11-C22 Aromatics	**360**	83	ug/g	1	DBV	4/8/20	12630	4/9/20	17:56	MA EPH
C9-C18 Aliphatics	< 83	83	ug/g	1	DBV	4/8/20	12630	4/9/20	17:56	MA EPH
C19-C36 Aliphatics	**390**	83	ug/g	1	DBV	4/8/20	12630	4/9/20	17:56	MA EPH
C11-C22 Aromatics	**300**	83	ug/g	1	DBV	4/8/20	12630	4/9/20	17:56	MA EPH
Surrogate Recovery		**Limits**								
1-chloro-octadecane SUR	**48**	40-140	%	1	DBV	4/8/20	12630	4/9/20	17:56	MA EPH
o-terphenyl SUR	**54**	40-140	%	1	DBV	4/8/20	12630	4/9/20	17:56	MA EPH
2-fluorobiphenyl SUR	**68**	40-140	%	1	DBV	4/8/20	12630	4/9/20	17:56	MA EPH
2-bromonaphthalene SUR	**66**	40-140	%	1	DBV	4/8/20	12630	4/9/20	17:56	MA EPH

Project ID: Cedar Woods 21
Job ID: 52513

Sample#: 52513-001
Sample ID: SB-104 (0-3')
Matrix: Solid Percent Dry: 89.3% Results expressed on a dry weight basis.
Sampled: 4/7/20 8:45

Parameter	Result	Reporting Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
Antimony	< 0.54	0.54	ug/g	5	AGN	4/9/20	12629	4/10/20	4:27	SW3051A6020A
Arsenic	< 2.7	2.7	ug/g	5	AGN	4/9/20	12629	4/10/20	4:27	SW3051A6020A
Barium	**17**	5.4	ug/g	5	AGN	4/9/20	12629	4/10/20	4:27	SW3051A6020A
Beryllium	< 0.54	0.54	ug/g	5	AGN	4/9/20	12629	4/10/20	4:27	SW3051A6020A
Cadmium	< 0.54	0.54	ug/g	5	AGN	4/9/20	12629	4/10/20	4:27	SW3051A6020A
Chromium	< 5.4	5.4	ug/g	5	AGN	4/9/20	12629	4/10/20	4:27	SW3051A6020A
Lead	**16**	2.7	ug/g	5	AGN	4/9/20	12629	4/10/20	4:27	SW3051A6020A
Mercury	< 0.15	0.15	ug/g	1	AGN	4/9/20	12632	4/15/20	12:18	SW7471B
Nickel	**5.4**	5.4	ug/g	5	AGN	4/9/20	12629	4/10/20	4:27	SW3051A6020A
Selenium	< 5.4	5.4	ug/g	5	AGN	4/9/20	12629	4/10/20	4:27	SW3051A6020A
Silver	< 2.7	2.7	ug/g	5	AGN	4/9/20	12629	4/10/20	4:27	SW3051A6020A
Thallium	< 0.54	0.54	ug/g	5	AGN	4/9/20	12629	4/10/20	4:27	SW3051A6020A
Vanadium	**8.3**	5.4	ug/g	5	AGN	4/9/20	12629	4/10/20	4:27	SW3051A6020A
Zinc	**16**	5.4	ug/g	5	AGN	4/9/20	12629	4/10/20	4:27	SW3051A6020A

Sample#: 52513-002
Sample ID: SB-104 (8-10')
Matrix: Solid Percent Dry: 83.1% Results expressed on a dry weight basis.
Sampled: 4/7/20 8:55

Parameter	Result	Reporting Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
Antimony	< 0.57	0.57	ug/g	5	AGN	4/9/20	12629	4/10/20	4:36	SW3051A6020A
Arsenic	**3.1**	2.8	ug/g	5	AGN	4/9/20	12629	4/10/20	4:36	SW3051A6020A
Barium	**27**	5.7	ug/g	5	AGN	4/9/20	12629	4/10/20	4:36	SW3051A6020A
Beryllium	< 0.57	0.57	ug/g	5	AGN	4/9/20	12629	4/10/20	4:36	SW3051A6020A
Cadmium	< 0.57	0.57	ug/g	5	AGN	4/9/20	12629	4/10/20	4:36	SW3051A6020A
Chromium	**16**	5.7	ug/g	5	AGN	4/9/20	12629	4/10/20	4:36	SW3051A6020A
Lead	**5.5**	2.8	ug/g	5	AGN	4/9/20	12629	4/10/20	4:36	SW3051A6020A
Mercury	< 0.16	0.16	ug/g	1	AGN	4/9/20	12632	4/15/20	12:20	SW7471B
Nickel	**17**	5.7	ug/g	5	AGN	4/9/20	12629	4/10/20	4:36	SW3051A6020A
Selenium	< 5.7	5.7	ug/g	5	AGN	4/9/20	12629	4/10/20	4:36	SW3051A6020A
Silver	< 2.8	2.8	ug/g	5	AGN	4/9/20	12629	4/10/20	4:36	SW3051A6020A
Thallium	< 0.57	0.57	ug/g	5	AGN	4/9/20	12629	4/10/20	4:36	SW3051A6020A
Vanadium	**22**	5.7	ug/g	5	AGN	4/9/20	12629	4/10/20	4:36	SW3051A6020A
Zinc	**18**	5.7	ug/g	5	AGN	4/9/20	12629	4/10/20	4:36	SW3051A6020A

Project ID: Cedar Woods 21
Job ID: 52513

Sample#: 52513-004
Sample ID: SB-107 (0-3')
Matrix: Solid Percent Dry: 79% Results expressed on a dry weight basis.
Sampled: 4/7/20 10:00

Parameter	Result	Reporting Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
Antimony	**55**	0.63	ug/g	5	AGN	4/9/20	12629	4/10/20	4:45	SW3051A6020A
Arsenic	**8.0**	3.2	ug/g	5	AGN	4/9/20	12629	4/10/20	4:45	SW3051A6020A
Barium	**280** M	6.3	ug/g	5	AGN	4/9/20	12629	4/10/20	4:45	SW3051A6020A
M = The recovery for the matrix spike was 156%. The acceptance criteria is 75-125%.										
Beryllium	< 0.63	0.63	ug/g	5	AGN	4/9/20	12629	4/10/20	4:45	SW3051A6020A
Cadmium	**4.4**	0.63	ug/g	5	AGN	4/9/20	12629	4/10/20	4:45	SW3051A6020A
Chromium	**33**	6.3	ug/g	5	AGN	4/9/20	12629	4/10/20	4:45	SW3051A6020A
Lead	**1200** M	3.2	ug/g	5	AGN	4/9/20	12629	4/10/20	4:45	SW3051A6020A
M = The recovery for the matrix spike was -7%. The acceptance criteria is 75-125%.										
Mercury	**0.60** M	0.16	ug/g	1	AGN	4/9/20	12632	4/15/20	12:21	SW7471B
M = The recovery for the matrix spike/duplicate were 12% and 64%. The acceptance criteria is 80-120%.										
Nickel	**76**	6.3	ug/g	5	AGN	4/9/20	12629	4/10/20	4:45	SW3051A6020A
Selenium	< 6.3 M	6.3	ug/g	5	AGN	4/9/20	12629	4/10/20	4:45	SW3051A6020A
M = The recovery for the matrix spike was 74%. The acceptance criteria is 75-125%.										
Silver	**32**	3.2	ug/g	5	AGN	4/9/20	12629	4/10/20	4:45	SW3051A6020A
Thallium	< 0.63	0.63	ug/g	5	AGN	4/9/20	12629	4/10/20	4:45	SW3051A6020A
Vanadium	**20**	6.3	ug/g	5	AGN	4/9/20	12629	4/10/20	4:45	SW3051A6020A
Zinc	**2900**	6.3	ug/g	5	AGN	4/9/20	12629	4/10/20	4:45	SW3051A6020A

Sample#: 52513-005
Sample ID: SB-107 (10-11')
Matrix: Solid Percent Dry: 84.5% Results expressed on a dry weight basis.
Sampled: 4/7/20 10:20

Parameter	Result	Reporting Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
Antimony	**5.9**	0.49	ug/g	5	AGN	4/9/20	12629	4/10/20	5:13	SW3051A6020A
Arsenic	**3.5**	2.5	ug/g	5	AGN	4/9/20	12629	4/10/20	5:13	SW3051A6020A
Barium	**48**	4.9	ug/g	5	AGN	4/9/20	12629	4/10/20	5:13	SW3051A6020A
Beryllium	< 0.49	0.49	ug/g	5	AGN	4/9/20	12629	4/10/20	5:13	SW3051A6020A
Cadmium	**2.0**	0.49	ug/g	5	AGN	4/9/20	12629	4/10/20	5:13	SW3051A6020A
Chromium	**19**	4.9	ug/g	5	AGN	4/9/20	12629	4/10/20	5:13	SW3051A6020A
Lead	**300**	2.5	ug/g	5	AGN	4/9/20	12629	4/10/20	5:13	SW3051A6020A
Mercury	< 0.14	0.14	ug/g	1	AGN	4/9/20	12632	4/15/20	12:27	SW7471B
Nickel	**16**	4.9	ug/g	5	AGN	4/9/20	12629	4/10/20	5:13	SW3051A6020A
Selenium	< 4.9	4.9	ug/g	5	AGN	4/9/20	12629	4/10/20	5:13	SW3051A6020A
Silver	< 2.5	2.5	ug/g	5	AGN	4/9/20	12629	4/10/20	5:13	SW3051A6020A
Thallium	< 0.49	0.49	ug/g	5	AGN	4/9/20	12629	4/10/20	5:13	SW3051A6020A
Vanadium	**12**	4.9	ug/g	5	AGN	4/9/20	12629	4/10/20	5:13	SW3051A6020A
Zinc	**250**	4.9	ug/g	5	AGN	4/9/20	12629	4/10/20	5:13	SW3051A6020A

Project ID: Cedar Woods 21
Job ID: 52513

Sample#: 52513-007
Sample ID: SB-108 (0-3')
Matrix: Solid Percent Dry: 73.6% Results expressed on a dry weight basis.
Sampled: 4/7/20 10:50

Parameter	Result	Reporting Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
Antimony	**51**	0.65	ug/g	5	AGN	4/9/20	12629	4/10/20	5:23	SW3051A6020A
Arsenic	**8.1**	3.3	ug/g	5	AGN	4/9/20	12629	4/10/20	5:23	SW3051A6020A
Barium	**430**	6.5	ug/g	5	AGN	4/9/20	12629	4/10/20	5:23	SW3051A6020A
Beryllium	< 0.65	0.65	ug/g	5	AGN	4/9/20	12629	4/10/20	5:23	SW3051A6020A
Cadmium	**5.8**	0.65	ug/g	5	AGN	4/9/20	12629	4/10/20	5:23	SW3051A6020A
Chromium	**70**	6.5	ug/g	5	AGN	4/9/20	12629	4/10/20	5:23	SW3051A6020A
Lead	**1200**	3.3	ug/g	5	AGN	4/9/20	12629	4/10/20	5:23	SW3051A6020A
Mercury	**0.18**	0.15	ug/g	1	AGN	4/9/20	12632	4/15/20	12:29	SW7471B
Nickel	**88**	6.5	ug/g	5	AGN	4/9/20	12629	4/10/20	5:23	SW3051A6020A
Selenium	< 6.5	6.5	ug/g	5	AGN	4/9/20	12629	4/10/20	5:23	SW3051A6020A
Silver	**7.3**	3.3	ug/g	5	AGN	4/9/20	12629	4/10/20	5:23	SW3051A6020A
Thallium	< 0.65	0.65	ug/g	5	AGN	4/9/20	12629	4/10/20	5:23	SW3051A6020A
Vanadium	**10**	6.5	ug/g	5	AGN	4/9/20	12629	4/10/20	5:23	SW3051A6020A
Zinc	**2900**	6.5	ug/g	5	AGN	4/9/20	12629	4/10/20	5:23	SW3051A6020A

Sample#: 52513-008
Sample ID: SB-108 (6-9')
Matrix: Solid Percent Dry: 80.4% Results expressed on a dry weight basis.
Sampled: 4/7/20 11:00

Parameter	Result	Reporting Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
Antimony	**10**	0.60	ug/g	5	AGN	4/9/20	12629	4/10/20	5:32	SW3051A6020A
Arsenic	**7.1**	3.0	ug/g	5	AGN	4/9/20	12629	4/10/20	5:32	SW3051A6020A
Barium	**470**	6.0	ug/g	5	AGN	4/9/20	12629	4/10/20	5:32	SW3051A6020A
Beryllium	< 0.60	0.60	ug/g	5	AGN	4/9/20	12629	4/10/20	5:32	SW3051A6020A
Cadmium	**11**	0.60	ug/g	5	AGN	4/9/20	12629	4/10/20	5:32	SW3051A6020A
Chromium	**25**	6.0	ug/g	5	AGN	4/9/20	12629	4/10/20	5:32	SW3051A6020A
Lead	**970**	3.0	ug/g	5	AGN	4/9/20	12629	4/10/20	5:32	SW3051A6020A
Mercury	**0.47**	0.16	ug/g	1	AGN	4/9/20	12632	4/15/20	12:30	SW7471B
Nickel	**40**	6.0	ug/g	5	AGN	4/9/20	12629	4/10/20	5:32	SW3051A6020A
Selenium	< 6.0	6.0	ug/g	5	AGN	4/9/20	12629	4/10/20	5:32	SW3051A6020A
Silver	< 3.0	3.0	ug/g	5	AGN	4/9/20	12629	4/10/20	5:32	SW3051A6020A
Thallium	< 0.60	0.60	ug/g	5	AGN	4/9/20	12629	4/10/20	5:32	SW3051A6020A
Vanadium	**18**	6.0	ug/g	5	AGN	4/9/20	12629	4/10/20	5:32	SW3051A6020A
Zinc	**2400**	6.0	ug/g	5	AGN	4/9/20	12629	4/10/20	5:32	SW3051A6020A

Project ID: Cedar Woods 21
Job ID: 52513

Sample#: 52513-010
Sample ID: SB-109 (0-3')
Matrix: Solid Percent Dry: 70.9% Results expressed on a dry weight basis.
Sampled: 4/7/20 11:40

Parameter	Result	Reporting Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
Antimony	**64**	0.67	ug/g	5	AGN	4/9/20	12629	4/10/20	5:41	SW3051A6020A
Arsenic	**23**	3.3	ug/g	5	AGN	4/9/20	12629	4/10/20	5:41	SW3051A6020A
Barium	**300**	6.7	ug/g	5	AGN	4/9/20	12629	4/10/20	5:41	SW3051A6020A
Beryllium	< 0.67	0.67	ug/g	5	AGN	4/9/20	12629	4/10/20	5:41	SW3051A6020A
Cadmium	**3.6**	0.67	ug/g	5	AGN	4/9/20	12629	4/10/20	5:41	SW3051A6020A
Chromium	**64**	6.7	ug/g	5	AGN	4/9/20	12629	4/10/20	5:41	SW3051A6020A
Lead	**1300**	3.3	ug/g	5	AGN	4/9/20	12629	4/10/20	5:41	SW3051A6020A
Mercury	< 0.19	0.19	ug/g	1	AGN	4/9/20	12632	4/15/20	12:32	SW7471B
Nickel	**100**	6.7	ug/g	5	AGN	4/9/20	12629	4/10/20	5:41	SW3051A6020A
Selenium	< 6.7	6.7	ug/g	5	AGN	4/9/20	12629	4/10/20	5:41	SW3051A6020A
Silver	**12**	3.3	ug/g	5	AGN	4/9/20	12629	4/10/20	5:41	SW3051A6020A
Thallium	< 0.67	0.67	ug/g	5	AGN	4/9/20	12629	4/10/20	5:41	SW3051A6020A
Vanadium	**8.1**	6.7	ug/g	5	AGN	4/9/20	12629	4/10/20	5:41	SW3051A6020A
Zinc	**4000**	6.7	ug/g	5	AGN	4/9/20	12629	4/10/20	5:41	SW3051A6020A

Sample#: 52513-011
Sample ID: SB-109 (5-8')
Matrix: Solid Percent Dry: 23.7% Results expressed on a dry weight basis.
Sampled: 4/7/20 11:45

Parameter	Result	Reporting Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
Antimony	**3.5**	2.0	ug/g	5	AGN	4/9/20	12629	4/10/20	5:51	SW3051A6020A
Arsenic	**15**	9.9	ug/g	5	AGN	4/9/20	12629	4/10/20	5:51	SW3051A6020A
Barium	**78**	20	ug/g	5	AGN	4/9/20	12629	4/10/20	5:51	SW3051A6020A
Beryllium	< 2.0	2.0	ug/g	5	AGN	4/9/20	12629	4/10/20	5:51	SW3051A6020A
Cadmium	< 2.0	2.0	ug/g	5	AGN	4/9/20	12629	4/10/20	5:51	SW3051A6020A
Chromium	< 20	20	ug/g	5	AGN	4/9/20	12629	4/10/20	5:51	SW3051A6020A
Lead	**180**	9.9	ug/g	5	AGN	4/9/20	12629	4/10/20	5:51	SW3051A6020A
Mercury	< 0.58	0.58	ug/g	1	AGN	4/9/20	12632	4/15/20	12:34	SW7471B
Nickel	< 20	20	ug/g	5	AGN	4/9/20	12629	4/10/20	5:51	SW3051A6020A
Selenium	< 20	20	ug/g	5	AGN	4/9/20	12629	4/10/20	5:51	SW3051A6020A
Silver	< 9.9	9.9	ug/g	5	AGN	4/9/20	12629	4/10/20	5:51	SW3051A6020A
Thallium	< 2.0	2.0	ug/g	5	AGN	4/9/20	12629	4/10/20	5:51	SW3051A6020A
Vanadium	< 20	20	ug/g	5	AGN	4/9/20	12629	4/10/20	5:51	SW3051A6020A
Zinc	**270**	20	ug/g	5	AGN	4/9/20	12629	4/10/20	5:51	SW3051A6020A

Project ID: Cedar Woods 21
Job ID: 52513

Sample#: 52513-013
Sample ID: SB-110 (0-3')
Matrix: Solid Percent Dry: 88.3% Results expressed on a dry weight basis.
Sampled: 4/7/20 12:50

Parameter	Result	Reporting Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
Antimony	< 0.51	0.51	ug/g	5	AGN	4/9/20	12629	4/10/20	6:28	SW3051A6020A
Arsenic	**2.9**	2.5	ug/g	5	AGN	4/9/20	12629	4/10/20	6:28	SW3051A6020A
Barium	**41**	5.1	ug/g	5	AGN	4/9/20	12629	4/10/20	6:28	SW3051A6020A
Beryllium	< 0.51	0.51	ug/g	5	AGN	4/9/20	12629	4/10/20	6:28	SW3051A6020A
Cadmium	< 0.51	0.51	ug/g	5	AGN	4/9/20	12629	4/10/20	6:28	SW3051A6020A
Chromium	**10**	5.1	ug/g	5	AGN	4/9/20	12629	4/10/20	6:28	SW3051A6020A
Lead	**8.1**	2.5	ug/g	5	AGN	4/9/20	12629	4/10/20	19:48	SW3051A6020A
Mercury	< 0.16	0.16	ug/g	1	AGN	4/9/20	12632	4/15/20	12:36	SW7471B
Nickel	**12**	5.1	ug/g	5	AGN	4/9/20	12629	4/10/20	6:28	SW3051A6020A
Selenium	< 5.1	5.1	ug/g	5	AGN	4/9/20	12629	4/10/20	6:28	SW3051A6020A
Silver	< 2.5	2.5	ug/g	5	AGN	4/9/20	12629	4/10/20	6:28	SW3051A6020A
Thallium	< 0.51	0.51	ug/g	5	AGN	4/9/20	12629	4/10/20	6:28	SW3051A6020A
Vanadium	**16**	5.1	ug/g	5	AGN	4/9/20	12629	4/10/20	6:28	SW3051A6020A
Zinc	**19**	5.1	ug/g	5	AGN	4/9/20	12629	4/10/20	6:28	SW3051A6020A

Sample#: 52513-014
Sample ID: SB-110 (5-8')
Matrix: Solid Percent Dry: 17.7% Results expressed on a dry weight basis.
Sampled: 4/7/20 12:55

Parameter	Result	Reporting Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
Antimony	**3.5**	2.8	ug/g	5	AGN	4/9/20	12629	4/10/20	6:38	SW3051A6020A
Arsenic	< 14	14	ug/g	5	AGN	4/9/20	12629	4/10/20	6:38	SW3051A6020A
Barium	**160**	28	ug/g	5	AGN	4/9/20	12629	4/10/20	6:38	SW3051A6020A
Beryllium	< 2.8	2.8	ug/g	5	AGN	4/9/20	12629	4/10/20	6:38	SW3051A6020A
Cadmium	< 2.8	2.8	ug/g	5	AGN	4/9/20	12629	4/10/20	6:38	SW3051A6020A
Chromium	< 28	28	ug/g	5	AGN	4/9/20	12629	4/10/20	6:38	SW3051A6020A
Lead	**290**	14	ug/g	5	AGN	4/9/20	12629	4/10/20	19:56	SW3051A6020A
Mercury	< 0.78	0.78	ug/g	1	AGN	4/9/20	12632	4/15/20	12:41	SW7471B
Nickel	< 28	28	ug/g	5	AGN	4/9/20	12629	4/10/20	6:38	SW3051A6020A
Selenium	< 28	28	ug/g	5	AGN	4/9/20	12629	4/10/20	6:38	SW3051A6020A
Silver	< 14	14	ug/g	5	AGN	4/9/20	12629	4/10/20	6:38	SW3051A6020A
Thallium	< 2.8	2.8	ug/g	5	AGN	4/9/20	12629	4/10/20	6:38	SW3051A6020A
Vanadium	< 28	28	ug/g	5	AGN	4/9/20	12629	4/10/20	6:38	SW3051A6020A
Zinc	**230**	28	ug/g	5	AGN	4/9/20	12629	4/10/20	6:38	SW3051A6020A

Project ID: Cedar Woods 21
Job ID: 52513

Sample#: 52513-016
Sample ID: SB-112 (0-3')
Matrix: Solid Percent Dry: 90.3% Results expressed on a dry weight basis.
Sampled: 4/7/20 13:20

Parameter	Result	Reporting Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
Antimony	< 0.50	0.50	ug/g	5	AGN	4/9/20	12629	4/10/20	6:47	SW3051A6020A
Arsenic	**5.0**	2.5	ug/g	5	AGN	4/9/20	12629	4/10/20	6:47	SW3051A6020A
Barium	**38**	5.0	ug/g	5	AGN	4/9/20	12629	4/10/20	6:47	SW3051A6020A
Beryllium	< 0.50	0.50	ug/g	5	AGN	4/9/20	12629	4/10/20	6:47	SW3051A6020A
Cadmium	< 0.50	0.50	ug/g	5	AGN	4/9/20	12629	4/10/20	6:47	SW3051A6020A
Chromium	**18**	5.0	ug/g	5	AGN	4/9/20	12629	4/10/20	6:47	SW3051A6020A
Lead	**66**	2.5	ug/g	5	AGN	4/9/20	12629	4/10/20	20:04	SW3051A6020A
Mercury	< 0.15	0.15	ug/g	1	AGN	4/9/20	12632	4/15/20	12:43	SW7471B
Nickel	**18**	5.0	ug/g	5	AGN	4/9/20	12629	4/10/20	6:47	SW3051A6020A
Selenium	< 5.0	5.0	ug/g	5	AGN	4/9/20	12629	4/10/20	6:47	SW3051A6020A
Silver	< 2.5	2.5	ug/g	5	AGN	4/9/20	12629	4/10/20	6:47	SW3051A6020A
Thallium	< 0.50	0.50	ug/g	5	AGN	4/9/20	12629	4/10/20	6:47	SW3051A6020A
Vanadium	**21**	5.0	ug/g	5	AGN	4/9/20	12629	4/10/20	6:47	SW3051A6020A
Zinc	**51**	5.0	ug/g	5	AGN	4/9/20	12629	4/10/20	6:47	SW3051A6020A

Sample#: 52513-017
Sample ID: SB-112 (5-8')
Matrix: Solid Percent Dry: 52.4% Results expressed on a dry weight basis.
Sampled: 4/7/20 13:25

Parameter	Result	Reporting Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
Antimony	**4.2**	0.95	ug/g	5	AGN	4/9/20	12629	4/10/20	6:56	SW3051A6020A
Arsenic	**16**	4.8	ug/g	5	AGN	4/9/20	12629	4/10/20	6:56	SW3051A6020A
Barium	**130**	9.5	ug/g	5	AGN	4/9/20	12629	4/10/20	6:56	SW3051A6020A
Beryllium	< 0.95	0.95	ug/g	5	AGN	4/9/20	12629	4/10/20	6:56	SW3051A6020A
Cadmium	**1.1**	0.95	ug/g	5	AGN	4/9/20	12629	4/10/20	20:13	SW3051A6020A
Chromium	**21**	9.5	ug/g	5	AGN	4/9/20	12629	4/10/20	6:56	SW3051A6020A
Lead	**470**	4.8	ug/g	5	AGN	4/9/20	12629	4/10/20	20:13	SW3051A6020A
Mercury	**0.80**	0.25	ug/g	1	AGN	4/9/20	12632	4/15/20	12:45	SW7471B
Nickel	**17**	9.5	ug/g	5	AGN	4/9/20	12629	4/10/20	6:56	SW3051A6020A
Selenium	< 9.5	9.5	ug/g	5	AGN	4/9/20	12629	4/10/20	6:56	SW3051A6020A
Silver	< 4.8	4.8	ug/g	5	AGN	4/9/20	12629	4/10/20	6:56	SW3051A6020A
Thallium	< 0.95	0.95	ug/g	5	AGN	4/9/20	12629	4/10/20	6:56	SW3051A6020A
Vanadium	**26**	9.5	ug/g	5	AGN	4/9/20	12629	4/10/20	6:56	SW3051A6020A
Zinc	**300**	9.5	ug/g	5	AGN	4/9/20	12629	4/10/20	6:56	SW3051A6020A

Project ID: Cedar Woods 21
Job ID: 52513
Sample#: 52513-018
Sample ID: DUP-1
Matrix: Solid Percent Dry: 23.7% Results expressed on a dry weight basis.
Sampled: 4/7/20 0:00

Parameter	Result	Reporting Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
Antimony	**2.1**	2.0	ug/g	5	AGN	4/9/20	12629	4/10/20	7:06	SW3051A6020A
Arsenic	**20**	10	ug/g	5	AGN	4/9/20	12629	4/10/20	7:06	SW3051A6020A
Barium	**86**	20	ug/g	5	AGN	4/9/20	12629	4/10/20	7:06	SW3051A6020A
Beryllium	< 2.0	2.0	ug/g	5	AGN	4/9/20	12629	4/10/20	7:06	SW3051A6020A
Cadmium	< 2.0	2.0	ug/g	5	AGN	4/9/20	12629	4/10/20	7:06	SW3051A6020A
Chromium	< 20	20	ug/g	5	AGN	4/9/20	12629	4/10/20	7:06	SW3051A6020A
Lead	**250**	10	ug/g	5	AGN	4/9/20	12629	4/10/20	20:46	SW3051A6020A
Mercury	**0.99**	0.54	ug/g	1	AGN	4/9/20	12632	4/15/20	12:47	SW7471B
Nickel	< 20	20	ug/g	5	AGN	4/9/20	12629	4/10/20	7:06	SW3051A6020A
Selenium	< 20	20	ug/g	5	AGN	4/9/20	12629	4/10/20	7:06	SW3051A6020A
Silver	< 10	10	ug/g	5	AGN	4/9/20	12629	4/10/20	7:06	SW3051A6020A
Thallium	< 2.0	2.0	ug/g	5	AGN	4/9/20	12629	4/10/20	7:06	SW3051A6020A
Vanadium	< 20	20	ug/g	5	AGN	4/9/20	12629	4/10/20	7:06	SW3051A6020A
Zinc	**250**	20	ug/g	5	AGN	4/9/20	12629	4/10/20	7:06	SW3051A6020A

Project ID: Cedar Woods 21
Job ID: 52513

Sample#: 52513-002
Sample ID: SB-104 (8-10')
Matrix: Solid Percent Dry: 83.1% Results expressed on a dry weight basis.
Sampled: 4/7/20 8:55

Parameter	Result	Reporting Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
Chromium, Hexavalent	< 0.47	0.47	ug/g	1	SFM		2001871	4/10/20	11:30	SW3060A7196A
Oxidation Reduction Potential	**470**		mV	1	WAS		2001839	4/8/20	6:07	ASTM1498-08
pH	**5.9** D		pH	1	WAS		2001840	4/8/20	5:55	SW9045C

D = The difference for the sample duplicate, run as internal QC, was outside the 0.2 pH units acceptance range. The duplicate result is 5.6 pH units.

Sample#: 52513-004
Sample ID: SB-107 (0-3')
Matrix: Solid Percent Dry: 79% Results expressed on a dry weight basis.
Sampled: 4/7/20 10:00

Parameter	Result	Reporting Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
Chromium, Hexavalent	< 0.51 M	0.51	ug/g	1	SFM		2001871	4/10/20	11:30	SW3060A7196A

M = The percent recovery in the matrix spike was outside acceptance criteria. See case narrative.

Oxidation Reduction Potential	**180**		mV	1	WAS		2001839	4/8/20	6:28	ASTM1498-08
pH	**8.3**		pH	1	WAS		2001840	4/8/20	6:00	SW9045C

Sample#: 52513-008
Sample ID: SB-108 (6-9')
Matrix: Solid Percent Dry: 80.4% Results expressed on a dry weight basis.
Sampled: 4/7/20 11:00

Parameter	Result	Reporting Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
Chromium, Hexavalent	< 0.48	0.48	ug/g	1	SFM		2001871	4/10/20	11:30	SW3060A7196A
Oxidation Reduction Potential	**200**		mV	1	WAS		2001839	4/8/20	6:35	ASTM1498-08
pH	**8.0**		pH	1	WAS		2001840	4/8/20	6:08	SW9045C

Sample#: 52513-011
Sample ID: SB-109 (5-8')
Matrix: Solid Percent Dry: 23.7% Results expressed on a dry weight basis.
Sampled: 4/7/20 11:45

Parameter	Result	Reporting Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
Chromium, Hexavalent	< 1.6	1.6	ug/g	1	SFM		2001871	4/10/20	11:30	SW3060A7196A
Oxidation Reduction Potential	**140**		mV	1	WAS		2001839	4/8/20	6:48	ASTM1498-08
pH	**7.5**		pH	1	WAS		2001840	4/8/20	6:18	SW9045C

Sample#: 52513-014
Sample ID: SB-110 (5-8')
Matrix: Solid Percent Dry: 17.7% Results expressed on a dry weight basis.
Sampled: 4/7/20 12:55

Parameter	Result	Reporting Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
Chromium, Hexavalent	< 2.2	2.2	ug/g	1	SFM		2001871	4/10/20	11:30	SW3060A7196A
Oxidation Reduction Potential	**130**		mV	1	WAS		2001839	4/8/20	7:02	ASTM1498-08
pH	**7.4**		pH	1	WAS		2001840	4/8/20	6:20	SW9045C

Project ID: Cedar Woods 21
Job ID: 52513
Sample#: 52513-017
Sample ID: SB-112 (5-8')
Matrix: Solid Percent Dry: 52.4% Results expressed on a dry weight basis.
Sampled: 4/7/20 13:25

Parameter	Result	Reporting Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
Chromium, Hexavalent	**1.3**	0.76	ug/g	1	SFM		2001871	4/10/20	11:30	SW3060A7196A
Oxidation Reduction Potential	**140**		mV	1	WAS		2001839	4/8/20	7:10	ASTM1498-08
pH	**7.6**		pH	1	WAS		2001840	4/8/20	6:22	SW9045C

Quality Control Report

124 Heritage Avenue Unit 16
Portsmouth, NH 03801
www.absoluteresourceassociates.com

MassDEP Analytical Protocol Certification Form

Laboratory Name: Absolute Resource Associates	Project #: 21
Project Location: Massachusetts	RTN:

This Form provides certifications for the following data set: list Laboratory Sample ID Number(s): 52513

Matrices: ☐ Groundwater/Surface Water ☑ Soil/Sediment ☐ Drinking Water ☐ Air ☐ Other:

CAM Protocol (check all that apply below):

8260 VOC CAM II A ☑	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 ☐
8270 SVOC CAM II B ☐	7010 Metals CAM III C ☐	MassDEP VPH (GC/MS) CAM IV C ☐	8081 Pesticides CAM V B ☐	7196 Hex Cr CAM VI B ☑	MassDEP APH CAM IX A ☐
6010 Metals CAM III A ☐	6020 Metals CAM III D ☑	MassDEP EPH CAM IV B ☑	8151 Herbicides CAM V C ☐	8330 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 ☐ No
B	Were the analytical method(s) and all associated QC requirements specified in the selected CAM protocol(s) followed?	☑ Yes ☐ 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 ☐ No
D	Does the laboratory report comply with all the reporting requirements specified in CAM VII A, "Quality Assurance and Quality Control Guidelines for the Acquisition and Reporting of Analytical Data"?	☑ Yes ☐ No
E	VPH, EPH, APH, and TO-15 only a. VPH, EPH, and APH Methods only: Was each method conducted without significant modification(s)? (Refer to the individual method(s) for a list of significant modifications). b. APH and TO-15 Methods only: Was the complete analyte list reported for each method?	☑ Yes ☐ No ☐ 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 ☐ 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 protocol(s)?	☑ Yes ☐ No[1]

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

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

[1]*All negative responses must be addressed in an attached 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, is accurate and complete.

Signature: _____ **Position:** Chief Operating Officer

Printed Name: Aaron DeWees **Date**: 5/1/20

Sample Integrity Table

Parameter	Method	Matrix	Minimum Volume	Recommended Container(s)	Required Preservation	Holding Time
Volatile Organics	EPA 8260	Aqueous	40mL	2 x 40mL VOA Vials with Teflon lined septa	Cool to ≤6°C 1:1 HCl to pH <2	14 Days
Volatile Organics	EPA 8260	Solid	40mL	1 x 40mL VOA Vial with 10mLs Methanol and 1 unpreserved container for percent moisture	Cool to ≤6°C Methanol	14 Days
Semivolatile Organics	EPA 8270	Aqueous	1L	1L Amber Glass Bottle w/Teflon liner	Cool to ≤6°C	7 Days
Semivolatile Organics	EPA 8270	Solid	20g	4oz Amber Glass Jar w/Teflon liner	Cool to ≤6°C	14 Days
Organochlorine Pesticides	EPA 8081	Aqueous	1L	1L Amber Glass Bottle w/Teflon liner	Cool to ≤6°C	7 Days
Organochlorine Pesticides	EPA 8081	Solid	20g	4oz Glass Jar w/Teflon liner	Cool to ≤6°C	14 Days
PCBs	EPA 8082	Aqueous	1L	1L Amber Glass Bottle w/Teflon liner	Cool to ≤6°C	365 Days
PCBs	EPA 8082	Solid	20g	4oz Glass Jar w/Teflon liner	Cool to ≤6°C	365 Days
Herbicides (subcontracted)	EPA 8151	Aqueous	1L	1L Amber Glass Bottle w/Teflon liner	Cool to ≤6°C	7 Days
Herbicides (subcontracted)	EPA 8151	Solid	30g	4oz Glass Jar w/Teflon liner	Cool to ≤6°C	14 Days
MA DEP VPH	MADEP VPH	Aqueous	40mL	2 x 40mL VOA Vials with Teflon lined septa	Cool to ≤6°C 1:1 HCl to pH <2	14 Days
MA DEP VPH	MADEP VPH	Solid	40mL	1 x 40mL VOA Vial with 10mLs Methanol and 1 unpreserved container for percent moisture	Cool to ≤6°C Methanol	28 Days
MA DEP EPH	MADEP EPH	Aqueous	1L	1L Amber Glass Bottle w/Teflon liner	Cool to ≤6°C 1:1 HCl to pH <2	14 Days
MA DEP EPH	MADEP EPH	Solid	30g	4oz Amber Glass Jar w/Teflon liner	Cool to ≤6°C	14 Days
Total Metals	EPA 6010	Aqueous	100mL	250mL Polyethylene Bottle	1:1 HNO_3 to pH <2	180 Days
Dissolved Metals	EPA 6010	Aqueous	100mL	250mL Polyethylene Bottle	Filter First 1:1 HNO_3 to pH <2	180 Days
Total Metals	EPA 6010	Solid	15g	4oz Glass Jar w/Teflon liner	Cool to ≤6°C	180 Days
Total Mercury (may be combined with Total Metals)	EPA 7470	Aqueous	100mL	125mL Polyethylene Bottle	1:1 HNO_3 to pH <2	28 Days
Total Mercury (may be combined with Total Metals)	EPA 7471	Solid	15g	4oz Glass Jar w/Teflon liner	Cool to ≤6°C	28 Days
Chromium, Hexavalent	EPA 7196	Aqueous	100mL	125mL Polyethylene Bottle	Cool to ≤6°C (NH4)2SO4 buffer	28 Days
Chromium, Hexavalent (subcontract)	EPA 7196	Solid	15g	4oz Glass Jar w/Teflon liner	Cool to ≤6°C	30 Days
Cyanide, Total	EPA 9014	Aqueous	125mL	125mL Polyethylene Bottle	Cool to ≤6°C 1:1 NaOH to pH >8	14 Days
Cyanide, Total	EPA 9014	Solid	15g	4oz Glass Jar w/Teflon liner	Cool to ≤6°C	14 Days

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Case Narrative
Lab # 52513

Sample Receiving and Chain of Custody Discrepancies

Samples were received in acceptable condition, between 0 and 6 degrees C, on ice, and in accordance with sample handling, preservation and integrity guidelines.
As noted on the result page, several VOC samples did not meet the 1:1 +/-25% methanol to soil ratio.

Calibration

VOC: See the included table for a list of compounds quantitated by quadratic equation.
SVOC: See the included table for a list of compounds quantitated by quadratic equation.

Method Blank

No exceptions noted.

Surrogate Recoveries

VPH: Sample 52513-004 did not meet acceptance criteria for the surrogate a,a,a-trifluorotoluene. Matrix interference suspected. Sample 52513-005 did not meet acceptance criteria for the aliphatic surrogate 2,5-dibromotoluene, likely as a result of hydrocarbon interference. Sample 52513-014 did not meet acceptance criteria for the surrogate a,a,a-trifluorotoluene, likely as a result of the sample's high moisture content. All of the associated sample chromatograms are included in the report.
VOC: The LCS/D12627 did not meet acceptance limits for the surrogate 4-bromofluorobenzene. The percent recovery for this surrogate was outside of the acceptance criteria in sample 52513-008, likely as a result of hydrocarbon interference. The sample chromatogram is included in the report.

Laboratory Control Sample Results

VOC: The LCS12627 did not meet the acceptance criteria for bromomethane and t-butanol (TBA). Since recoveries were >10% and <10% of the compounds were outside of the acceptance criteria, reanalysis is not required.

Matrix Spike/Matrix Spike Duplicate/Duplicate Results

Metals: The percent recovery for mercury in the MS/D12632 (52513-004) was 12% and 64% respectively, outside the acceptance criteria of 80-120%. All other batch QC was within acceptance limits. Matrix interference is suspected. The percent recovery for lead in the MS/D12629 was -7% and 43% respectively, outside the acceptance criteria of 75-125%. All other batch QC was within acceptance limits. Matrix interference is suspected. The percent recovery in the MSD12629 was 156% for barium and 74% for selenium. All other batch QC was within acceptance limits. Matrix interference is suspected. All samples with results greater than the reporting limit for the affected compounds have been qualified accordingly.

Case Narrative
Lab # 52513

Chromium, Hexavalent: The MS/D2001871 (52513-004) did not meet the acceptance criteria. The percent recovery was acceptable in the associated CRM/CRMD. The results for the ORP and pH analysis show that the sample exhibits a reducing nature therefore resulting in poor spike recovery. The sample has been qualified accordingly.

Other

No other exceptions noted.
VPH: The trap used for VPH analysis is a Tekmar STRATUM Purge Trap 9. The column used for VPH analysis is a Restek Rtx-502.2, 105m, 0.53mmID, and 3um df.

MassDEP Analytical Protocol Certification Form Questions A through I

No explanation is needed for Questions A through I answered in the affirmative.
Question H: See surrogate section above. Box H is "No."

Absolute Resource associates

Quantitation by Quadratic Equation
Lab # 52513

VOC: Quantitation of the following compounds was based on a quadratic equation:

Acetone

2-Hexanone

Bromoform

hexachlorobutadiene

SVOC: Quantitation of the following compounds was based on a quadratic equation:

2-methylnaphthalene

benzo(k)fluoranthene

indeno(1,2,3-cd)pyrene

dibenzo(a,h)anthracene

benzo(g,h,i)perylene

GLOSSARY

%R	Percent Recovery
BLK	Blank (Method Blank, Preparation Blank)
CCB	Continuing Calibration Blank
CCV	Continuing Calibration Verification
CRM	Certified Reference Material (associated with solid Metals samples)
CRMD	Certified Reference Material Duplicate (associated with solid Metals samples)
Dil'n	Dilution
DL	Detection Limit
DUP	Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
LOD	Limit of Detection
LOQ	Limit of Quantitation
MB	Methanol Blank (associated with solid VOC samples)
MLCS	Methanol Laboratory Control Sample (associated with solid VOC samples)
MLCSD	Methanol Laboratory Control Sample Duplicate (associated with solid VOC samples)
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PB	Preparation Blank
QC	Quality Control
RL	Reporting Limit
RPD	Relative Percent Difference
SUR	Surrogate

Method	QC ID	Parameter	Associated Sample		Result	Units	Amt Added	%R	Limits		RPD	RPD Limit
MA VPH	MB12628	Unadjusted C5-C8 Aliphatics		<	5.0	ug/g						
		Unadjusted C9-C12 Aliphatics		<	5.0	ug/g						
		methyl t-butyl ether (MTBE)		<	0.10	ug/g						
		benzene		<	0.10	ug/g						
		toluene		<	0.10	ug/g						
		ethylbenzene		<	0.10	ug/g						
		m&p-xylenes		<	0.10	ug/g						
		o-xylene		<	0.10	ug/g						
		naphthalene		<	0.25	ug/g						
		C5-C8 Aliphatics		<	5.0	ug/g						
		C9-C12 Aliphatics		<	5.0	ug/g						
		C9-C10 Aromatics		<	5.0	ug/g						
		2,5-dibromotoluene as Aromatic SUR			113	%			70	130		
		2,5-dibromotoluene as Aliphatic SUR			112	%			70	130		
		a,a,a-trifluorotoluene SUR			90	%			70	130		
MA VPH	MLCS12628	Unadjusted C5-C8 Aliphatics			14	ug/g	15	93	70	130		
		Unadjusted C9-C12 Aliphatics			13	ug/g	15	89	70	130		
		methyl t-butyl ether (MTBE)			4.6	ug/g	5	92	70	130		
		benzene			4.8	ug/g	5	97	70	130		
		toluene			4.8	ug/g	5	95	70	130		
		ethylbenzene			4.8	ug/g	5	96	70	130		
		m&p-xylenes			9.7	ug/g	10	97	70	130		
		o-xylene			4.8	ug/g	5	96	70	130		
		naphthalene			5.0	ug/g	5	100	70	130		
		C5-C8 Aliphatics		<	5.0	ug/g			70	130		
		C9-C12 Aliphatics		<	5.0	ug/g			70	130		
		C9-C10 Aromatics			5.1	ug/g	5	102	70	130		
		2,5-dibromotoluene as Aromatic SUR			111	%			70	130		
		2,5-dibromotoluene as Aliphatic SUR			112	%			70	130		
		a,a,a-trifluorotoluene SUR			86	%			70	130		
MA VPH	MLCSD12628	Unadjusted C5-C8 Aliphatics			14	ug/g	15	93	70	130	0	25
		Unadjusted C9-C12 Aliphatics			14	ug/g	15	90	70	130	2	25
		methyl t-butyl ether (MTBE)			4.7	ug/g	5	93	70	130	1	25
		benzene			4.9	ug/g	5	99	70	130	2	25
		toluene			4.9	ug/g	5	98	70	130	3	25
		ethylbenzene			4.9	ug/g	5	99	70	130	3	25
		m&p-xylenes			10.0	ug/g	10	100	70	130	3	25
		o-xylene			4.9	ug/g	5	99	70	130	2	25
		naphthalene			5.1	ug/g	5	102	70	130	2	25
		C5-C8 Aliphatics		<	5.0	ug/g			70	130		25
		C9-C12 Aliphatics		<	5.0	ug/g			70	130		25
		C9-C10 Aromatics			5.2	ug/g	5	103	70	130	1	25
		2,5-dibromotoluene as Aromatic SUR			99	%			70	130		
		2,5-dibromotoluene as Aliphatic SUR			100	%			70	130		
		a,a,a-trifluorotoluene SUR			90	%			70	130		

Method	QC ID	Parameter	Associated Sample		Result	Units	Amt Added	%R	Limits	RPD	RPD Limit
SW5035A8260D	MB12627	dichlorodifluoromethane		<	0.10	ug/g					
		chloromethane		<	0.10	ug/g					
		vinyl chloride		<	0.10	ug/g					
		bromomethane		<	0.25	ug/g					
		chloroethane		<	0.10	ug/g					
		trichlorofluoromethane		<	0.10	ug/g					
		diethyl ether		<	0.50	ug/g					
		acetone		<	2.5	ug/g					
		1,1-dichloroethene		<	0.10	ug/g					
		methylene chloride		<	0.25	ug/g					
		carbon disulfide		<	0.10	ug/g					
		methyl t-butyl ether (MTBE)		<	0.10	ug/g					
		trans-1,2-dichloroethene		<	0.10	ug/g					
		isopropyl ether (DIPE)		<	0.10	ug/g					
		ethyl t-butyl ether (ETBE)		<	0.10	ug/g					
		1,1-dichloroethane		<	0.10	ug/g					
		t-butanol (TBA)		<	2.5	ug/g					
		2-butanone (MEK)		<	0.30	ug/g					
		2,2-dichloropropane		<	0.10	ug/g					
		cis-1,2-dichloroethene		<	0.10	ug/g					
		chloroform		<	0.10	ug/g					
		bromochloromethane		<	0.10	ug/g					
		tetrahydrofuran (THF)		<	0.50	ug/g					
		1,1,1-trichloroethane		<	0.10	ug/g					
		1,1-dichloropropene		<	0.10	ug/g					
		t-amyl-methyl ether (TAME)		<	0.10	ug/g					
		carbon tetrachloride		<	0.10	ug/g					
		1,2-dichloroethane		<	0.10	ug/g					
		benzene		<	0.10	ug/g					
		trichloroethene		<	0.10	ug/g					
		1,2-dichloropropane		<	0.10	ug/g					
		bromodichloromethane		<	0.10	ug/g					
		1,4-dioxane		<	2.5	ug/g					
		dibromomethane		<	0.10	ug/g					
		4-methyl-2-pentanone (MIBK)		<	0.45	ug/g					
		cis-1,3-dichloropropene		<	0.10	ug/g					
		toluene		<	0.10	ug/g					
		trans-1,3-dichloropropene		<	0.10	ug/g					
		2-hexanone		<	0.50	ug/g					
		1,1,2-trichloroethane		<	0.10	ug/g					
		1,3-dichloropropane		<	0.10	ug/g					
		tetrachloroethene		<	0.10	ug/g					
		dibromochloromethane		<	0.10	ug/g					
		1,2-dibromoethane (EDB)		<	0.10	ug/g					
		chlorobenzene		<	0.10	ug/g					
		1,1,1,2-tetrachloroethane		<	0.10	ug/g					
		ethylbenzene		<	0.10	ug/g					
		m&p-xylenes		<	0.10	ug/g					
		o-xylene		<	0.10	ug/g					

Method	QC ID	Parameter	Associated Sample		Result	Units	Amt Added	%R	Limits		RPD	RPD Limit
SW5035A8260D	MB12627	styrene		<	0.10	ug/g						
		bromoform		<	0.10	ug/g						
		isopropylbenzene		<	0.10	ug/g						
		1,1,2,2-tetrachloroethane		<	0.10	ug/g						
		1,2,3-trichloropropane		<	0.10	ug/g						
		n-propylbenzene		<	0.10	ug/g						
		bromobenzene		<	0.10	ug/g						
		1,3,5-trimethylbenzene		<	0.10	ug/g						
		2-chlorotoluene		<	0.10	ug/g						
		4-chlorotoluene		<	0.10	ug/g						
		tert-butylbenzene		<	0.10	ug/g						
		1,2,4-trimethylbenzene		<	0.10	ug/g						
		sec-butylbenzene		<	0.10	ug/g						
		1,3-dichlorobenzene		<	0.10	ug/g						
		4-isopropyltoluene		<	0.10	ug/g						
		1,4-dichlorobenzene		<	0.10	ug/g						
		1,2-dichlorobenzene		<	0.10	ug/g						
		n-butylbenzene		<	0.10	ug/g						
		1,2-dibromo-3-chloropropane (DBCP)		<	0.10	ug/g						
		1,2,4-trichlorobenzene		<	0.10	ug/g						
		hexachlorobutadiene		<	0.10	ug/g						
		naphthalene		<	0.25	ug/g						
		1,2,3-trichlorobenzene		<	0.10	ug/g						
		dibromofluoromethane SUR			100	%			78	114		
		toluene-D8 SUR			104	%			88	110		
		4-bromofluorobenzene SUR			105	%			86	115		
		a,a,a-trifluorotoluene SUR			122	%			70	130		

Method	QC ID	Parameter	Associated Sample		Result	Units	Amt Added	%R		Limits		RPD	RPD Limit
SW5035A8260D	MLCS12627	dichlorodifluoromethane			0.79	ug/g	1	79		70	130		
		chloromethane			0.95	ug/g	1	95		70	130		
		vinyl chloride			0.93	ug/g	1	93		70	130		
		bromomethane			0.64	ug/g	1	64	*	70	130		
		chloroethane			1.0	ug/g	1	104		70	130		
		trichlorofluoromethane			1.1	ug/g	1	106		70	130		
		diethyl ether			0.99	ug/g	1	99		70	130		
		acetone		<	2.5	ug/g	1	120					
		1,1-dichloroethene			0.97	ug/g	1	97		70	130		
		methylene chloride			1.1	ug/g	1	106		70	130		
		carbon disulfide			0.94	ug/g	1	94		70	130		
		methyl t-butyl ether (MTBE)			0.96	ug/g	1	96		70	130		
		trans-1,2-dichloroethene			1.0	ug/g	1	102		70	130		
		isopropyl ether (DIPE)			1.0	ug/g	1	101		70	130		
		ethyl t-butyl ether (ETBE)			0.98	ug/g	1	98		70	130		
		1,1-dichloroethane			1.0	ug/g	1	103		70	130		
		t-butanol (TBA)			6.6	ug/g	5	132	*	70	130		
		2-butanone (MEK)			1.2	ug/g	1	119		70	130		
		2,2-dichloropropane			0.90	ug/g	1	90		70	130		
		cis-1,2-dichloroethene			1.1	ug/g	1	106		70	130		
		chloroform			1.0	ug/g	1	102		70	130		
		bromochloromethane			0.98	ug/g	1	98		70	130		
		tetrahydrofuran (THF)			1.1	ug/g	1	106		70	130		
		1,1,1-trichloroethane			0.99	ug/g	1	99		70	130		
		1,1-dichloropropene			0.95	ug/g	1	95		70	130		
		t-amyl-methyl ether (TAME)			0.92	ug/g	1	92		70	130		
		carbon tetrachloride			0.98	ug/g	1	98		70	130		
		1,2-dichloroethane			0.97	ug/g	1	97		70	130		
		benzene			0.99	ug/g	1	99		70	130		
		trichloroethene			1.0	ug/g	1	101		70	130		
		1,2-dichloropropane			0.99	ug/g	1	99		70	130		
		bromodichloromethane			1.00	ug/g	1	100		70	130		
		1,4-dioxane		<	2.5	ug/g	2	117		70	130		
		dibromomethane			1.1	ug/g	1	105		70	130		
		4-methyl-2-pentanone (MIBK)			1.1	ug/g	1	109		70	130		
		cis-1,3-dichloropropene			1.0	ug/g	1	101		70	130		
		toluene			0.99	ug/g	1	99		70	130		
		trans-1,3-dichloropropene			0.98	ug/g	1	98		70	130		
		2-hexanone			1.2	ug/g	1	117		70	130		
		1,1,2-trichloroethane			1.1	ug/g	1	107		70	130		
		1,3-dichloropropane			1.0	ug/g	1	102		70	130		
		tetrachloroethene			1.0	ug/g	1	103		70	130		
		dibromochloromethane			0.98	ug/g	1	98		70	130		
		1,2-dibromoethane (EDB)			1.0	ug/g	1	104		70	130		
		chlorobenzene			1.0	ug/g	1	103		70	130		
		1,1,1,2-tetrachloroethane			1.0	ug/g	1	102		70	130		
		ethylbenzene			1.0	ug/g	1	100		70	130		
		m&p-xylenes			2.1	ug/g	2	107		70	130		
		o-xylene			1.1	ug/g	1	106		70	130		

Method	QC ID	Parameter	Associated Sample	Result	Units	Amt Added	%R		Limits		RPD	RPD Limit
SW5035A8260D	MLCS12627	styrene		1.1	ug/g	1	106		70	130		
		bromoform		1.1	ug/g	1	110		70	130		
		isopropylbenzene		1.1	ug/g	1	108		70	130		
		1,1,2,2-tetrachloroethane		1.0	ug/g	1	104		70	130		
		1,2,3-trichloropropane		1.1	ug/g	1	107		70	130		
		n-propylbenzene		0.98	ug/g	1	98		70	130		
		bromobenzene		1.1	ug/g	1	106		70	130		
		1,3,5-trimethylbenzene		1.1	ug/g	1	107		70	130		
		2-chlorotoluene		1.0	ug/g	1	102		70	130		
		4-chlorotoluene		1.1	ug/g	1	106		70	130		
		tert-butylbenzene		0.97	ug/g	1	97		70	130		
		1,2,4-trimethylbenzene		1.0	ug/g	1	101		70	130		
		sec-butylbenzene		0.95	ug/g	1	95		70	130		
		1,3-dichlorobenzene		1.1	ug/g	1	106		70	130		
		4-isopropyltoluene		1.0	ug/g	1	104		70	130		
		1,4-dichlorobenzene		1.1	ug/g	1	107		70	130		
		1,2-dichlorobenzene		1.1	ug/g	1	107		70	130		
		n-butylbenzene		1.0	ug/g	1	101		70	130		
		1,2-dibromo-3-chloropropane (DBCP)		1.1	ug/g	1	112		70	130		
		1,2,4-trichlorobenzene		1.0	ug/g	1	103		70	130		
		hexachlorobutadiene		1.1	ug/g	1	107		70	130		
		naphthalene		1.1	ug/g	1	109		70	130		
		1,2,3-trichlorobenzene		1.1	ug/g	1	108		70	130		
		dibromofluoromethane SUR		87	%				78	114		
		toluene-D8 SUR		104	%				88	110		
		4-bromofluorobenzene SUR		118	%			*	86	115		
		a,a,a-trifluorotoluene SUR		102	%				70	130		

Method	QC ID	Parameter	Associated Sample		Result	Units	Amt Added	%R	Limits		RPD	RPD Limit
SW5035A8260D	MLCSD12627	dichlorodifluoromethane			0.82	ug/g	1	82	70	130	4	30
		chloromethane			1.0	ug/g	1	101	70	130	6	30
		vinyl chloride			0.94	ug/g	1	94	70	130	1	30
		bromomethane			0.86	ug/g	1	86	70	130	30	30
		chloroethane			1.1	ug/g	1	107	70	130	3	30
		trichlorofluoromethane			1.1	ug/g	1	108	70	130	3	30
		diethyl ether			1.0	ug/g	1	100	70	130	1	30
		acetone		<	2.5	ug/g	1	109			9	30
		1,1-dichloroethene			0.98	ug/g	1	98	70	130	1	30
		methylene chloride			1.1	ug/g	1	111	70	130	4	30
		carbon disulfide			0.96	ug/g	1	96	70	130	1	30
		methyl t-butyl ether (MTBE)			0.97	ug/g	1	97	70	130	1	30
		trans-1,2-dichloroethene			1.0	ug/g	1	104	70	130	3	30
		isopropyl ether (DIPE)			1.0	ug/g	1	101	70	130	0	30
		ethyl t-butyl ether (ETBE)			1.0	ug/g	1	100	70	130	2	30
		1,1-dichloroethane			1.0	ug/g	1	103	70	130	0	30
		t-butanol (TBA)			6.1	ug/g	5	122	70	130	8	30
		2-butanone (MEK)			1.1	ug/g	1	113	70	130	5	30
		2,2-dichloropropane			0.91	ug/g	1	91	70	130	2	30
		cis-1,2-dichloroethene			1.1	ug/g	1	107	70	130	1	30
		chloroform			1.1	ug/g	1	106	70	130	3	30
		bromochloromethane			1.0	ug/g	1	103	70	130	5	30
		tetrahydrofuran (THF)			1.0	ug/g	1	102	70	130	4	30
		1,1,1-trichloroethane			1.0	ug/g	1	100	70	130	1	30
		1,1-dichloropropene			1.00	ug/g	1	100	70	130	4	30
		t-amyl-methyl ether (TAME)			0.93	ug/g	1	93	70	130	1	30
		carbon tetrachloride			0.99	ug/g	1	99	70	130	2	30
		1,2-dichloroethane			1.00	ug/g	1	100	70	130	3	30
		benzene			1.0	ug/g	1	101	70	130	3	30
		trichloroethene			1.0	ug/g	1	103	70	130	2	30
		1,2-dichloropropane			1.0	ug/g	1	101	70	130	1	30
		bromodichloromethane			1.0	ug/g	1	101	70	130	2	30
		1,4-dioxane		<	2.5	ug/g	2	115	70	130	2	30
		dibromomethane			1.1	ug/g	1	106	70	130	1	30
		4-methyl-2-pentanone (MIBK)			1.1	ug/g	1	105	70	130	3	30
		cis-1,3-dichloropropene			1.0	ug/g	1	103	70	130	2	30
		toluene			1.0	ug/g	1	101	70	130	2	30
		trans-1,3-dichloropropene			1.0	ug/g	1	101	70	130	3	30
		2-hexanone			1.1	ug/g	1	109	70	130	7	30
		1,1,2-trichloroethane			1.1	ug/g	1	110	70	130	3	30
		1,3-dichloropropane			1.0	ug/g	1	101	70	130	0	30
		tetrachloroethene			1.0	ug/g	1	103	70	130	0	30
		dibromochloromethane			1.00	ug/g	1	100	70	130	2	30
		1,2-dibromoethane (EDB)			1.0	ug/g	1	103	70	130	1	30
		chlorobenzene			1.0	ug/g	1	103	70	130	1	30
		1,1,1,2-tetrachloroethane			1.0	ug/g	1	102	70	130	1	30
		ethylbenzene			1.00	ug/g	1	100	70	130	1	30
		m&p-xylenes			2.1	ug/g	2	107	70	130	1	30
		o-xylene			1.1	ug/g	1	107	70	130	1	30

Method	QC ID	Parameter	Associated Sample	Result	Units	Amt Added	%R		Limits		RPD	RPD Limit
SW5035A8260D	MLCSD12627	styrene		1.1	ug/g	1	107		70	130	1	30
		bromoform		1.1	ug/g	1	111		70	130	1	30
		isopropylbenzene		1.1	ug/g	1	109		70	130	1	30
		1,1,2,2-tetrachloroethane		1.0	ug/g	1	102		70	130	2	30
		1,2,3-trichloropropane		1.0	ug/g	1	104		70	130	2	30
		n-propylbenzene		0.98	ug/g	1	98		70	130	0	30
		bromobenzene		1.0	ug/g	1	104		70	130	2	30
		1,3,5-trimethylbenzene		1.1	ug/g	1	106		70	130	1	30
		2-chlorotoluene		1.0	ug/g	1	101		70	130	1	30
		4-chlorotoluene		1.1	ug/g	1	107		70	130	1	30
		tert-butylbenzene		0.95	ug/g	1	95		70	130	2	30
		1,2,4-trimethylbenzene		1.0	ug/g	1	101		70	130	0	30
		sec-butylbenzene		0.94	ug/g	1	94		70	130	1	30
		1,3-dichlorobenzene		1.1	ug/g	1	106		70	130	0	30
		4-isopropyltoluene		1.0	ug/g	1	104		70	130	0	30
		1,4-dichlorobenzene		1.1	ug/g	1	107		70	130	0	30
		1,2-dichlorobenzene		1.1	ug/g	1	106		70	130	1	30
		n-butylbenzene		1.00	ug/g	1	100		70	130	2	30
		1,2-dibromo-3-chloropropane (DBCP)		1.0	ug/g	1	105		70	130	6	30
		1,2,4-trichlorobenzene		1.0	ug/g	1	102		70	130	1	30
		hexachlorobutadiene		1.0	ug/g	1	104		70	130	2	30
		naphthalene		1.0	ug/g	1	103		70	130	6	30
		1,2,3-trichlorobenzene		1.0	ug/g	1	103		70	130	4	30
		dibromofluoromethane SUR		88	%				78	114		
		toluene-D8 SUR		106	%				88	110		
		4-bromofluorobenzene SUR		116	%			*	86	115		
		a,a,a-trifluorotoluene SUR		109	%				70	130		

Method	QC ID	Parameter	Associated Sample		Result	Units	Amt Added	%R	Limits		RPD	RPD Limit
MA EPH	BLK12630	naphthalene		<	0.20	ug/g						
		2-methylnaphthalene		<	0.20	ug/g						
		phenanthrene		<	0.20	ug/g						
		acenaphthene		<	0.20	ug/g						
		acenaphthylene		<	0.20	ug/g						
		fluorene		<	0.20	ug/g						
		anthracene		<	0.20	ug/g						
		fluoranthene		<	0.20	ug/g						
		pyrene		<	0.20	ug/g						
		benzo(a)anthracene		<	0.20	ug/g						
		chrysene		<	0.20	ug/g						
		benzo(b)fluoranthene		<	0.20	ug/g						
		benzo(k)fluoranthene		<	0.20	ug/g						
		benzo(a)pyrene		<	0.20	ug/g						
		indeno(1,2,3-cd)pyrene		<	0.20	ug/g						
		dibenzo(a,h)anthracene		<	0.20	ug/g						
		benzo(g,h,i)perylene		<	0.20	ug/g						
		Unadjusted C11-C22 Aromatics		<	20	ug/g						
		C9-C18 Aliphatics		<	20	ug/g						
		C19-C36 Aliphatics		<	20	ug/g						
		C11-C22 Aromatics		<	20	ug/g						
		1-chloro-octadecane SUR			52	%			40	140		
		o-terphenyl SUR			59	%			40	140		
		2-fluorobiphenyl SUR			66	%			40	140		
		2-bromonaphthalene SUR			64	%			40	140		

Method	QC ID	Parameter	Associated Sample		Result	Units	Amt Added	%R	Limits		RPD	RPD Limit
MA EPH	LCS12630	naphthalene			3.1	ug/g	6	51	40	140		
		2-methylnaphthalene			3.1	ug/g	6	52	40	140		
		phenanthrene			3.6	ug/g	6	60	40	140		
		acenaphthene			3.3	ug/g	6	56	40	140		
		acenaphthylene			3.3	ug/g	6	54	40	140		
		fluorene			3.6	ug/g	6	60	40	140		
		anthracene			3.5	ug/g	6	59	40	140		
		fluoranthene			4.0	ug/g	6	66	40	140		
		pyrene			4.2	ug/g	6	70	40	140		
		benzo(a)anthracene			4.3	ug/g	6	71	40	140		
		chrysene			4.4	ug/g	6	73	40	140		
		benzo(b)fluoranthene			4.4	ug/g	6	73	40	140		
		benzo(k)fluoranthene			3.9	ug/g	6	65	40	140		
		benzo(a)pyrene			4.1	ug/g	6	68	40	140		
		indeno(1,2,3-cd)pyrene			4.4	ug/g	6	73	40	140		
		dibenzo(a,h)anthracene			4.4	ug/g	6	73	40	140		
		benzo(g,h,i)perylene			4.4	ug/g	6	73	40	140		
		Unadjusted C11-C22 Aromatics			65	ug/g	102	64	40	140		
		C9-C18 Aliphatics		<	20	ug/g	36	44	40	140		
		C19-C36 Aliphatics			49	ug/g	48	102	40	140		
		C11-C22 Aromatics		<	20	ug/g			40	140		
		1-chloro-octadecane SUR			52	%			40	140		
		o-terphenyl SUR			57	%			40	140		
		2-fluorobiphenyl SUR			64	%			40	140		
		2-bromonaphthalene SUR			61	%			40	140		

Method	QC ID	Parameter	Associated Sample		Result	Units	Amt Added	%R	Limits		RPD	RPD Limit
MA EPH	LCSD12630	naphthalene			2.9	ug/g	6	48	40	140	6	25
		2-methylnaphthalene			2.9	ug/g	6	49	40	140	6	25
		phenanthrene			3.5	ug/g	6	59	40	140	2	25
		acenaphthene			3.3	ug/g	6	55	40	140	1	25
		acenaphthylene			3.1	ug/g	6	52	40	140	4	25
		fluorene			3.6	ug/g	6	59	40	140	1	25
		anthracene			3.5	ug/g	6	59	40	140	0	25
		fluoranthene			4.1	ug/g	6	68	40	140	3	25
		pyrene			4.0	ug/g	6	66	40	140	5	25
		benzo(a)anthracene			4.2	ug/g	6	70	40	140	2	25
		chrysene			4.3	ug/g	6	71	40	140	2	25
		benzo(b)fluoranthene			4.1	ug/g	6	68	40	140	8	25
		benzo(k)fluoranthene			4.2	ug/g	6	70	40	140	8	25
		benzo(a)pyrene			4.1	ug/g	6	68	40	140	0	25
		indeno(1,2,3-cd)pyrene			4.2	ug/g	6	71	40	140	4	25
		dibenzo(a,h)anthracene			4.2	ug/g	6	71	40	140	3	25
		benzo(g,h,i)perylene			4.1	ug/g	6	69	40	140	6	25
		Unadjusted C11-C22 Aromatics			67	ug/g	102	66	40	140	3	25
		C9-C18 Aliphatics		<	20	ug/g	36	53	40	140	18	25
		C19-C36 Aliphatics			54	ug/g	48	112	40	140	9	25
		C11-C22 Aromatics		<	20	ug/g			40	140		25
		1-chloro-octadecane SUR			63	%			40	140		
		o-terphenyl SUR			60	%			40	140		
		2-fluorobiphenyl SUR			60	%			40	140		
		2-bromonaphthalene SUR			59	%			40	140		

Method	QC ID	Parameter	Associated Sample		Result	Units	Amt Added	%R	Limits		RPD	RPD Limit
SW3051A6020A	BLK12629	Silver		<	0.025	mg/L						
		Arsenic		<	0.025	mg/L						
		Barium		<	0.050	mg/L						
		Beryllium		<	0.0050	mg/L						
		Cadmium		<	0.0050	mg/L						
		Chromium		<	0.050	mg/L						
		Nickel		<	0.050	mg/L						
		Lead		<	0.025	mg/L						
		Antimony		<	0.0050	mg/L						
		Selenium		<	0.050	mg/L						
		Thallium		<	0.0050	mg/L						
		Vanadium		<	0.050	mg/L						
		Zinc		<	0.050	mg/L						
SW3051A6020A	CRM12629	Silver			44.2	ug/g	53.8		31.9	59.7		
		Arsenic			153	ug/g	219		129	240		
		Barium			586	ug/g	788		509	867		
		Beryllium			183	ug/g	247		160	272		
		Cadmium			141	ug/g	175		111	192		
		Chromium			273	ug/g	375		223	414		
		Nickel			232	ug/g	318		193	358		
		Lead			254	ug/g	321		207	353		
		Antimony			82.9	ug/g	159		15.9	180		
		Selenium			97.8	ug/g	145		78.5	160		
		Thallium			80.5	ug/g	98.6		53.7	111		
		Vanadium			182	ug/g	267		168	294		
		Zinc			215	ug/g	311		190	352		
SW3051A6020A	CRMD12629	Silver			45.1	ug/g	53.8		31.9	59.7	2	20
		Arsenic			157	ug/g	219		129	240	3	20
		Barium			567	ug/g	788		509	867	3	20
		Beryllium			181	ug/g	247		160	272	1	20
		Cadmium			141	ug/g	175		111	192	0	20
		Chromium			278	ug/g	375		223	414	2	20
		Nickel			238	ug/g	318		193	358	3	20
		Lead			250	ug/g	321		207	353	2	20
		Antimony			82.8	ug/g	159		15.9	180	0	20
		Selenium			100	ug/g	145		78.5	160	2	20
		Thallium			80.8	ug/g	98.6		53.7	111	0	20
		Vanadium			185	ug/g	267		168	294	2	20
		Zinc			217	ug/g	311		190	352	1	20

Method	QC ID	Parameter	Associated Sample		Result	Units	Amt Added	%R		Limits		RPD	RPD Limit
SW3051A6020A	MS12629	Silver	52513-004		170	ug/g	155	86		75	125		
		Arsenic	52513-004		280	ug/g	310	88		75	125		
		Barium	52513-004		660	ug/g	310	122		75	125		
		Beryllium	52513-004		290	ug/g	310	92		75	125		
		Cadmium	52513-004		320	ug/g	310	103		75	125		
		Chromium	52513-004		340	ug/g	310	98		75	125		
		Nickel	52513-004		340	ug/g	310	86		75	125		
		Lead	52513-004		1200	ug/g	310.2	-7	*	75	125		
		Antimony	52513-004		340	ug/g	310	93		75	125		
		Selenium	52513-004		240	ug/g	310	79		75	125		
		Thallium	52513-004		140	ug/g	155	90		75	125		
		Vanadium	52513-004		320	ug/g	310	95		75	125		
		Zinc	52513-004		2000	ug/g	310.2	-270		75	125		
SW3051A6020A	MSD12629	Silver	52513-004		160	ug/g	155	82		75	125	4	20
		Arsenic	52513-004		290	ug/g	310	90		75	125	3	20
		Barium	52513-004		770	ug/g	310	156	*	75	125	15	20
		Beryllium	52513-004		290	ug/g	310	94		75	125	2	20
		Cadmium	52513-004		310	ug/g	310	99		75	125	4	20
		Chromium	52513-004		380	ug/g	310	111		75	125	12	20
		Nickel	52513-004		400	ug/g	310	103		75	125	15	20
		Lead	52513-004		1300	ug/g	310.2	43	*	75	125	12	20
		Antimony	52513-004		350	ug/g	310	96		75	125	3	20
		Selenium	52513-004		230	ug/g	310	74	*	75	125	7	20
		Thallium	52513-004		150	ug/g	155	95		75	125	5	20
		Vanadium	52513-004		310	ug/g	310	94		75	125	1	20
		Zinc	52513-004		2300	ug/g	310.2	-188		75	125	12	20
SW7471B	BLK12632	Mercury		<	0.14	ug/g							
SW7471B	CRM12632	Mercury			0.226	ug/g	0.221			0.0908	0.351		
SW7471B	CRMD12632	Mercury			0.216	ug/g	0.221			0.0908	0.351	4	35
SW7471B	MS12632	Mercury	52513-004		0.65	ug/g	0.405	12	*	80	120		
SW7471B	MSD12632	Mercury	52513-004		0.86	ug/g	0.405	64	*	80	120	28	35

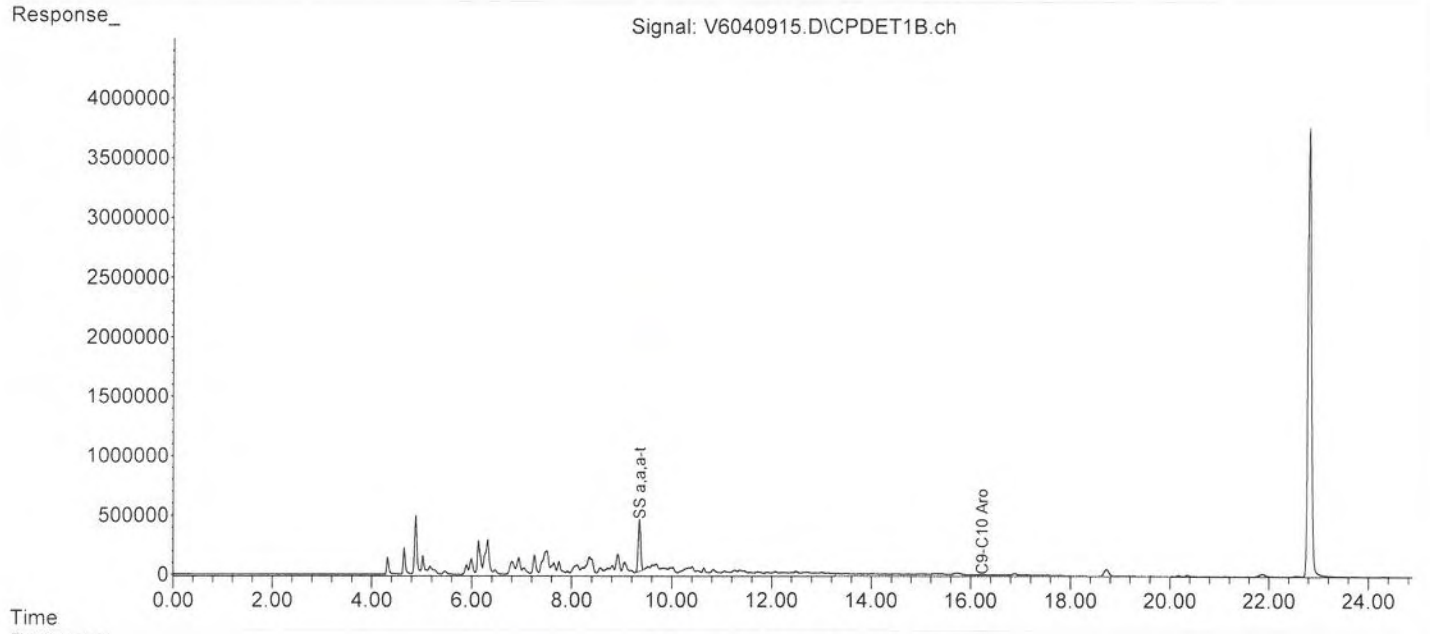
Method	QC ID	Parameter	Associated Sample		Result	Units	Amt Added	%R		Limits		RPD	RPD Limit
SW3060A7196A	CRM2001871	Chromium, Hexavalent			110	ug/g	260			93.3	350		
SW3060A7196A	CRMD2001871	Chromium, Hexavalent			100	ug/g	260			93.3	350		30
SW3060A7196A	DUP2001871	Chromium, Hexavalent	52498-013	<	0.48	ug/g							20
SW3060A7196A	MS2001871	Chromium, Hexavalent	52513-004	<	0.50	ug/g	25.01	1	*	75	125		
SW3060A7196A	MS2001871	Chromium, Hexavalent	52537-009	<	0.55	ug/g	27.25	1	*	75	125		
SW3060A7196A	MSD2001871	Chromium, Hexavalent	52513-004	<	0.49	ug/g	24.43	1	*	75	125	25	20
SW3060A7196A	MSD2001871	Chromium, Hexavalent	52537-009	<	0.55	ug/g	27.35	1	*	75	125	63	20
SW3060A7196A	PB2001871	Chromium, Hexavalent		<	0.40	ug/g							
SW9045C	DUP2001840	pH	52513-002		5.6	pH							

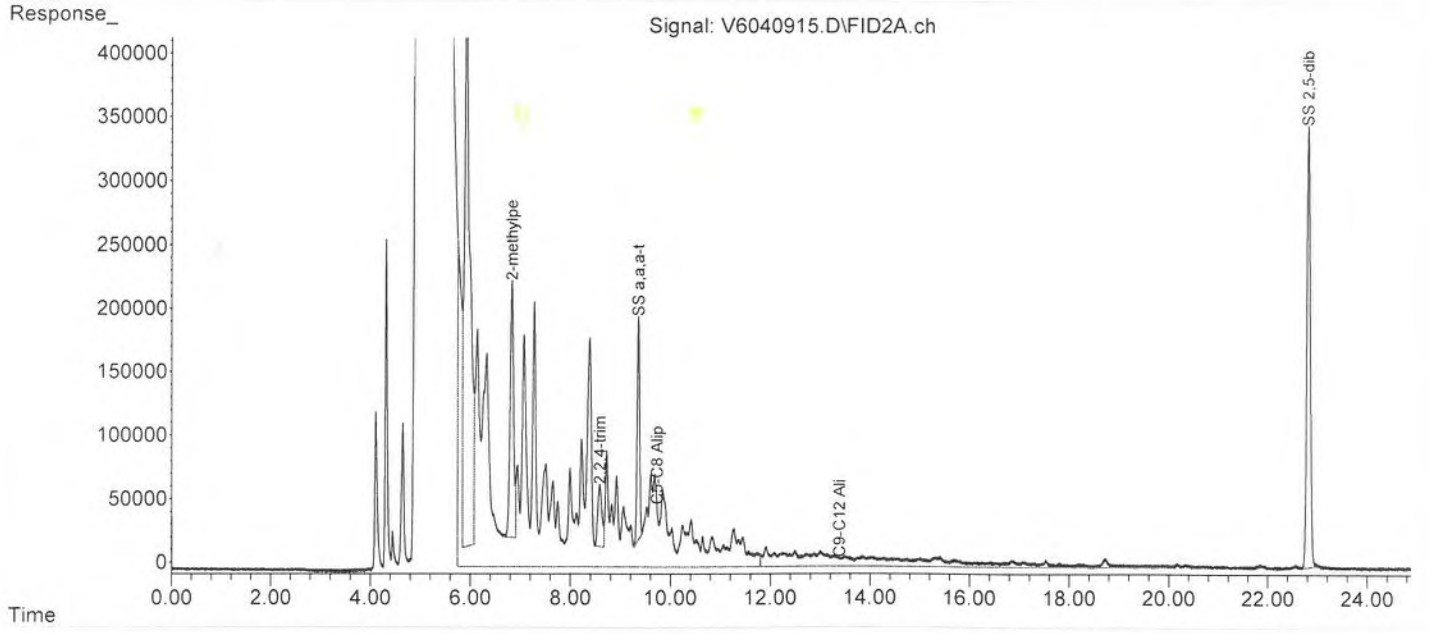
Quantitation Report ✓(QT Reviewed)

Data Path : X:\V6\2020\Apr20\040920\
Data File : V6040915.D
Signal(s) : Signal #1: CPDET1B.ch Signal #2: FID2A.ch
Acq On : 9 Apr 2020 3:49 pm
Operator : lmm
Sample : 52513-04 100uLMeOH/5mL
Misc : 100
ALS Vial : 15 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Apr 09 20:07:01 2020
Quant Method : X:\V6\methods\V6VPH040320.M
Quant Title : VOA06 MA VPH
QLast Update : Fri Apr 03 18:09:08 2020
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :



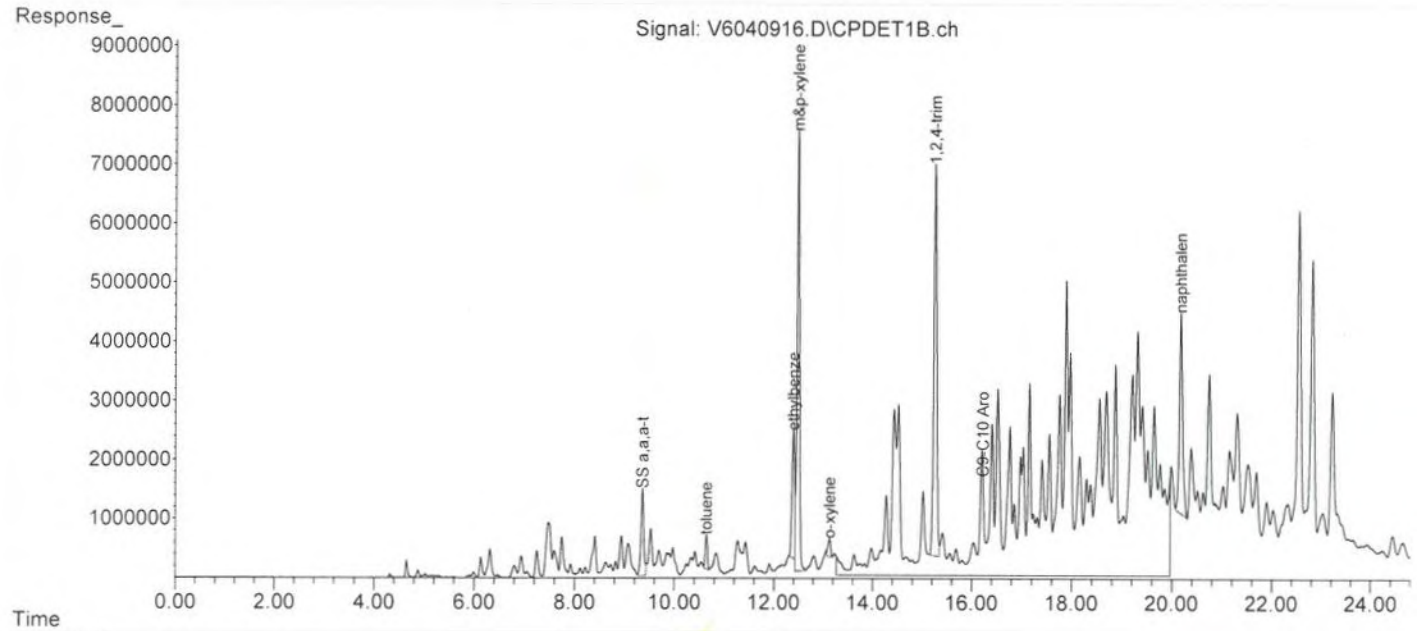


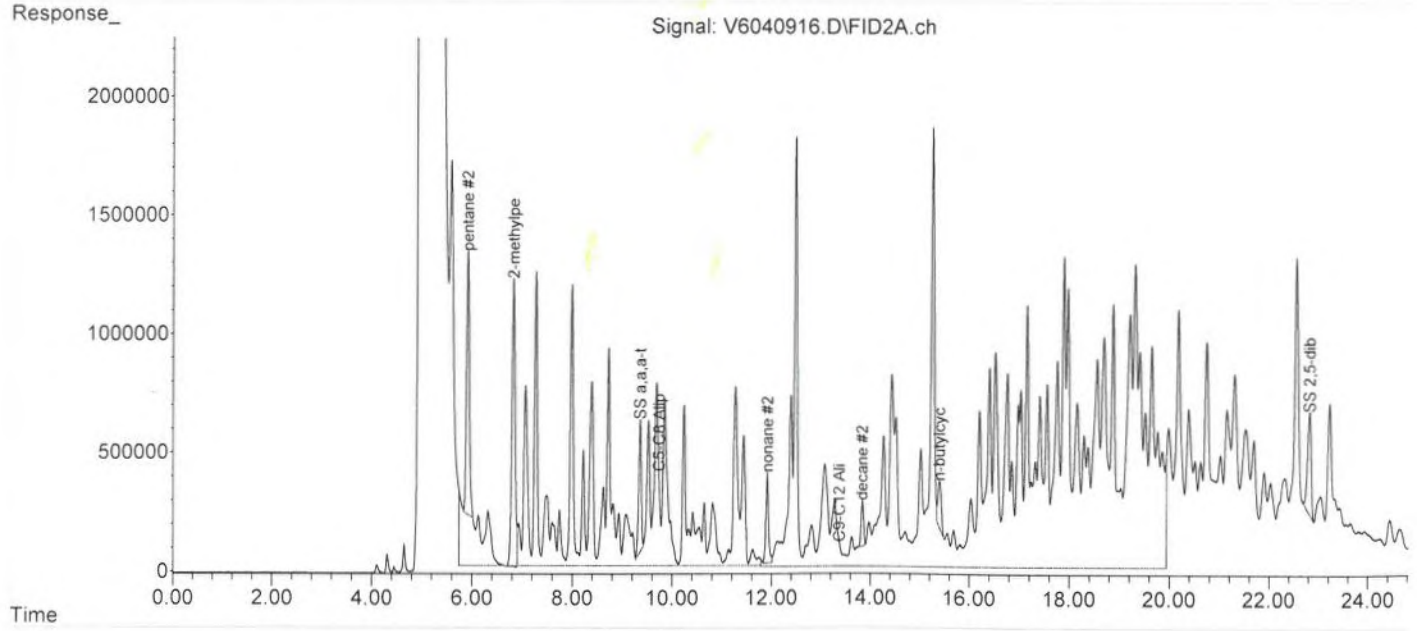
Quantitation Report ✓(QT Reviewed)

Data Path : X:\V6\2020\Apr20\040920\
Data File : V6040916.D
Signal(s) : Signal #1: CPDET1B.ch Signal #2: FID2A.ch
Acq On : 9 Apr 2020 4:19 pm
Operator : lmm
Sample : 52513-05 100uLMeOH/5mL
Misc : 100
ALS Vial : 16 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Apr 09 20:07:04 2020
Quant Method : X:\V6\methods\V6VPH040320.M
Quant Title : VOA06 MA VPH
QLast Update : Fri Apr 03 18:09:08 2020
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

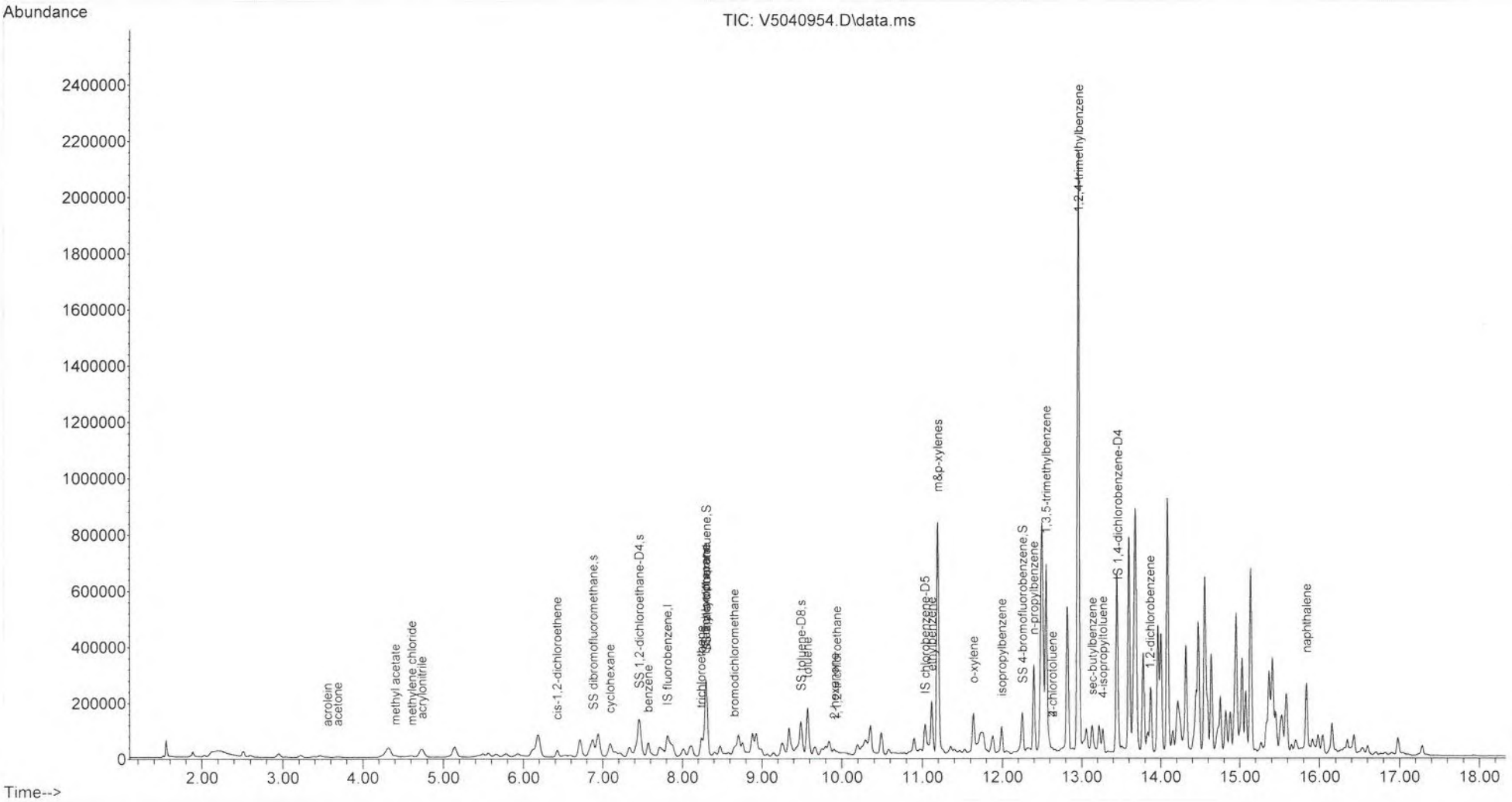




Quantitation Report ✓(QT Reviewed)

Data Path : X:\V5\2020\Apr20\040920\
Data File : V5040954.D
Acq On : 10 Apr 2020 9:36 am
Operator : lmm
Sample : 52513-08 100uLMeOH/5mL
Misc : 100
ALS Vial : 54 Sample Multiplier: 1

Quant Time: Apr 10 13:59:28 2020
Quant Method : X:\V5\methods\V58260FEB2420A.M
Quant Title : V5 Method 8260
QLast Update : Thu Apr 09 10:49:52 2020
Response via : Initial Calibration

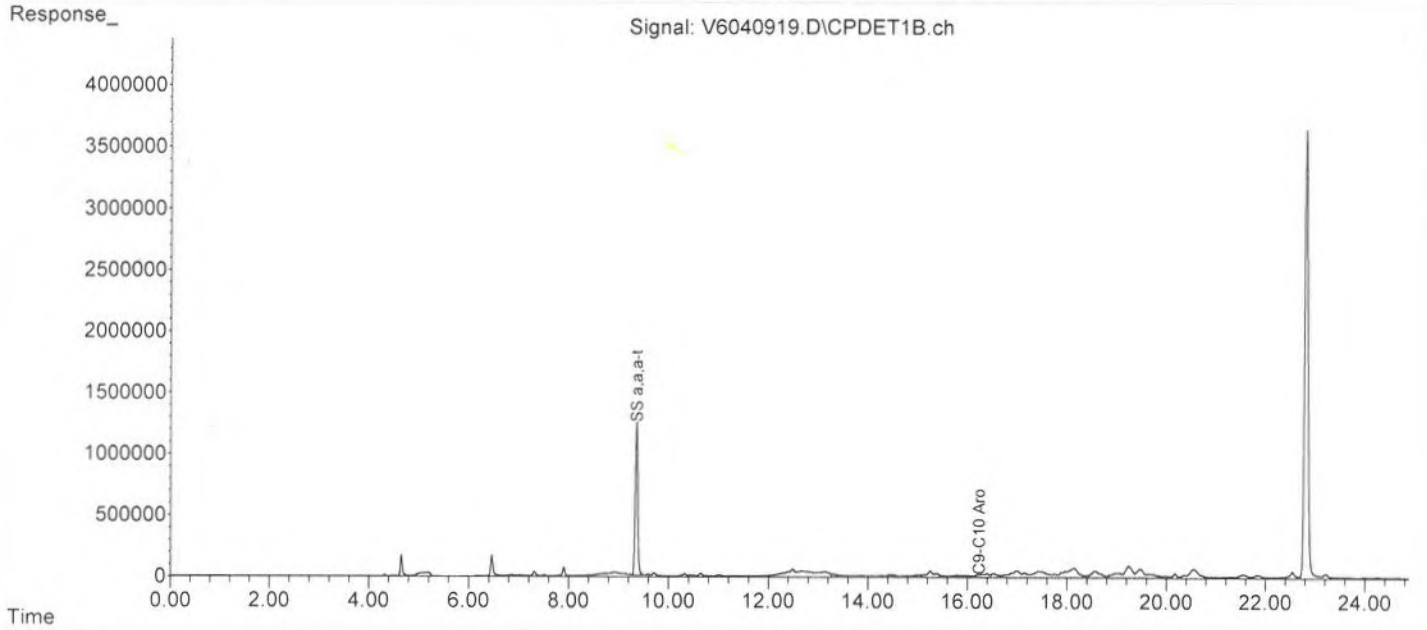


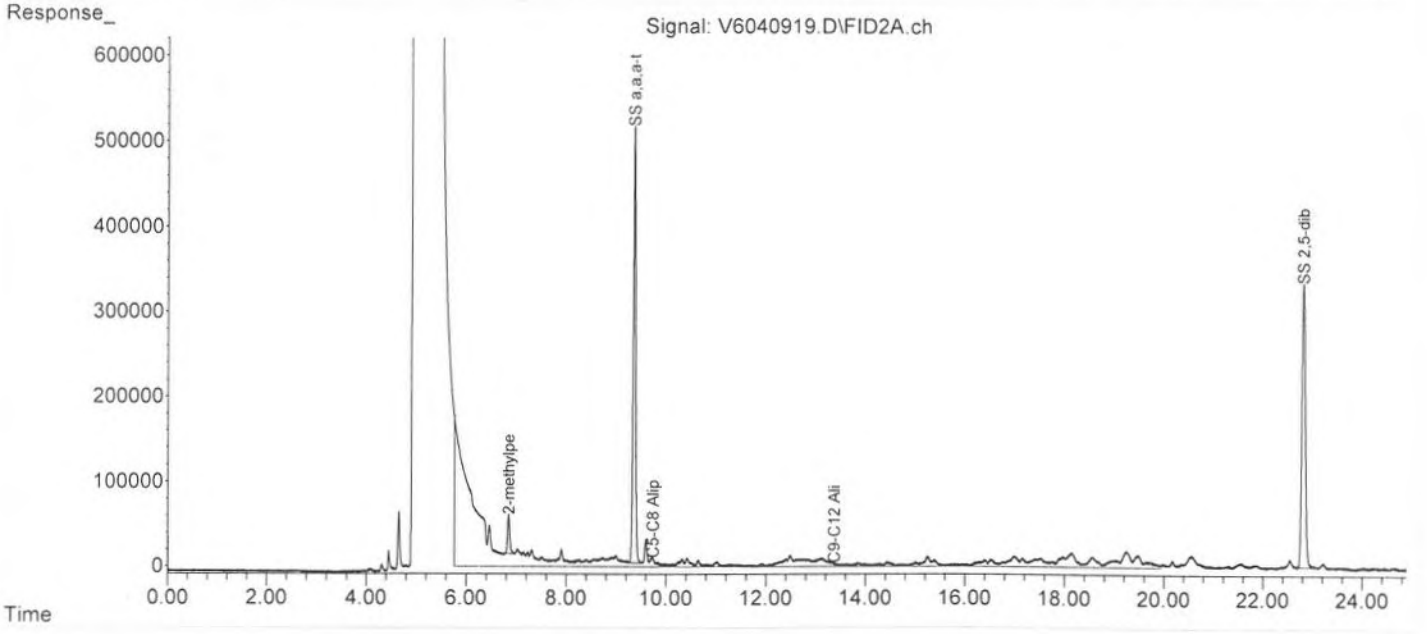
Quantitation Report ✓ (QT Reviewed)

Data Path : X:\V6\2020\Apr20\040920\
Data File : V6040919.D
Signal(s) : Signal #1: CPDET1B.ch Signal #2: FID2A.ch
Acq On : 9 Apr 2020 5:49 pm
Operator : lmm
Sample : 52513-14 100uLMeOH/5mL
Misc : 100
ALS Vial : 19 Sample Multiplier: 1

Integration File signal 1: autoint1.e
Integration File signal 2: autoint2.e
Quant Time: Apr 09 20:07:13 2020
Quant Method : X:\V6\methods\V6VPH040320.M
Quant Title : VOA06 MA VPH
QLast Update : Fri Apr 03 18:09:08 2020
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :





AROMATIC HYDROCARBON BREAKTHROUGH CALCULATION

Method: MADEP EPH 2019 Rev 2.1

	lcs12630 Aliphatic Breakthrough (%)	Acceptance Criteria	Date of Analysis
naphthalene	0.6%	<5.0%	4/9/2020
2-methylnaphthalene	0.2%	<5.0%	4/9/2020

	lcsd12630 Aliphatic Breakthrough (%)	Acceptance Criteria	Date of Analysis
naphthalene	0.4%	<5.0%	4/9/2020
2-methylnaphthalene	0.2%	<5.0%	4/9/2020

Absolute Resource associates
124 Heritage Avenue #16
Portsmouth, NH 03801
603-436-2001
absoluteresourceassociates.com

CHAIN-OF-CUSTODY RECORD AND ANALYSIS REQUEST

52513

Company Name: WESTON & SAMPSON
Company Address: 55 WALKERS BROOK DR READING MA
Report To: SARAH DESTEFANO & JILL MURPHY
Phone #: 1800 SAMPSON
Invoice to: ~~DE~~ SARAH DESTEFANO
Email: DESTEFANOS@WSEINC.COM
PO #: ~~CED~~ FRAMINGHAM BROWNFIELDS

Project Name: CEDAR WOODS
Project #: 21
Project Location: NH (MA) ME VT
Accreditation Required? N/Y:
Protocol: RCRA MCP SDWA NPDES NHDES DOD
Reporting Limits: QAPP EPA DW GW-1 S-1 Other
Quote # N/A
☐ NH Reimbursement Pricing

ANALYSIS REQUEST

Lab Sample ID (Lab Use Only)	Field ID	# CONTAINERS	Matrix: WATER	SOLID	OTHER	Preservation Method: HCl	HNO_3	H_2SO_4	NaOH	MeOH	Sampling: DATE	TIME	SAMPLER
525131-01	SB-104(0-3')			X							4/7/20	0845	
-02	SB-104(8-10')			X						X		0855	
-03 HOLD	SB-107(0-1')			X								0945	
-04	SB-107(0-3')			X						X		1000	
-05	SB-107(10-11')			X						X		1020	
-06 HOLD	SB-108(0-1')			X								1045	
-07	SB-108(0-3')			X								1050	
-08	SB-108(6-9')			X						X		1100	
-09 HOLD	SB-109(0-1')			X								1130	
-10	SB-109(0-3')			X								1140	
-11	SB-109(5-8')			X						X		1145	

Analysis	525131-01	-02	-03 HOLD	-04	-05	-06 HOLD	-07	-08	-09 HOLD	-10	-11
* ☒ VOC 8260 ☐ VOC 8260 NHDES ☐ VOC 8021VT	X							X HOLD 4/7/20			
☐ VOC 624.1 ☐ VOC BTEX MtBE only											
** ☒ VPH MADEP ☐ GRO 8015 ☐ 1,4-Dioxane		X		X	X						X
☐ VOC 524.2 ☐ VOC 524.2 NH List ☐ Gases-List:											
☐ TPH ☐ DRO 8015 ☒ EPH MADEP ☐ TPH Fingerprint	X	X	X	X	X	X	X	X	X	X	X
☐ 8270PAH ☐ 8270ABN ☐ 625.1 ☐ EDB			X	X	X	X	X	X	X	X	X
☐ 8082 PCB ☐ 8081 Pesticides ☐ 608.3 Pest/PCB											
☐ O&G 1664 ☐ Mineral O&G 1664											
☐ pH ☐ BOD ☐ Conductivity ☐ Turbidity ☐ Apparent Color											
☐ TSS ☐ TDS ☐ TS ☐ TVS ☐ Alkalinity ☐ Acidity											
☐ RCRA Metals ☐ Priority Pollutant Metals ☐ TAL Metals ☐ Hardness											
☒ Total Metals-list: MCP 14 METALS	X	X	X	X	X	X	X	X	X	X	X
☐ Dissolved Metals-list:											
☐ Ammonia ☐ COD ☐ TKN ☐ TN ☐ TON ☐ TOC ☐ Ferrous Iron											
☐ T-Phosphorus ☐ Bacteria P/A ☐ Bacteria MPN ☐ Enterococci											
☐ Cyanide ☐ Sulfide ☐ Nitrate + Nitrite ☐ Ortho P ☐ Phenols											
☐ Nitrate ☐ Nitrite ☐ Chloride ☐ Sulfate ☐ Bromide ☐ Fluoride											
☐ Corrosivity ☐ Ignitibility/FP											
☐ TCLP Metals ☐ TCLP VOC ☐ TCLP SVOC ☐ TCLP Pesticide											
Subcontract: ☐ Grain Size ☐ Herbicides ☐ Asbestos ☐ PFAS											
Cr IV		X		X				X			X
Grab (G) or Composite (C)											

TAT REQUESTED
Priority (24 hr)* ☐
Expedited (48 hr)* ☐
Standard ☐
(10 Business Days)
*Date Needed 5 DAY

See absoluteresourceassociates.com for sample acceptance policy and current accreditation lists.

SPECIAL INSTRUCTIONS
* VOCs & VPH
** VPH WITH TARGET VOCs

REPORTING INSTRUCTIONS ☒ PDF (e-mail address) MURPHYJ@WSEINC.COM
☐ HARD COPY REQUIRED ☒ EDD

RECEIVED ON ICE ☒ YES ☐ NO
TEMPERATURE 2 °C

CUSTODY RECORD
QSD-01 Revision 11/06/19

	Relinquished by Sampler:	Date	Time	Received by:	Date	Time
		4/7/20	1500		4-7	3:00
	Relinquished by:	Date	Time	Received by:	Date	Time
		4/7	16:00			
	Relinquished by:	Date	Time	Received by Laboratory:	Date	Time
					4/7/20	16:00

PAGE 2 OF 2

Absolute Resource associates

124 Heritage Avenue #16
Portsmouth, NH 03801
603-436-2001
absoluteresourceassociates.com

CHAIN-OF-CUSTODY RECORD AND ANALYSIS REQUEST

52513

Lab ID here

Company Name:

Company Address: SEE PAGE 1

Report To:

Phone #:

Invoice to:

Email: SEE PAGE 1

PO #:

Project Name:

Project #: SEE PAGE 1

Project Location: NH MA ME VT ______

Accreditation Required? N/Y: ______

Protocol: RCRA SDWA NPDES (MCP) NHDES DOD

Reporting Limits: QAPP GW-1 (S-1) EPA DW Other______

Quote # N/A

❑ NH Reimbursement Pricing

ANALYSIS REQUEST

Analysis columns: ☒ VOC 8260 ❑ VOC 8260 NHDES ❑ VOC 8260 MADEP * | ❑ VOC 624.1 ❑ VOC BTEX MtBE, only ❑ VOC 8021VT | ☒ VPH MADEP ❑ GRO 8015 ❑ 1,4-Dioxane ** | ❑ VOC 524.2 ❑ VOC 524.2 NH List ❑ Gases-List: | ❑ TPH ❑ DRO 8015 ☒ EPH MADEP ❑ TPH Fingerprint | ❑ 8270PAH ❑ 8270ABN ❑ 625.1 ❑ EDB | ❑ 8082 PCB ❑ 8081 Pesticides ❑ 608.3 Pest/PCB | ❑ O&G 1664 ❑ Mineral O&G 1664 | ❑ pH ❑ BOD ❑ Conductivity ❑ Turbidity ❑ Apparent Color | ❑ TSS ❑ TDS ❑ TS ❑ TVS ❑ Alkalinity ❑ Acidity | ❑ RCRA Metals ❑ Priority Pollutant Metals ❑ TAL Metals ❑ Hardness | ☒ Total Metals-list: MCP 14 METALS | ❑ Dissolved Metals-list: | ❑ Ammonia ❑ COD ❑ TKN ❑ TN ❑ TON ❑ TOC ❑ Ferrous Iron | ❑ T-Phosphorus ❑ Bacteria P/A ❑ Bacteria MPN ❑ Enterococci | ❑ Cyanide ❑ Sulfide ❑ Nitrate + Nitrite ❑ Ortho P ❑ Phenols | ❑ Nitrate ❑ Nitrite ❑ Chloride ❑ Sulfate ❑ Bromide ❑ Fluoride | ❑ Corrosivity ❑ Ignitibility/FP | ❑ TCLP Metals ❑ TCLP VOC ❑ TCLP SVOC ❑ TCLP Pesticide | Subcontract: ❑ Grain Size ❑ Herbicides ❑ Asbestos ❑ PFAS | Cr III | Grab (G) or Composite (C)

Lab Sample ID (Lab Use Only)	Field ID	# Containers	Matrix	Preservation Method	Date	Time	Sampler	VOC 8260	VPH MADEP	EPH MADEP	MCP 14 Metals	Cr III
52513-12 HOLD	SB-110(0-1')		Solid		4/7/20	12:45	AD HE 4/7/20			X	X	
-13	SB-110(0-3')		Solid		↓	~~12:55~~ 12:50				X	X	
-14	SB-110(5-8')		Solid		↓	12:55			X	X	X	X
-15 HOLD	SB-112(0-1')		Solid		↓	13:15				X	X	
-16	SB-112(0-3')		Solid		↓	13:20				X	X	
-17	SB-112(5-8')		Solid		↓	13:25			X	X	X	X
~~-18~~	MS-1		Solid		↓	10:15						
~~-19~~	MSD-1		Solid		↓	↓						
-18 ~~20~~	DUP-1		Solid	MeOH	↓	—			X	X	X	
-19 ~~21~~	TRIP BLANK				—	—		X				
4/7/20 AD HE												

TAT REQUESTED

Priority (24 hr)* ❑
Expedited (48 hr)* ❑
Standard (10 Business Days) ❑
*Date Needed 5 DAY

See absoluteresourceassociates.com for sample acceptance policy and current accreditation lists.

SPECIAL INSTRUCTIONS
* VOCs & VPH EXCEPT FOR TRIP BLANK
** VPH WITH TARGET VOCs

REPORTING INSTRUCTIONS ❑ PDF (e-mail address) SEE PAGE 1
❑ HARD COPY REQUIRED ❑ EDD

RECEIVED ON ICE ☒YES ❑NO
TEMPERATURE 2 °C

CUSTODY RECORD

QSD-01 Revision 11/06/19

Relinquished by	Date	Time	Received by	Date	Time
Relinquished by Sampler: [signature]	4/7/20	1500	Received by: [signature]	4-7	3:00
Relinquished by: [signature]	4-7	16:00	Received by:		
Relinquished by:			Received by Laboratory: [signature]	4/7/20	16:00

Laboratory Report

Absolute Resource associates
124 Heritage Avenue Portsmouth NH 03801

Jill Murphy
Weston & Sampson
55 Walkers Brook Drive
Reading, MA 01867

PO Number: Framingham Brownfields
Job ID: 52537
Date Received: 4/8/20

Project: Cedar Woods 2180311

Attached please find results for the analysis of the samples received on the date referenced above.

Unless otherwise noted in the attached report, the analyses performed met the requirements of Absolute Resource Associates' Quality Assurance Plan. The Standard Operating Procedures are based upon USEPA SW-846, USEPA Methods for Chemical Analysis of Water and Wastewater, Standard Methods for the Examination of Water and Wastewater and other recognized methodologies. The results contained in this report pertain only to the samples as indicated on the chain of custody.

Absolute Resource Associates maintains certification with the agencies listed below. The reported results apply to the sample(s) in the condition as received at the time the laboratory took custody. This report shall not be reproduced except in full and with approval from the laboratory. The liability of ARA is limited to the cost of the requested analyses, unless otherwise agreed upon in writing.

We appreciate the opportunity to provide laboratory services. If you have any questions regarding the enclosed report, please contact the laboratory and we will be glad to assist you.

Sincerely,
Absolute Resource Associates

Aaron DeWees
Chief Operating Officer

Date of Approval: 4/20/2020
Total number of pages: 44

Absolute Resource Associates Certifications

New Hampshire	1732	Massachusetts	M-NH902
Maine	NH902		

Project ID: Cedar Woods 2180311

Sample Association Table

Field ID	Matrix	Date-Time Sampled	Lab#	Analysis
SB-111 (0-1')	Solid	4/8/2020 9:10	52537-001	
				Antimony in solids by 6020
				Arsenic in solids by 6020
				Barium in solids by 6020
				Beryllium in solids by 6020
				Cadmium in solids by 6020
				Chromium in solids by 6020
				Combo: 14 MA MCP Metals
				EPH in solids by MADEP Method
				Lead in solids by 6020
				Mercury in solids by 7471
				Nickel in solids by 6020
				Selenium in solids by 6020
				Silver in solids by 6020
				Solid Digestion for ICP Analysis
				Thallium in solids by 6020
				Vanadium in solids by 6020
				Zinc in solids by 6020
SB-111 (0-3')	Solid	4/8/2020 9:12	52537-002	
				Antimony in solids by 6020
				Arsenic in solids by 6020
				Barium in solids by 6020
				Beryllium in solids by 6020
				Cadmium in solids by 6020
				Chromium in solids by 6020
				Combo: 14 MA MCP Metals
				EPH in solids by MADEP Method
				Field Specified Laboratory Duplicate
				Field Specified Matrix Spike
				Lead in solids by 6020
				Mercury in solids by 7471
				Nickel in solids by 6020
				Selenium in solids by 6020
				Silver in solids by 6020
				Solid Digestion for ICP Analysis
				Thallium in solids by 6020
				Vanadium in solids by 6020
				Zinc in solids by 6020

Project ID: Cedar Woods 2180311

Sample Association Table

Field ID	Matrix	Date-Time Sampled	Lab#	Analysis
SB-111 (4-7')	Solid	4/8/2020 9:15	52537-003	
				Antimony in solids by 6020
				Arsenic in solids by 6020
				Barium in solids by 6020
				Beryllium in solids by 6020
				Cadmium in solids by 6020
				Chromium in solids by 6020
				Combo: 14 MA MCP Metals
				EPH in solids by MADEP Method
				Hexavalent Chromium in solids by SW3060A7196A
				Lead in solids by 6020
				Mercury in solids by 7471
				Nickel in solids by 6020
				ORP in solids by ASTM-1498-08
				pH in solids by SW9045C
				Selenium in solids by 6020
				Silver in solids by 6020
				Solid Digestion for ICP Analysis
				Thallium in solids by 6020
				Vanadium in solids by 6020
				VPH in solids by MA DEP Method
				Zinc in solids by 6020
SB-113 (0-3')	Solid	4/8/2020 9:30	52537-004	
				Antimony in solids by 6020
				Arsenic in solids by 6020
				Barium in solids by 6020
				Beryllium in solids by 6020
				Cadmium in solids by 6020
				Chromium in solids by 6020
				Combo: 14 MA MCP Metals
				EPH in solids by MADEP Method
				Lead in solids by 6020
				Mercury in solids by 7471
				Nickel in solids by 6020
				Selenium in solids by 6020
				Silver in solids by 6020
				Solid Digestion for ICP Analysis
				Thallium in solids by 6020
				Vanadium in solids by 6020
				Zinc in solids by 6020

Project ID: Cedar Woods 2180311

Sample Association Table

Field ID	Matrix	Date-Time Sampled	Lab#	Analysis
SB-113 (5-8')	Solid	4/8/2020 9:40	52537-005	
				Antimony in solids by 6020
				Arsenic in solids by 6020
				Barium in solids by 6020
				Beryllium in solids by 6020
				Cadmium in solids by 6020
				Chromium in solids by 6020
				Combo: 14 MA MCP Metals
				EPH in solids by MADEP Method
				Hexavalent Chromium in solids by SW3060A7196A
				Lead in solids by 6020
				Mercury in solids by 7471
				Nickel in solids by 6020
				ORP in solids by ASTM-1498-08
				pH in solids by SW9045C
				Selenium in solids by 6020
				Silver in solids by 6020
				Solid Digestion for ICP Analysis
				Thallium in solids by 6020
				Vanadium in solids by 6020
				VPH in solids by MA DEP Method
				Zinc in solids by 6020
SB-115 (0-3')	Solid	4/8/2020 10:10	52537-006	
				Antimony in solids by 6020
				Arsenic in solids by 6020
				Barium in solids by 6020
				Beryllium in solids by 6020
				Cadmium in solids by 6020
				Chromium in solids by 6020
				Combo: 14 MA MCP Metals
				EPH in solids by MADEP Method
				Lead in solids by 6020
				Mercury in solids by 7471
				Nickel in solids by 6020
				Selenium in solids by 6020
				Silver in solids by 6020
				Solid Digestion for ICP Analysis
				Thallium in solids by 6020
				Vanadium in solids by 6020
				Zinc in solids by 6020

Project ID: Cedar Woods 2180311

Sample Association Table

Field ID	Matrix	Date-Time Sampled	Lab#	Analysis
SB-115 (5-8')	Solid	4/8/2020 10:20	52537-007	
				Antimony in solids by 6020
				Arsenic in solids by 6020
				Barium in solids by 6020
				Beryllium in solids by 6020
				Cadmium in solids by 6020
				Chromium in solids by 6020
				Combo: 14 MA MCP Metals
				EPH in solids by MADEP Method
				Hexavalent Chromium in solids by SW3060A7196A
				Lead in solids by 6020
				Mercury in solids by 7471
				Nickel in solids by 6020
				ORP in solids by ASTM-1498-08
				pH in solids by SW9045C
				Selenium in solids by 6020
				Silver in solids by 6020
				Solid Digestion for ICP Analysis
				Thallium in solids by 6020
				Vanadium in solids by 6020
				VPH in solids by MA DEP Method
				Zinc in solids by 6020
SB-114 (0-3')	Solid	4/8/2020 10:30	52537-008	
				Antimony in solids by 6020
				Arsenic in solids by 6020
				Barium in solids by 6020
				Beryllium in solids by 6020
				Cadmium in solids by 6020
				Chromium in solids by 6020
				Combo: 14 MA MCP Metals
				EPH in solids by MADEP Method
				Lead in solids by 6020
				Mercury in solids by 7471
				Nickel in solids by 6020
				Selenium in solids by 6020
				Silver in solids by 6020
				Solid Digestion for ICP Analysis
				Thallium in solids by 6020
				Vanadium in solids by 6020
				VPH in solids by MA DEP Method
				Zinc in solids by 6020

Project ID: Cedar Woods 2180311

Sample Association Table

Field ID	Matrix	Date-Time Sampled	Lab#	Analysis
SB-114 (5-8')	Solid	4/8/2020 10:50	52537-009	
				Antimony in solids by 6020
				Arsenic in solids by 6020
				Barium in solids by 6020
				Beryllium in solids by 6020
				Cadmium in solids by 6020
				Chromium in solids by 6020
				Combo: 14 MA MCP Metals
				EPH in solids by MADEP Method
				Hexavalent Chromium in solids by SW3060A7196A
				Lead in solids by 6020
				Mercury in solids by 7471
				Nickel in solids by 6020
				ORP in solids by ASTM-1498-08
				pH in solids by SW9045C
				Selenium in solids by 6020
				Silver in solids by 6020
				Solid Digestion for ICP Analysis
				Thallium in solids by 6020
				Vanadium in solids by 6020
				Zinc in solids by 6020
DUP-2	Solid	4/8/2020 0:00	52537-010	
				Antimony in solids by 6020
				Arsenic in solids by 6020
				Barium in solids by 6020
				Beryllium in solids by 6020
				Cadmium in solids by 6020
				Chromium in solids by 6020
				Combo: 14 MA MCP Metals
				EPH in solids by MADEP Method
				Lead in solids by 6020
				Mercury in solids by 7471
				Nickel in solids by 6020
				Selenium in solids by 6020
				Silver in solids by 6020
				Solid Digestion for ICP Analysis
				Thallium in solids by 6020
				Vanadium in solids by 6020
				VPH in solids by MA DEP Method
				Zinc in solids by 6020
Trip Blank	Solid	4/8/2020 0:00	52537-011	
				VPH in solids by MA DEP Method

Project ID: Cedar Woods 2180311

Job ID: 52537

Sample#: 52537-003

Sample ID: SB-111 (4-7')

Matrix: Solid Percent Dry: 79.9% Results expressed on a dry weight basis.

Samples prepared in methanol at a ratio of 0.67 mL MeOH/g soil.

Received on ice at 1˚C, in satisfactory condition.

Sampled: 4/8/20 9:15

Parameter	Result	Reporting Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
Unadjusted C5-C8 Aliphatics	< 5.4	5.4	ug/g	1	LMM	4/9/20	12628	4/9/20	19:19	MA VPH
Unadjusted C9-C12 Aliphatics	< 5.4	5.4	ug/g	1	LMM	4/9/20	12628	4/9/20	19:19	MA VPH
methyl t-butyl ether (MTBE)	< 0.11	0.11	ug/g	1	LMM	4/9/20	12628	4/9/20	19:19	MA VPH
benzene	< 0.11	0.11	ug/g	1	LMM	4/9/20	12628	4/9/20	19:19	MA VPH
toluene	< 0.11	0.11	ug/g	1	LMM	4/9/20	12628	4/9/20	19:19	MA VPH
ethylbenzene	< 0.11	0.11	ug/g	1	LMM	4/9/20	12628	4/9/20	19:19	MA VPH
m&p-xylenes	< 0.11	0.11	ug/g	1	LMM	4/9/20	12628	4/9/20	19:19	MA VPH
o-xylene	< 0.11	0.11	ug/g	1	LMM	4/9/20	12628	4/9/20	19:19	MA VPH
naphthalene	**0.30**	0.27	ug/g	1	LMM	4/9/20	12628	4/9/20	19:19	MA VPH
C5-C8 Aliphatics	< 5.4	5.4	ug/g	1	LMM	4/9/20	12628	4/9/20	19:19	MA VPH
C9-C12 Aliphatics	< 5.4	5.4	ug/g	1	LMM	4/9/20	12628	4/9/20	19:19	MA VPH
C9-C10 Aromatics	< 5.4	5.4	ug/g	1	LMM	4/9/20	12628	4/9/20	19:19	MA VPH
Surrogate Recovery		**Limits**								
2,5-dibromotoluene as Aromatic SUR	**107**	70-130	%	1	LMM	4/9/20	12628	4/9/20	19:19	MA VPH
2,5-dibromotoluene as Aliphatic SUR	**108**	70-130	%	1	LMM	4/9/20	12628	4/9/20	19:19	MA VPH
a,a,a-trifluorotoluene SUR	**67** *	70-130	%	1	LMM	4/9/20	12628	4/9/20	19:19	MA VPH

**** This surrogate showed recovery outside the acceptance limits.***

Hydrocarbon Range data exclude concentrations of any surrogate(s) and/or internal standards eluting in that range.

C5-C8 Aliphatic Hydrocarbons exclude the concentration of target analytes eluting in that range.

C9-C12 Aliphatic Hydrocarbons exclude concentration of target analytes eluting in that range AND C9-C10 Aromatics.

Project ID: Cedar Woods 2180311

Job ID: 52537

Sample#: 52537-005

Sample ID: SB-113 (5-8')

Matrix: Solid Percent Dry: 87.2% Results expressed on a dry weight basis.

Samples prepared in methanol at a ratio of 0.66 mL MeOH/g soil.

Received on ice at 1˚C, in satisfactory condition.

Sampled: 4/8/20 9:40

Parameter	Result	Reporting Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
Unadjusted C5-C8 Aliphatics	< 4.5	4.5	ug/g	1	LMM	4/9/20	12628	4/9/20	19:49	MA VPH
Unadjusted C9-C12 Aliphatics	< 4.5	4.5	ug/g	1	LMM	4/9/20	12628	4/9/20	19:49	MA VPH
methyl t-butyl ether (MTBE)	< 0.090	0.090	ug/g	1	LMM	4/9/20	12628	4/9/20	19:49	MA VPH
benzene	< 0.090	0.090	ug/g	1	LMM	4/9/20	12628	4/9/20	19:49	MA VPH
toluene	< 0.090	0.090	ug/g	1	LMM	4/9/20	12628	4/9/20	19:49	MA VPH
ethylbenzene	< 0.090	0.090	ug/g	1	LMM	4/9/20	12628	4/9/20	19:49	MA VPH
m&p-xylenes	< 0.090	0.090	ug/g	1	LMM	4/9/20	12628	4/9/20	19:49	MA VPH
o-xylene	< 0.090	0.090	ug/g	1	LMM	4/9/20	12628	4/9/20	19:49	MA VPH
naphthalene	< 0.23	0.23	ug/g	1	LMM	4/9/20	12628	4/9/20	19:49	MA VPH
C5-C8 Aliphatics	< 4.5	4.5	ug/g	1	LMM	4/9/20	12628	4/9/20	19:49	MA VPH
C9-C12 Aliphatics	< 4.5	4.5	ug/g	1	LMM	4/9/20	12628	4/9/20	19:49	MA VPH
C9-C10 Aromatics	< 4.5	4.5	ug/g	1	LMM	4/9/20	12628	4/9/20	19:49	MA VPH
Surrogate Recovery		**Limits**								
2,5-dibromotoluene as Aromatic SUR	**99**	70-130	%	1	LMM	4/9/20	12628	4/9/20	19:49	MA VPH
2,5-dibromotoluene as Aliphatic SUR	**100**	70-130	%	1	LMM	4/9/20	12628	4/9/20	19:49	MA VPH
a,a,a-trifluorotoluene SUR	**68** *	70-130	%	1	LMM	4/9/20	12628	4/9/20	19:49	MA VPH

**** This surrogate showed recovery outside the acceptance limits.***

Hydrocarbon Range data exclude concentrations of any surrogate(s) and/or internal standards eluting in that range.

C5-C8 Aliphatic Hydrocarbons exclude the concentration of target analytes eluting in that range.

C9-C12 Aliphatic Hydrocarbons exclude concentration of target analytes eluting in that range AND C9-C10 Aromatics.

Project ID: Cedar Woods 2180311
Job ID: 52537
Sample#: 52537-007
Sample ID: SB-115 (5-8')
Matrix: Solid Percent Dry: 66.1% Results expressed on a dry weight basis.
Samples prepared in methanol at a ratio of 0.63 mL MeOH/g soil.
Received on ice at 1˚C, in satisfactory condition.
Sampled: 4/8/20 10:20

Parameter	Result	Reporting Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
Unadjusted C5-C8 Aliphatics	< 7.3	7.3	ug/g	1	LMM	4/9/20	12628	4/9/20	20:19	MA VPH
Unadjusted C9-C12 Aliphatics	< 7.3	7.3	ug/g	1	LMM	4/9/20	12628	4/9/20	20:19	MA VPH
methyl t-butyl ether (MTBE)	< 0.15	0.15	ug/g	1	LMM	4/9/20	12628	4/9/20	20:19	MA VPH
benzene	< 0.15	0.15	ug/g	1	LMM	4/9/20	12628	4/9/20	20:19	MA VPH
toluene	< 0.15	0.15	ug/g	1	LMM	4/9/20	12628	4/9/20	20:19	MA VPH
ethylbenzene	< 0.15	0.15	ug/g	1	LMM	4/9/20	12628	4/9/20	20:19	MA VPH
m&p-xylenes	< 0.15	0.15	ug/g	1	LMM	4/9/20	12628	4/9/20	20:19	MA VPH
o-xylene	< 0.15	0.15	ug/g	1	LMM	4/9/20	12628	4/9/20	20:19	MA VPH
naphthalene	< 0.37	0.37	ug/g	1	LMM	4/9/20	12628	4/9/20	20:19	MA VPH
C5-C8 Aliphatics	< 7.3	7.3	ug/g	1	LMM	4/9/20	12628	4/9/20	20:19	MA VPH
C9-C12 Aliphatics	< 7.3	7.3	ug/g	1	LMM	4/9/20	12628	4/9/20	20:19	MA VPH
C9-C10 Aromatics	< 7.3	7.3	ug/g	1	LMM	4/9/20	12628	4/9/20	20:19	MA VPH
Surrogate Recovery		**Limits**								
2,5-dibromotoluene as Aromatic SUR	**108**	70-130	%	1	LMM	4/9/20	12628	4/9/20	20:19	MA VPH
2,5-dibromotoluene as Aliphatic SUR	**108**	70-130	%	1	LMM	4/9/20	12628	4/9/20	20:19	MA VPH
a,a,a-trifluorotoluene SUR	**86**	70-130	%	1	LMM	4/9/20	12628	4/9/20	20:19	MA VPH

Hydrocarbon Range data exclude concentrations of any surrogate(s) and/or internal standards eluting in that range.
C5-C8 Aliphatic Hydrocarbons exclude the concentration of target analytes eluting in that range.
C9-C12 Aliphatic Hydrocarbons exclude concentration of target analytes eluting in that range AND C9-C10 Aromatics.

Project ID: Cedar Woods 2180311

Job ID: 52537

Sample#: 52537-008

Sample ID: SB-114 (0-3')

Matrix: Solid Percent Dry: 93.7% Results expressed on a dry weight basis.

Samples prepared in methanol at a ratio of 0.67 mL MeOH/g soil.

Received on ice at 1˚C, in satisfactory condition.

Sampled: 4/8/20 10:30

Parameter	Result	Reporting Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
Unadjusted C5-C8 Aliphatics	< 3.9	3.9	ug/g	1	LMM	4/9/20	12628	4/9/20	20:49	MA VPH
Unadjusted C9-C12 Aliphatics	< 3.9	3.9	ug/g	1	LMM	4/9/20	12628	4/9/20	20:49	MA VPH
methyl t-butyl ether (MTBE)	< 0.078	0.078	ug/g	1	LMM	4/9/20	12628	4/9/20	20:49	MA VPH
benzene	< 0.078	0.078	ug/g	1	LMM	4/9/20	12628	4/9/20	20:49	MA VPH
toluene	< 0.078	0.078	ug/g	1	LMM	4/9/20	12628	4/9/20	20:49	MA VPH
ethylbenzene	< 0.078	0.078	ug/g	1	LMM	4/9/20	12628	4/9/20	20:49	MA VPH
m&p-xylenes	< 0.078	0.078	ug/g	1	LMM	4/9/20	12628	4/9/20	20:49	MA VPH
o-xylene	< 0.078	0.078	ug/g	1	LMM	4/9/20	12628	4/9/20	20:49	MA VPH
naphthalene	< 0.20	0.20	ug/g	1	LMM	4/9/20	12628	4/9/20	20:49	MA VPH
C5-C8 Aliphatics	< 3.9	3.9	ug/g	1	LMM	4/9/20	12628	4/9/20	20:49	MA VPH
C9-C12 Aliphatics	< 3.9	3.9	ug/g	1	LMM	4/9/20	12628	4/9/20	20:49	MA VPH
C9-C10 Aromatics	< 3.9	3.9	ug/g	1	LMM	4/9/20	12628	4/9/20	20:49	MA VPH
Surrogate Recovery		**Limits**								
2,5-dibromotoluene as Aromatic SUR	**100**	70-130	%	1	LMM	4/9/20	12628	4/9/20	20:49	MA VPH
2,5-dibromotoluene as Aliphatic SUR	**100**	70-130	%	1	LMM	4/9/20	12628	4/9/20	20:49	MA VPH
a,a,a-trifluorotoluene SUR	**79**	70-130	%	1	LMM	4/9/20	12628	4/9/20	20:49	MA VPH

Hydrocarbon Range data exclude concentrations of any surrogate(s) and/or internal standards eluting in that range.

C5-C8 Aliphatic Hydrocarbons exclude the concentration of target analytes eluting in that range.

C9-C12 Aliphatic Hydrocarbons exclude concentration of target analytes eluting in that range AND C9-C10 Aromatics.

Project ID: Cedar Woods 2180311
Job ID: 52537
Sample#: 52537-010
Sample ID: DUP-2
Matrix: Solid Percent Dry: 85.6% Results expressed on a dry weight basis.
Samples prepared in methanol at a ratio of 0.63 mL MeOH/g soil.
Received on ice at 1˚C, in satisfactory condition.
Sampled: 4/8/20 0:00

Parameter	Result	Reporting Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
Unadjusted C5-C8 Aliphatics	< 4.5	4.5	ug/g	1	LMM	4/9/20	12628	4/9/20	21:19	MA VPH
Unadjusted C9-C12 Aliphatics	< 4.5	4.5	ug/g	1	LMM	4/9/20	12628	4/9/20	21:19	MA VPH
methyl t-butyl ether (MTBE)	< 0.090	0.090	ug/g	1	LMM	4/9/20	12628	4/9/20	21:19	MA VPH
benzene	< 0.090	0.090	ug/g	1	LMM	4/9/20	12628	4/9/20	21:19	MA VPH
toluene	< 0.090	0.090	ug/g	1	LMM	4/9/20	12628	4/9/20	21:19	MA VPH
ethylbenzene	< 0.090	0.090	ug/g	1	LMM	4/9/20	12628	4/9/20	21:19	MA VPH
m&p-xylenes	< 0.090	0.090	ug/g	1	LMM	4/9/20	12628	4/9/20	21:19	MA VPH
o-xylene	< 0.090	0.090	ug/g	1	LMM	4/9/20	12628	4/9/20	21:19	MA VPH
naphthalene	< 0.23	0.23	ug/g	1	LMM	4/9/20	12628	4/9/20	21:19	MA VPH
C5-C8 Aliphatics	< 4.5	4.5	ug/g	1	LMM	4/9/20	12628	4/9/20	21:19	MA VPH
C9-C12 Aliphatics	< 4.5	4.5	ug/g	1	LMM	4/9/20	12628	4/9/20	21:19	MA VPH
C9-C10 Aromatics	< 4.5	4.5	ug/g	1	LMM	4/9/20	12628	4/9/20	21:19	MA VPH
Surrogate Recovery		**Limits**								
2,5-dibromotoluene as Aromatic SUR	**100**	70-130	%	1	LMM	4/9/20	12628	4/9/20	21:19	MA VPH
2,5-dibromotoluene as Aliphatic SUR	**101**	70-130	%	1	LMM	4/9/20	12628	4/9/20	21:19	MA VPH
a,a,a-trifluorotoluene SUR	**54** *	70-130	%	1	LMM	4/9/20	12628	4/9/20	21:19	MA VPH

**** This surrogate showed recovery outside the acceptance limits.***

Hydrocarbon Range data exclude concentrations of any surrogate(s) and/or internal standards eluting in that range.

C5-C8 Aliphatic Hydrocarbons exclude the concentration of target analytes eluting in that range.

C9-C12 Aliphatic Hydrocarbons exclude concentration of target analytes eluting in that range AND C9-C10 Aromatics.

Project ID: Cedar Woods 2180311

Job ID: 52537

Sample#: 52537-011

Sample ID: Trip Blank

Matrix: Solid

Samples prepared in methanol within a 1:1 ratio +/- 25% mL MeOH/g soil

Received on ice at 1˚C, in satisfactory condition.

Sampled: 4/8/20 0:00

Parameter	Result	Reporting Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
Unadjusted C5-C8 Aliphatics	< 5.0	5.0	ug/g	1	LMM	4/9/20	12628	4/9/20	12:19	MA VPH
Unadjusted C9-C12 Aliphatics	< 5.0	5.0	ug/g	1	LMM	4/9/20	12628	4/9/20	12:19	MA VPH
methyl t-butyl ether (MTBE)	< 0.10	0.10	ug/g	1	LMM	4/9/20	12628	4/9/20	12:19	MA VPH
benzene	< 0.10	0.10	ug/g	1	LMM	4/9/20	12628	4/9/20	12:19	MA VPH
toluene	< 0.10	0.10	ug/g	1	LMM	4/9/20	12628	4/9/20	12:19	MA VPH
ethylbenzene	< 0.10	0.10	ug/g	1	LMM	4/9/20	12628	4/9/20	12:19	MA VPH
m&p-xylenes	< 0.10	0.10	ug/g	1	LMM	4/9/20	12628	4/9/20	12:19	MA VPH
o-xylene	< 0.10	0.10	ug/g	1	LMM	4/9/20	12628	4/9/20	12:19	MA VPH
naphthalene	< 0.25	0.25	ug/g	1	LMM	4/9/20	12628	4/9/20	12:19	MA VPH
C5-C8 Aliphatics	< 5.0	5.0	ug/g	1	LMM	4/9/20	12628	4/9/20	12:19	MA VPH
C9-C12 Aliphatics	< 5.0	5.0	ug/g	1	LMM	4/9/20	12628	4/9/20	12:19	MA VPH
C9-C10 Aromatics	< 5.0	5.0	ug/g	1	LMM	4/9/20	12628	4/9/20	12:19	MA VPH
Surrogate Recovery		**Limits**								
2,5-dibromotoluene as Aromatic SUR	**104**	70-130	%	1	LMM	4/9/20	12628	4/9/20	12:19	MA VPH
2,5-dibromotoluene as Aliphatic SUR	**104**	70-130	%	1	LMM	4/9/20	12628	4/9/20	12:19	MA VPH
a,a,a-trifluorotoluene SUR	**84**	70-130	%	1	LMM	4/9/20	12628	4/9/20	12:19	MA VPH

Hydrocarbon Range data exclude concentrations of any surrogate(s) and/or internal standards eluting in that range.

C5-C8 Aliphatic Hydrocarbons exclude the concentration of target analytes eluting in that range.

C9-C12 Aliphatic Hydrocarbons exclude concentration of target analytes eluting in that range AND C9-C10 Aromatics.

Project ID: Cedar Woods 2180311
Job ID: 52537
Sample#: 52537-001
Sample ID: SB-111 (0-1')
Matrix: Solid Percent Dry: 91.8% Results expressed on a dry weight basis.
Sampled: 4/8/20 9:10

Parameter	Result	Reporting Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
naphthalene	< 0.20	0.20	ug/g	1	CL	4/15/20	12658	4/15/20	20:30	MA EPH
2-methylnaphthalene	< 0.20	0.20	ug/g	1	CL	4/15/20	12658	4/15/20	20:30	MA EPH
phenanthrene	**0.57**	0.20	ug/g	1	CL	4/15/20	12658	4/15/20	20:30	MA EPH
acenaphthene	< 0.20	0.20	ug/g	1	CL	4/15/20	12658	4/15/20	20:30	MA EPH
acenaphthylene	< 0.20	0.20	ug/g	1	CL	4/15/20	12658	4/15/20	20:30	MA EPH
fluorene	< 0.20	0.20	ug/g	1	CL	4/15/20	12658	4/15/20	20:30	MA EPH
anthracene	< 0.20	0.20	ug/g	1	CL	4/15/20	12658	4/15/20	20:30	MA EPH
fluoranthene	**2.2**	0.20	ug/g	1	CL	4/15/20	12658	4/15/20	20:30	MA EPH
pyrene	**1.9**	0.20	ug/g	1	CL	4/15/20	12658	4/15/20	20:30	MA EPH
benzo(a)anthracene	**1.5**	0.20	ug/g	1	CL	4/15/20	12658	4/15/20	20:30	MA EPH
chrysene	**1.8**	0.20	ug/g	1	CL	4/15/20	12658	4/15/20	20:30	MA EPH
benzo(b)fluoranthene	**2.3**	0.20	ug/g	1	CL	4/15/20	12658	4/15/20	20:30	MA EPH
benzo(k)fluoranthene	**1.7**	0.20	ug/g	1	CL	4/15/20	12658	4/15/20	20:30	MA EPH
benzo(a)pyrene	**2.0**	0.20	ug/g	1	CL	4/15/20	12658	4/15/20	20:30	MA EPH
indeno(1,2,3-cd)pyrene	**1.7**	0.20	ug/g	1	CL	4/15/20	12658	4/15/20	20:30	MA EPH
dibenzo(a,h)anthracene	**0.51**	0.20	ug/g	1	CL	4/15/20	12658	4/15/20	20:30	MA EPH
benzo(g,h,i)perylene	**2.0**	0.20	ug/g	1	CL	4/15/20	12658	4/15/20	20:30	MA EPH
Unadjusted C11-C22 Aromatics	**80**	20	ug/g	1	DBV	4/15/20	12658	4/16/20	8:30	MA EPH
C9-C18 Aliphatics	< 20	20	ug/g	1	DBV	4/15/20	12658	4/16/20	8:30	MA EPH
C19-C36 Aliphatics	**85**	20	ug/g	1	DBV	4/15/20	12658	4/16/20	8:30	MA EPH
C11-C22 Aromatics	**62**	20	ug/g	1	DBV	4/15/20	12658	4/16/20	8:30	MA EPH
Surrogate Recovery		**Limits**								
1-chloro-octadecane SUR	**44**	40-140	%	1	DBV	4/15/20	12658	4/16/20	8:30	MA EPH
o-terphenyl SUR	**48**	40-140	%	1	DBV	4/15/20	12658	4/16/20	8:30	MA EPH
2-fluorobiphenyl SUR	**67**	40-140	%	1	DBV	4/15/20	12658	4/16/20	8:30	MA EPH
2-bromonaphthalene SUR	**61**	40-140	%	1	DBV	4/15/20	12658	4/16/20	8:30	MA EPH

Project ID: Cedar Woods 2180311
Job ID: 52537
Sample#: 52537-002
Sample ID: SB-111 (0-3')
Matrix: Solid Percent Dry: 82.2% Results expressed on a dry weight basis.
Sampled: 4/8/20 9:12

Parameter	Result	Reporting Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
naphthalene	< 0.19	0.19	ug/g	1	CL	4/15/20	12658	4/15/20	17:28	MA EPH
2-methylnaphthalene	< 0.19	0.19	ug/g	1	CL	4/15/20	12658	4/15/20	17:28	MA EPH
phenanthrene	< 0.19	0.19	ug/g	1	CL	4/15/20	12658	4/15/20	17:28	MA EPH
acenaphthene	< 0.19	0.19	ug/g	1	CL	4/15/20	12658	4/15/20	17:28	MA EPH
acenaphthylene	< 0.19	0.19	ug/g	1	CL	4/15/20	12658	4/15/20	17:28	MA EPH
fluorene	< 0.19	0.19	ug/g	1	CL	4/15/20	12658	4/15/20	17:28	MA EPH
anthracene	< 0.19	0.19	ug/g	1	CL	4/15/20	12658	4/15/20	17:28	MA EPH
fluoranthene	< 0.19	0.19	ug/g	1	CL	4/15/20	12658	4/15/20	17:28	MA EPH
pyrene	< 0.19	0.19	ug/g	1	CL	4/15/20	12658	4/15/20	17:28	MA EPH
benzo(a)anthracene	< 0.19	0.19	ug/g	1	CL	4/15/20	12658	4/15/20	17:28	MA EPH
chrysene	< 0.19	0.19	ug/g	1	CL	4/15/20	12658	4/15/20	17:28	MA EPH
benzo(b)fluoranthene	< 0.19	0.19	ug/g	1	CL	4/15/20	12658	4/15/20	17:28	MA EPH
benzo(k)fluoranthene	< 0.19	0.19	ug/g	1	CL	4/15/20	12658	4/15/20	17:28	MA EPH
benzo(a)pyrene	< 0.19	0.19	ug/g	1	CL	4/15/20	12658	4/15/20	17:28	MA EPH
indeno(1,2,3-cd)pyrene	< 0.19	0.19	ug/g	1	CL	4/15/20	12658	4/15/20	17:28	MA EPH
dibenzo(a,h)anthracene	< 0.19	0.19	ug/g	1	CL	4/15/20	12658	4/15/20	17:28	MA EPH
benzo(g,h,i)perylene	< 0.19	0.19	ug/g	1	CL	4/15/20	12658	4/15/20	17:28	MA EPH
Unadjusted C11-C22 Aromatics	< 19	19	ug/g	1	DBV	4/15/20	12658	4/16/20	3:23	MA EPH
C9-C18 Aliphatics	< 19	19	ug/g	1	DBV	4/15/20	12658	4/16/20	3:23	MA EPH
C19-C36 Aliphatics	**40**	19	ug/g	1	DBV	4/15/20	12658	4/16/20	3:23	MA EPH
C11-C22 Aromatics	< 19	19	ug/g	1	DBV	4/15/20	12658	4/16/20	3:23	MA EPH
Surrogate Recovery		**Limits**								
1-chloro-octadecane SUR	**43**	40-140	%	1	DBV	4/15/20	12658	4/16/20	3:23	MA EPH
o-terphenyl SUR	**49**	40-140	%	1	DBV	4/15/20	12658	4/16/20	3:23	MA EPH
2-fluorobiphenyl SUR	**74**	40-140	%	1	DBV	4/15/20	12658	4/16/20	3:23	MA EPH
2-bromonaphthalene SUR	**69**	40-140	%	1	DBV	4/15/20	12658	4/16/20	3:23	MA EPH

Project ID: Cedar Woods 2180311
Job ID: 52537
Sample#: 52537-003
Sample ID: SB-111 (4-7')
Matrix: Solid Percent Dry: 79.9% Results expressed on a dry weight basis.
Sampled: 4/8/20 9:15

Parameter	Result	Reporting Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
naphthalene	**0.35**	0.19	ug/g	1	CL	4/15/20	12658	4/15/20	22:00	MA EPH
2-methylnaphthalene	**0.22**	0.19	ug/g	1	CL	4/15/20	12658	4/15/20	22:00	MA EPH
phenanthrene	**5.1**	0.19	ug/g	1	CL	4/15/20	12658	4/15/20	22:00	MA EPH
acenaphthene	**0.24**	0.19	ug/g	1	CL	4/15/20	12658	4/15/20	22:00	MA EPH
acenaphthylene	< 0.19	0.19	ug/g	1	CL	4/15/20	12658	4/15/20	22:00	MA EPH
fluorene	**0.43**	0.19	ug/g	1	CL	4/15/20	12658	4/15/20	22:00	MA EPH
anthracene	**1.3**	0.19	ug/g	1	CL	4/15/20	12658	4/15/20	22:00	MA EPH
fluoranthene	**8.5**	0.19	ug/g	1	CL	4/15/20	12658	4/15/20	22:00	MA EPH
pyrene	**6.7**	0.19	ug/g	1	CL	4/15/20	12658	4/15/20	22:00	MA EPH
benzo(a)anthracene	**4.1**	0.19	ug/g	1	CL	4/15/20	12658	4/15/20	22:00	MA EPH
chrysene	**4.4**	0.19	ug/g	1	CL	4/15/20	12658	4/15/20	22:00	MA EPH
benzo(b)fluoranthene	**3.9**	0.19	ug/g	1	CL	4/15/20	12658	4/15/20	22:00	MA EPH
benzo(k)fluoranthene	**3.4**	0.19	ug/g	1	CL	4/15/20	12658	4/15/20	22:00	MA EPH
benzo(a)pyrene	**4.1**	0.19	ug/g	1	CL	4/15/20	12658	4/15/20	22:00	MA EPH
indeno(1,2,3-cd)pyrene	**2.7**	0.19	ug/g	1	CL	4/15/20	12658	4/15/20	22:00	MA EPH
dibenzo(a,h)anthracene	**0.95**	0.19	ug/g	1	CL	4/15/20	12658	4/15/20	22:00	MA EPH
benzo(g,h,i)perylene	**3.0**	0.19	ug/g	1	CL	4/15/20	12658	4/15/20	22:00	MA EPH
Unadjusted C11-C22 Aromatics	**250**	97	ug/g	5	DBV	4/15/20	12658	4/16/20	7:56	MA EPH
C9-C18 Aliphatics	< 97	97	ug/g	5	DBV	4/15/20	12658	4/16/20	7:56	MA EPH
C19-C36 Aliphatics	**340**	97	ug/g	5	DBV	4/15/20	12658	4/16/20	7:56	MA EPH
C11-C22 Aromatics	**200**	97	ug/g	5	DBV	4/15/20	12658	4/16/20	7:56	MA EPH
Surrogate Recovery		**Limits**								
1-chloro-octadecane SUR	**53**	40-140	%	5	DBV	4/15/20	12658	4/16/20	7:56	MA EPH
o-terphenyl SUR	**56**	40-140	%	5	DBV	4/15/20	12658	4/16/20	7:56	MA EPH
2-fluorobiphenyl SUR	**71**	40-140	%	5	DBV	4/15/20	12658	4/16/20	7:56	MA EPH
2-bromonaphthalene SUR	**62**	40-140	%	5	DBV	4/15/20	12658	4/16/20	7:56	MA EPH

Project ID: Cedar Woods 2180311
Job ID: 52537
Sample#: 52537-004
Sample ID: SB-113 (0-3')
Matrix: Solid Percent Dry: 81.1% Results expressed on a dry weight basis.
Sampled: 4/8/20 9:30

Parameter	Result	Reporting Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
naphthalene	< 0.19	0.19	ug/g	1	CL	4/15/20	12658	4/15/20	20:00	MA EPH
2-methylnaphthalene	< 0.19	0.19	ug/g	1	CL	4/15/20	12658	4/15/20	20:00	MA EPH
phenanthrene	< 0.19	0.19	ug/g	1	CL	4/15/20	12658	4/15/20	20:00	MA EPH
acenaphthene	< 0.19	0.19	ug/g	1	CL	4/15/20	12658	4/15/20	20:00	MA EPH
acenaphthylene	< 0.19	0.19	ug/g	1	CL	4/15/20	12658	4/15/20	20:00	MA EPH
fluorene	< 0.19	0.19	ug/g	1	CL	4/15/20	12658	4/15/20	20:00	MA EPH
anthracene	< 0.19	0.19	ug/g	1	CL	4/15/20	12658	4/15/20	20:00	MA EPH
fluoranthene	< 0.19	0.19	ug/g	1	CL	4/15/20	12658	4/15/20	20:00	MA EPH
pyrene	< 0.19	0.19	ug/g	1	CL	4/15/20	12658	4/15/20	20:00	MA EPH
benzo(a)anthracene	< 0.19	0.19	ug/g	1	CL	4/15/20	12658	4/15/20	20:00	MA EPH
chrysene	< 0.19	0.19	ug/g	1	CL	4/15/20	12658	4/15/20	20:00	MA EPH
benzo(b)fluoranthene	< 0.19	0.19	ug/g	1	CL	4/15/20	12658	4/15/20	20:00	MA EPH
benzo(k)fluoranthene	< 0.19	0.19	ug/g	1	CL	4/15/20	12658	4/15/20	20:00	MA EPH
benzo(a)pyrene	< 0.19	0.19	ug/g	1	CL	4/15/20	12658	4/15/20	20:00	MA EPH
indeno(1,2,3-cd)pyrene	< 0.19	0.19	ug/g	1	CL	4/15/20	12658	4/15/20	20:00	MA EPH
dibenzo(a,h)anthracene	< 0.19	0.19	ug/g	1	CL	4/15/20	12658	4/15/20	20:00	MA EPH
benzo(g,h,i)perylene	< 0.19	0.19	ug/g	1	CL	4/15/20	12658	4/15/20	20:00	MA EPH
Unadjusted C11-C22 Aromatics	**99**	19	ug/g	1	DBV	4/15/20	12658	4/16/20	7:22	MA EPH
C9-C18 Aliphatics	< 97	97	ug/g	5	DBV	4/15/20	12658	4/16/20	7:22	MA EPH
C19-C36 Aliphatics	**450**	97	ug/g	5	DBV	4/15/20	12658	4/16/20	7:22	MA EPH
C11-C22 Aromatics	**97**	19	ug/g	1	DBV	4/15/20	12658	4/16/20	7:22	MA EPH
Surrogate Recovery		**Limits**								
1-chloro-octadecane SUR	**52**	40-140	%	5	DBV	4/15/20	12658	4/16/20	7:22	MA EPH
o-terphenyl SUR	**55**	40-140	%	1	DBV	4/15/20	12658	4/16/20	7:22	MA EPH
2-fluorobiphenyl SUR	**70**	40-140	%	1	DBV	4/15/20	12658	4/16/20	7:22	MA EPH
2-bromonaphthalene SUR	**64**	40-140	%	1	DBV	4/15/20	12658	4/16/20	7:22	MA EPH

Project ID: Cedar Woods 2180311
Job ID: 52537
Sample#: 52537-005
Sample ID: SB-113 (5-8')
Matrix: Solid Percent Dry: 87.2% Results expressed on a dry weight basis.
Sampled: 4/8/20 9:40

Parameter	Result	Reporting Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
naphthalene	< 0.19	0.19	ug/g	1	CL	4/15/20	12658	4/15/20	17:58	MA EPH
2-methylnaphthalene	< 0.19	0.19	ug/g	1	CL	4/15/20	12658	4/15/20	17:58	MA EPH
phenanthrene	< 0.19	0.19	ug/g	1	CL	4/15/20	12658	4/15/20	17:58	MA EPH
acenaphthene	< 0.19	0.19	ug/g	1	CL	4/15/20	12658	4/15/20	17:58	MA EPH
acenaphthylene	< 0.19	0.19	ug/g	1	CL	4/15/20	12658	4/15/20	17:58	MA EPH
fluorene	< 0.19	0.19	ug/g	1	CL	4/15/20	12658	4/15/20	17:58	MA EPH
anthracene	< 0.19	0.19	ug/g	1	CL	4/15/20	12658	4/15/20	17:58	MA EPH
fluoranthene	< 0.19	0.19	ug/g	1	CL	4/15/20	12658	4/15/20	17:58	MA EPH
pyrene	< 0.19	0.19	ug/g	1	CL	4/15/20	12658	4/15/20	17:58	MA EPH
benzo(a)anthracene	< 0.19	0.19	ug/g	1	CL	4/15/20	12658	4/15/20	17:58	MA EPH
chrysene	< 0.19	0.19	ug/g	1	CL	4/15/20	12658	4/15/20	17:58	MA EPH
benzo(b)fluoranthene	< 0.19	0.19	ug/g	1	CL	4/15/20	12658	4/15/20	17:58	MA EPH
benzo(k)fluoranthene	< 0.19	0.19	ug/g	1	CL	4/15/20	12658	4/15/20	17:58	MA EPH
benzo(a)pyrene	< 0.19	0.19	ug/g	1	CL	4/15/20	12658	4/15/20	17:58	MA EPH
indeno(1,2,3-cd)pyrene	< 0.19	0.19	ug/g	1	CL	4/15/20	12658	4/15/20	17:58	MA EPH
dibenzo(a,h)anthracene	< 0.19	0.19	ug/g	1	CL	4/15/20	12658	4/15/20	17:58	MA EPH
benzo(g,h,i)perylene	< 0.19	0.19	ug/g	1	CL	4/15/20	12658	4/15/20	17:58	MA EPH
Unadjusted C11-C22 Aromatics	< 19	19	ug/g	1	DBV	4/15/20	12658	4/16/20	3:57	MA EPH
C9-C18 Aliphatics	< 19	19	ug/g	1	DBV	4/15/20	12658	4/16/20	3:57	MA EPH
C19-C36 Aliphatics	< 19	19	ug/g	1	DBV	4/15/20	12658	4/16/20	3:57	MA EPH
C11-C22 Aromatics	< 19	19	ug/g	1	DBV	4/15/20	12658	4/16/20	3:57	MA EPH
Surrogate Recovery		**Limits**								
1-chloro-octadecane SUR	**52**	40-140	%	1	DBV	4/15/20	12658	4/16/20	3:57	MA EPH
o-terphenyl SUR	**61**	40-140	%	1	DBV	4/15/20	12658	4/16/20	3:57	MA EPH
2-fluorobiphenyl SUR	**72**	40-140	%	1	DBV	4/15/20	12658	4/16/20	3:57	MA EPH
2-bromonaphthalene SUR	**66**	40-140	%	1	DBV	4/15/20	12658	4/16/20	3:57	MA EPH

Project ID: Cedar Woods 2180311
Job ID: 52537
Sample#: 52537-006
Sample ID: SB-115 (0-3')
Matrix: Solid Percent Dry: 89.3% Results expressed on a dry weight basis.
Sampled: 4/8/20 10:10

Parameter	Result	Reporting Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
naphthalene	< 0.19	0.19	ug/g	1	CL	4/15/20	12658	4/15/20	18:29	MA EPH
2-methylnaphthalene	< 0.19	0.19	ug/g	1	CL	4/15/20	12658	4/15/20	18:29	MA EPH
phenanthrene	< 0.19	0.19	ug/g	1	CL	4/15/20	12658	4/15/20	18:29	MA EPH
acenaphthene	< 0.19	0.19	ug/g	1	CL	4/15/20	12658	4/15/20	18:29	MA EPH
acenaphthylene	< 0.19	0.19	ug/g	1	CL	4/15/20	12658	4/15/20	18:29	MA EPH
fluorene	< 0.19	0.19	ug/g	1	CL	4/15/20	12658	4/15/20	18:29	MA EPH
anthracene	< 0.19	0.19	ug/g	1	CL	4/15/20	12658	4/15/20	18:29	MA EPH
fluoranthene	< 0.19	0.19	ug/g	1	CL	4/15/20	12658	4/15/20	18:29	MA EPH
pyrene	< 0.19	0.19	ug/g	1	CL	4/15/20	12658	4/15/20	18:29	MA EPH
benzo(a)anthracene	< 0.19	0.19	ug/g	1	CL	4/15/20	12658	4/15/20	18:29	MA EPH
chrysene	< 0.19	0.19	ug/g	1	CL	4/15/20	12658	4/15/20	18:29	MA EPH
benzo(b)fluoranthene	< 0.19	0.19	ug/g	1	CL	4/15/20	12658	4/15/20	18:29	MA EPH
benzo(k)fluoranthene	< 0.19	0.19	ug/g	1	CL	4/15/20	12658	4/15/20	18:29	MA EPH
benzo(a)pyrene	< 0.19	0.19	ug/g	1	CL	4/15/20	12658	4/15/20	18:29	MA EPH
indeno(1,2,3-cd)pyrene	< 0.19	0.19	ug/g	1	CL	4/15/20	12658	4/15/20	18:29	MA EPH
dibenzo(a,h)anthracene	< 0.19	0.19	ug/g	1	CL	4/15/20	12658	4/15/20	18:29	MA EPH
benzo(g,h,i)perylene	< 0.19	0.19	ug/g	1	CL	4/15/20	12658	4/15/20	18:29	MA EPH
Unadjusted C11-C22 Aromatics	< 19	19	ug/g	1	DBV	4/15/20	12658	4/16/20	5:06	MA EPH
C9-C18 Aliphatics	< 19	19	ug/g	1	DBV	4/15/20	12658	4/16/20	5:06	MA EPH
C19-C36 Aliphatics	< 19	19	ug/g	1	DBV	4/15/20	12658	4/16/20	5:06	MA EPH
C11-C22 Aromatics	< 19	19	ug/g	1	DBV	4/15/20	12658	4/16/20	5:06	MA EPH
Surrogate Recovery		**Limits**								
1-chloro-octadecane SUR	**53**	40-140	%	1	DBV	4/15/20	12658	4/16/20	5:06	MA EPH
o-terphenyl SUR	**63**	40-140	%	1	DBV	4/15/20	12658	4/16/20	5:06	MA EPH
2-fluorobiphenyl SUR	**69**	40-140	%	1	DBV	4/15/20	12658	4/16/20	5:06	MA EPH
2-bromonaphthalene SUR	**62**	40-140	%	1	DBV	4/15/20	12658	4/16/20	5:06	MA EPH

Project ID: Cedar Woods 2180311
Job ID: 52537
Sample#: 52537-007
Sample ID: SB-115 (5-8')
Matrix: Solid Percent Dry: 66.1% Results expressed on a dry weight basis.
Sampled: 4/8/20 10:20

Parameter	Result	Reporting Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
naphthalene	**0.26**	0.20	ug/g	1	CL	4/15/20	12658	4/15/20	21:00	MA EPH
2-methylnaphthalene	< 0.20	0.20	ug/g	1	CL	4/15/20	12658	4/15/20	21:00	MA EPH
phenanthrene	**2.2**	0.20	ug/g	1	CL	4/15/20	12658	4/15/20	21:00	MA EPH
acenaphthene	< 0.20	0.20	ug/g	1	CL	4/15/20	12658	4/15/20	21:00	MA EPH
acenaphthylene	< 0.20	0.20	ug/g	1	CL	4/15/20	12658	4/15/20	21:00	MA EPH
fluorene	**0.20**	0.20	ug/g	1	CL	4/15/20	12658	4/15/20	21:00	MA EPH
anthracene	**0.33**	0.20	ug/g	1	CL	4/15/20	12658	4/15/20	21:00	MA EPH
fluoranthene	**3.3**	0.20	ug/g	1	CL	4/15/20	12658	4/15/20	21:00	MA EPH
pyrene	**3.5**	0.20	ug/g	1	CL	4/15/20	12658	4/15/20	21:00	MA EPH
benzo(a)anthracene	**1.6**	0.20	ug/g	1	CL	4/15/20	12658	4/15/20	21:00	MA EPH
chrysene	**1.9**	0.20	ug/g	1	CL	4/15/20	12658	4/15/20	21:00	MA EPH
benzo(b)fluoranthene	**1.8**	0.20	ug/g	1	CL	4/15/20	12658	4/15/20	21:00	MA EPH
benzo(k)fluoranthene	**1.4**	0.20	ug/g	1	CL	4/15/20	12658	4/15/20	21:00	MA EPH
benzo(a)pyrene	**1.7**	0.20	ug/g	1	CL	4/15/20	12658	4/15/20	21:00	MA EPH
indeno(1,2,3-cd)pyrene	**1.2**	0.20	ug/g	1	CL	4/15/20	12658	4/15/20	21:00	MA EPH
dibenzo(a,h)anthracene	**0.38**	0.20	ug/g	1	CL	4/15/20	12658	4/15/20	21:00	MA EPH
benzo(g,h,i)perylene	**1.5**	0.20	ug/g	1	CL	4/15/20	12658	4/15/20	21:00	MA EPH
Unadjusted C11-C22 Aromatics	**96**	20	ug/g	1	DBV	4/15/20	12658	4/16/20	6:14	MA EPH
C9-C18 Aliphatics	< 20	20	ug/g	1	DBV	4/15/20	12658	4/16/20	6:14	MA EPH
C19-C36 Aliphatics	**57**	20	ug/g	1	DBV	4/15/20	12658	4/16/20	6:14	MA EPH
C11-C22 Aromatics	**75**	20	ug/g	1	DBV	4/15/20	12658	4/16/20	6:14	MA EPH
Surrogate Recovery		**Limits**								
1-chloro-octadecane SUR	**55**	40-140	%	1	DBV	4/15/20	12658	4/16/20	6:14	MA EPH
o-terphenyl SUR	**65**	40-140	%	1	DBV	4/15/20	12658	4/16/20	6:14	MA EPH
2-fluorobiphenyl SUR	**71**	40-140	%	1	DBV	4/15/20	12658	4/16/20	6:14	MA EPH
2-bromonaphthalene SUR	**64**	40-140	%	1	DBV	4/15/20	12658	4/16/20	6:14	MA EPH

Project ID: Cedar Woods 2180311
Job ID: 52537
Sample#: 52537-008
Sample ID: SB-114 (0-3')
Matrix: Solid Percent Dry: 93.7% Results expressed on a dry weight basis.
Sampled: 4/8/20 10:30

Parameter	Result	Reporting Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
naphthalene	< 0.19	0.19	ug/g	1	CL	4/15/20	12658	4/15/20	21:30	MA EPH
2-methylnaphthalene	< 0.19	0.19	ug/g	1	CL	4/15/20	12658	4/15/20	21:30	MA EPH
phenanthrene	**4.1**	0.19	ug/g	1	CL	4/15/20	12658	4/15/20	21:30	MA EPH
acenaphthene	< 0.19	0.19	ug/g	1	CL	4/15/20	12658	4/15/20	21:30	MA EPH
acenaphthylene	**0.77**	0.19	ug/g	1	CL	4/15/20	12658	4/15/20	21:30	MA EPH
fluorene	< 0.19	0.19	ug/g	1	CL	4/15/20	12658	4/15/20	21:30	MA EPH
anthracene	**0.61**	0.19	ug/g	1	CL	4/15/20	12658	4/15/20	21:30	MA EPH
fluoranthene	**9.3**	0.19	ug/g	1	CL	4/15/20	12658	4/15/20	21:30	MA EPH
pyrene	**11**	0.19	ug/g	1	CL	4/15/20	12658	4/15/20	21:30	MA EPH
benzo(a)anthracene	**4.9**	0.19	ug/g	1	CL	4/15/20	12658	4/15/20	21:30	MA EPH
chrysene	**5.7**	0.19	ug/g	1	CL	4/15/20	12658	4/15/20	21:30	MA EPH
benzo(b)fluoranthene	**3.6**	0.19	ug/g	1	CL	4/15/20	12658	4/15/20	21:30	MA EPH
benzo(k)fluoranthene	**3.4**	0.19	ug/g	1	CL	4/15/20	12658	4/15/20	21:30	MA EPH
benzo(a)pyrene	**4.4**	0.19	ug/g	1	CL	4/15/20	12658	4/15/20	21:30	MA EPH
indeno(1,2,3-cd)pyrene	**2.7**	0.19	ug/g	1	CL	4/15/20	12658	4/15/20	21:30	MA EPH
dibenzo(a,h)anthracene	**0.78**	0.19	ug/g	1	CL	4/15/20	12658	4/15/20	21:30	MA EPH
benzo(g,h,i)perylene	**3.4**	0.19	ug/g	1	CL	4/15/20	12658	4/15/20	21:30	MA EPH
Unadjusted C11-C22 Aromatics	**270**	19	ug/g	1	DBV	4/15/20	12658	4/16/20	5:40	MA EPH
C9-C18 Aliphatics	< 19	19	ug/g	1	DBV	4/15/20	12658	4/16/20	5:40	MA EPH
C19-C36 Aliphatics	**40**	19	ug/g	1	DBV	4/15/20	12658	4/16/20	5:40	MA EPH
C11-C22 Aromatics	**220**	19	ug/g	1	DBV	4/15/20	12658	4/16/20	5:40	MA EPH
Surrogate Recovery		**Limits**								
1-chloro-octadecane SUR	**49**	40-140	%	1	DBV	4/15/20	12658	4/16/20	5:40	MA EPH
o-terphenyl SUR	**65**	40-140	%	1	DBV	4/15/20	12658	4/16/20	5:40	MA EPH
2-fluorobiphenyl SUR	**68**	40-140	%	1	DBV	4/15/20	12658	4/16/20	5:40	MA EPH
2-bromonaphthalene SUR	**63**	40-140	%	1	DBV	4/15/20	12658	4/16/20	5:40	MA EPH

Project ID: Cedar Woods 2180311
Job ID: 52537
Sample#: 52537-009
Sample ID: SB-114 (5-8')
Matrix: Solid Percent Dry: 68.7% Results expressed on a dry weight basis.
Sampled: 4/8/20 10:50

Parameter	Result	Reporting Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
naphthalene	< 0.19	0.19	ug/g	1	CL	4/15/20	12658	4/15/20	19:29	MA EPH
2-methylnaphthalene	< 0.19	0.19	ug/g	1	CL	4/15/20	12658	4/15/20	19:29	MA EPH
phenanthrene	**0.54**	0.19	ug/g	1	CL	4/15/20	12658	4/15/20	19:29	MA EPH
acenaphthene	< 0.19	0.19	ug/g	1	CL	4/15/20	12658	4/15/20	19:29	MA EPH
acenaphthylene	< 0.19	0.19	ug/g	1	CL	4/15/20	12658	4/15/20	19:29	MA EPH
fluorene	< 0.19	0.19	ug/g	1	CL	4/15/20	12658	4/15/20	19:29	MA EPH
anthracene	< 0.19	0.19	ug/g	1	CL	4/15/20	12658	4/15/20	19:29	MA EPH
fluoranthene	**0.77**	0.19	ug/g	1	CL	4/15/20	12658	4/15/20	19:29	MA EPH
pyrene	**0.69**	0.19	ug/g	1	CL	4/15/20	12658	4/15/20	19:29	MA EPH
benzo(a)anthracene	**0.33**	0.19	ug/g	1	CL	4/15/20	12658	4/15/20	19:29	MA EPH
chrysene	**0.38**	0.19	ug/g	1	CL	4/15/20	12658	4/15/20	19:29	MA EPH
benzo(b)fluoranthene	**0.29**	0.19	ug/g	1	CL	4/15/20	12658	4/15/20	19:29	MA EPH
benzo(k)fluoranthene	**0.31**	0.19	ug/g	1	CL	4/15/20	12658	4/15/20	19:29	MA EPH
benzo(a)pyrene	**0.37**	0.19	ug/g	1	CL	4/15/20	12658	4/15/20	19:29	MA EPH
indeno(1,2,3-cd)pyrene	**0.25**	0.19	ug/g	1	CL	4/15/20	12658	4/15/20	19:29	MA EPH
dibenzo(a,h)anthracene	< 0.19	0.19	ug/g	1	CL	4/15/20	12658	4/15/20	19:29	MA EPH
benzo(g,h,i)perylene	**0.34**	0.19	ug/g	1	CL	4/15/20	12658	4/15/20	19:29	MA EPH
Unadjusted C11-C22 Aromatics	**38**	19	ug/g	1	DBV	4/15/20	12658	4/16/20	6:48	MA EPH
C9-C18 Aliphatics	< 19	19	ug/g	1	DBV	4/15/20	12658	4/16/20	6:48	MA EPH
C19-C36 Aliphatics	**55**	19	ug/g	1	DBV	4/15/20	12658	4/16/20	6:48	MA EPH
C11-C22 Aromatics	**33**	19	ug/g	1	DBV	4/15/20	12658	4/16/20	6:48	MA EPH
Surrogate Recovery		**Limits**								
1-chloro-octadecane SUR	**52**	40-140	%	1	DBV	4/15/20	12658	4/16/20	6:48	MA EPH
o-terphenyl SUR	**65**	40-140	%	1	DBV	4/15/20	12658	4/16/20	6:48	MA EPH
2-fluorobiphenyl SUR	**72**	40-140	%	1	DBV	4/15/20	12658	4/16/20	6:48	MA EPH
2-bromonaphthalene SUR	**66**	40-140	%	1	DBV	4/15/20	12658	4/16/20	6:48	MA EPH

Project ID: Cedar Woods 2180311
Job ID: 52537
Sample#: 52537-010
Sample ID: DUP-2
Matrix: Solid Percent Dry: 85.6% Results expressed on a dry weight basis.
Sampled: 4/8/20 0:00

Parameter	Result	Reporting Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
naphthalene	< 0.20	0.20	ug/g	1	CL	4/15/20	12658	4/15/20	18:59	MA EPH
2-methylnaphthalene	< 0.20	0.20	ug/g	1	CL	4/15/20	12658	4/15/20	18:59	MA EPH
phenanthrene	< 0.20	0.20	ug/g	1	CL	4/15/20	12658	4/15/20	18:59	MA EPH
acenaphthene	< 0.20	0.20	ug/g	1	CL	4/15/20	12658	4/15/20	18:59	MA EPH
acenaphthylene	< 0.20	0.20	ug/g	1	CL	4/15/20	12658	4/15/20	18:59	MA EPH
fluorene	< 0.20	0.20	ug/g	1	CL	4/15/20	12658	4/15/20	18:59	MA EPH
anthracene	< 0.20	0.20	ug/g	1	CL	4/15/20	12658	4/15/20	18:59	MA EPH
fluoranthene	< 0.20	0.20	ug/g	1	CL	4/15/20	12658	4/15/20	18:59	MA EPH
pyrene	< 0.20	0.20	ug/g	1	CL	4/15/20	12658	4/15/20	18:59	MA EPH
benzo(a)anthracene	< 0.20	0.20	ug/g	1	CL	4/15/20	12658	4/15/20	18:59	MA EPH
chrysene	< 0.20	0.20	ug/g	1	CL	4/15/20	12658	4/15/20	18:59	MA EPH
benzo(b)fluoranthene	< 0.20	0.20	ug/g	1	CL	4/15/20	12658	4/15/20	18:59	MA EPH
benzo(k)fluoranthene	< 0.20	0.20	ug/g	1	CL	4/15/20	12658	4/15/20	18:59	MA EPH
benzo(a)pyrene	< 0.20	0.20	ug/g	1	CL	4/15/20	12658	4/15/20	18:59	MA EPH
indeno(1,2,3-cd)pyrene	< 0.20	0.20	ug/g	1	CL	4/15/20	12658	4/15/20	18:59	MA EPH
dibenzo(a,h)anthracene	< 0.20	0.20	ug/g	1	CL	4/15/20	12658	4/15/20	18:59	MA EPH
benzo(g,h,i)perylene	< 0.20	0.20	ug/g	1	CL	4/15/20	12658	4/15/20	18:59	MA EPH
Unadjusted C11-C22 Aromatics	< 20	20	ug/g	1	DBV	4/15/20	12658	4/16/20	4:31	MA EPH
C9-C18 Aliphatics	< 20	20	ug/g	1	DBV	4/15/20	12658	4/16/20	4:31	MA EPH
C19-C36 Aliphatics	< 20	20	ug/g	1	DBV	4/15/20	12658	4/16/20	4:31	MA EPH
C11-C22 Aromatics	< 20	20	ug/g	1	DBV	4/15/20	12658	4/16/20	4:31	MA EPH
Surrogate Recovery		**Limits**								
1-chloro-octadecane SUR	**43**	40-140	%	1	DBV	4/15/20	12658	4/16/20	4:31	MA EPH
o-terphenyl SUR	**49**	40-140	%	1	DBV	4/15/20	12658	4/16/20	4:31	MA EPH
2-fluorobiphenyl SUR	**70**	40-140	%	1	DBV	4/15/20	12658	4/16/20	4:31	MA EPH
2-bromonaphthalene SUR	**63**	40-140	%	1	DBV	4/15/20	12658	4/16/20	4:31	MA EPH

Project ID: Cedar Woods 2180311

Job ID: 52537

Sample#: 52537-001

Sample ID: SB-111 (0-1')

Matrix: Solid Percent Dry: 91.8% Results expressed on a dry weight basis.

Sampled: 4/8/20 9:10

Parameter	Result	Reporting Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Analysis Time	Reference
Antimony	**0.45**	0.34	ug/g	5	AGN	4/10/20	12634	4/11/20	4:25	SW3051A6020A
Arsenic	< 1.7	1.7	ug/g	5	AGN	4/10/20	12634	4/11/20	4:25	SW3051A6020A
Barium	**51**	3.4	ug/g	5	AGN	4/10/20	12634	4/11/20	4:25	SW3051A6020A
Beryllium	< 0.34	0.34	ug/g	5	AGN	4/10/20	12634	4/11/20	4:25	SW3051A6020A
Cadmium	< 0.34	0.34	ug/g	5	AGN	4/10/20	12634	4/11/20	4:25	SW3051A6020A
Chromium	**12**	3.4	ug/g	5	AGN	4/10/20	12634	4/11/20	4:25	SW3051A6020A
Lead	**21**	1.7	ug/g	5	AGN	4/10/20	12634	4/14/20	23:40	SW3051A6020A
Mercury	< 0.14	0.14	ug/g	1	AGN	4/9/20	12632	4/15/20	12:50	SW7471B
Nickel	**11**	3.4	ug/g	5	AGN	4/10/20	12634	4/11/20	4:25	SW3051A6020A
Selenium	< 3.4	3.4	ug/g	5	AGN	4/10/20	12634	4/11/20	4:25	SW3051A6020A
Silver	< 1.7	1.7	ug/g	5	AGN	4/10/20	12634	4/11/20	4:25	SW3051A6020A
Thallium	< 0.34	0.34	ug/g	5	AGN	4/10/20	12634	4/11/20	4:25	SW3051A6020A
Vanadium	**19**	3.4	ug/g	5	AGN	4/10/20	12634	4/11/20	4:25	SW3051A6020A
Zinc	**42**	3.4	ug/g	5	AGN	4/10/20	12634	4/14/20	23:40	SW3051A6020A

Sample#: 52537-002

Sample ID: SB-111 (0-3')

Matrix: Solid Percent Dry: 82.2% Results expressed on a dry weight basis.

Sampled: 4/8/20 9:12

Parameter	Result	Reporting Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Analysis Time	Reference
Antimony	**29**	0.48	ug/g	5	AGN	4/10/20	12634	4/14/20	23:50	SW3051A6020A
Arsenic	**12**	2.4	ug/g	5	AGN	4/10/20	12634	4/14/20	23:50	SW3051A6020A
Barium	**260** M	4.8	ug/g	5	AGN	4/10/20	12634	4/11/20	4:33	SW3051A6020A
M = The recovery for the matrix spike was 133%. The acceptance criteria is 75-125%.										
Beryllium	< 0.48	0.48	ug/g	5	AGN	4/10/20	12634	4/11/20	4:33	SW3051A6020A
Cadmium	**3.8** DM	0.48	ug/g	5	AGN	4/10/20	12634	4/14/20	23:50	SW3051A6020A
D = The RPD for the matrix spike duplicate was outside the 20% acceptance range. M = The recovery for the matrix spike was 192%. The acceptance criteria is 75-125%.										
Chromium	**43**	4.8	ug/g	5	AGN	4/10/20	12634	4/11/20	4:33	SW3051A6020A
Lead	**630** M	2.4	ug/g	5	AGN	4/10/20	12634	4/14/20	23:50	SW3051A6020A
M = The recovery for the matrix spike was 196%. The acceptance criteria is 75-125%.										
Mercury	**0.26**	0.18	ug/g	1	AGN	4/14/20	12647	4/16/20	16:10	SW7471B
Nickel	**52**	4.8	ug/g	5	AGN	4/10/20	12634	4/11/20	4:33	SW3051A6020A
Selenium	< 4.8 M	4.8	ug/g	5	AGN	4/10/20	12634	4/11/20	4:33	SW3051A6020A
M = The recovery for the matrix spike was 72%. The acceptance criteria is 75-125%.										
Silver	**4.5**	2.4	ug/g	5	AGN	4/10/20	12634	4/11/20	4:33	SW3051A6020A
Thallium	< 0.48	0.48	ug/g	5	AGN	4/10/20	12634	4/11/20	4:33	SW3051A6020A
Vanadium	**12**	4.8	ug/g	5	AGN	4/10/20	12634	4/11/20	4:33	SW3051A6020A
Zinc	**1500**	4.8	ug/g	5	AGN	4/10/20	12634	4/14/20	23:50	SW3051A6020A

Project ID: Cedar Woods 2180311

Job ID: 52537

Sample#: 52537-003

Sample ID: SB-111 (4-7')

Matrix: Solid Percent Dry: 79.9% Results expressed on a dry weight basis.

Sampled: 4/8/20 9:15

Parameter	Result	Reporting Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
Antimony	**4.6**	0.40	ug/g	5	AGN	4/10/20	12634	4/15/20	0:18	SW3051A6020A
Arsenic	**8.2**	2.0	ug/g	5	AGN	4/10/20	12634	4/15/20	0:18	SW3051A6020A
Barium	**80**	4.0	ug/g	5	AGN	4/10/20	12634	4/11/20	4:59	SW3051A6020A
Beryllium	**0.44**	0.40	ug/g	5	AGN	4/10/20	12634	4/11/20	4:59	SW3051A6020A
Cadmium	**0.70**	0.40	ug/g	5	AGN	4/10/20	12634	4/15/20	0:18	SW3051A6020A
Chromium	**13**	4.0	ug/g	5	AGN	4/10/20	12634	4/11/20	4:59	SW3051A6020A
Lead	**460**	2.0	ug/g	5	AGN	4/10/20	12634	4/15/20	0:18	SW3051A6020A
Mercury	< 0.16	0.16	ug/g	1	AGN	4/9/20	12632	4/15/20	12:52	SW7471B
Nickel	**18**	4.0	ug/g	5	AGN	4/10/20	12634	4/11/20	4:59	SW3051A6020A
Selenium	< 4.0	4.0	ug/g	5	AGN	4/10/20	12634	4/11/20	4:59	SW3051A6020A
Silver	< 2.0	2.0	ug/g	5	AGN	4/10/20	12634	4/11/20	4:59	SW3051A6020A
Thallium	**0.40**	0.40	ug/g	5	AGN	4/10/20	12634	4/11/20	4:59	SW3051A6020A
Vanadium	**14**	4.0	ug/g	5	AGN	4/10/20	12634	4/11/20	4:59	SW3051A6020A
Zinc	**330**	4.0	ug/g	5	AGN	4/10/20	12634	4/15/20	0:18	SW3051A6020A

Sample#: 52537-004

Sample ID: SB-113 (0-3')

Matrix: Solid Percent Dry: 81.1% Results expressed on a dry weight basis.

Sampled: 4/8/20 9:30

Parameter	Result	Reporting Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
Antimony	< 0.56	0.56	ug/g	5	AGN	4/10/20	12634	4/15/20	0:55	SW3051A6020A
Arsenic	**3.7**	2.8	ug/g	5	AGN	4/10/20	12634	4/15/20	0:55	SW3051A6020A
Barium	**48**	5.6	ug/g	5	AGN	4/10/20	12634	4/11/20	5:07	SW3051A6020A
Beryllium	**0.69**	0.56	ug/g	5	AGN	4/10/20	12634	4/11/20	5:07	SW3051A6020A
Cadmium	< 0.56	0.56	ug/g	5	AGN	4/10/20	12634	4/11/20	5:07	SW3051A6020A
Chromium	**15**	5.6	ug/g	5	AGN	4/10/20	12634	4/11/20	5:07	SW3051A6020A
Lead	**36**	2.8	ug/g	5	AGN	4/10/20	12634	4/15/20	0:55	SW3051A6020A
Mercury	< 0.16	0.16	ug/g	1	AGN	4/9/20	12632	4/15/20	12:54	SW7471B
Nickel	< 5.6	5.6	ug/g	5	AGN	4/10/20	12634	4/11/20	5:07	SW3051A6020A
Selenium	< 5.6	5.6	ug/g	5	AGN	4/10/20	12634	4/11/20	5:07	SW3051A6020A
Silver	< 2.8	2.8	ug/g	5	AGN	4/10/20	12634	4/11/20	5:07	SW3051A6020A
Thallium	< 0.56	0.56	ug/g	5	AGN	4/10/20	12634	4/11/20	5:07	SW3051A6020A
Vanadium	**16**	5.6	ug/g	5	AGN	4/10/20	12634	4/11/20	5:07	SW3051A6020A
Zinc	**43**	5.6	ug/g	5	AGN	4/10/20	12634	4/15/20	0:55	SW3051A6020A

Project ID: Cedar Woods 2180311

Job ID: 52537

Sample#: 52537-005

Sample ID: SB-113 (5-8')

Matrix: Solid Percent Dry: 87.2% Results expressed on a dry weight basis.

Sampled: 4/8/20 9:40

Parameter	Result	Reporting Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
Antimony	< 0.42	0.42	ug/g	5	AGN	4/10/20	12634	4/11/20	5:15	SW3051A6020A
Arsenic	< 2.1	2.1	ug/g	5	AGN	4/10/20	12634	4/11/20	5:15	SW3051A6020A
Barium	**26**	4.2	ug/g	5	AGN	4/10/20	12634	4/11/20	5:15	SW3051A6020A
Beryllium	< 0.42	0.42	ug/g	5	AGN	4/10/20	12634	4/11/20	5:15	SW3051A6020A
Cadmium	< 0.42	0.42	ug/g	5	AGN	4/10/20	12634	4/11/20	5:15	SW3051A6020A
Chromium	**5.7**	4.2	ug/g	5	AGN	4/10/20	12634	4/11/20	5:15	SW3051A6020A
Lead	**3.2**	2.1	ug/g	5	AGN	4/10/20	12634	4/15/20	1:04	SW3051A6020A
Mercury	< 0.15	0.15	ug/g	1	AGN	4/9/20	12632	4/15/20	12:56	SW7471B
Nickel	**6.2**	4.2	ug/g	5	AGN	4/10/20	12634	4/11/20	5:15	SW3051A6020A
Selenium	< 4.2	4.2	ug/g	5	AGN	4/10/20	12634	4/11/20	5:15	SW3051A6020A
Silver	< 2.1	2.1	ug/g	5	AGN	4/10/20	12634	4/11/20	5:15	SW3051A6020A
Thallium	< 0.42	0.42	ug/g	5	AGN	4/10/20	12634	4/11/20	5:15	SW3051A6020A
Vanadium	**7.8**	4.2	ug/g	5	AGN	4/10/20	12634	4/11/20	5:15	SW3051A6020A
Zinc	**18**	4.2	ug/g	5	AGN	4/10/20	12634	4/15/20	1:04	SW3051A6020A

Sample#: 52537-006

Sample ID: SB-115 (0-3')

Matrix: Solid Percent Dry: 89.3% Results expressed on a dry weight basis.

Sampled: 4/8/20 10:10

Parameter	Result	Reporting Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
Antimony	< 0.40	0.40	ug/g	5	AGN	4/10/20	12634	4/11/20	5:49	SW3051A6020A
Arsenic	**2.6**	2.0	ug/g	5	AGN	4/10/20	12634	4/11/20	5:49	SW3051A6020A
Barium	**30**	4.0	ug/g	5	AGN	4/10/20	12634	4/11/20	5:49	SW3051A6020A
Beryllium	**0.56**	0.40	ug/g	5	AGN	4/10/20	12634	4/11/20	5:49	SW3051A6020A
Cadmium	< 0.40	0.40	ug/g	5	AGN	4/10/20	12634	4/11/20	5:49	SW3051A6020A
Chromium	**8.0**	4.0	ug/g	5	AGN	4/10/20	12634	4/11/20	5:49	SW3051A6020A
Lead	**14**	2.0	ug/g	5	AGN	4/10/20	12634	4/15/20	1:14	SW3051A6020A
Mercury	< 0.13	0.13	ug/g	1	AGN	4/9/20	12632	4/15/20	12:57	SW7471B
Nickel	**5.4**	4.0	ug/g	5	AGN	4/10/20	12634	4/11/20	5:49	SW3051A6020A
Selenium	< 4.0	4.0	ug/g	5	AGN	4/10/20	12634	4/11/20	5:49	SW3051A6020A
Silver	< 2.0	2.0	ug/g	5	AGN	4/10/20	12634	4/11/20	5:49	SW3051A6020A
Thallium	< 0.40	0.40	ug/g	5	AGN	4/10/20	12634	4/11/20	5:49	SW3051A6020A
Vanadium	**11**	4.0	ug/g	5	AGN	4/10/20	12634	4/11/20	5:49	SW3051A6020A
Zinc	**28**	4.0	ug/g	5	AGN	4/10/20	12634	4/15/20	1:14	SW3051A6020A

Project ID: Cedar Woods 2180311

Job ID: 52537

Sample#: 52537-007

Sample ID: SB-115 (5-8')

Matrix: Solid Percent Dry: 66.1% Results expressed on a dry weight basis.

Sampled: 4/8/20 10:20

Parameter	Result	Reporting Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
Antimony	**1.7**	0.64	ug/g	5	AGN	4/10/20	12634	4/15/20	1:23	SW3051A6020A
Arsenic	**8.3**	3.2	ug/g	5	AGN	4/10/20	12634	4/11/20	5:57	SW3051A6020A
Barium	**94**	6.4	ug/g	5	AGN	4/10/20	12634	4/11/20	5:57	SW3051A6020A
Beryllium	< 0.64	0.64	ug/g	5	AGN	4/10/20	12634	4/11/20	5:57	SW3051A6020A
Cadmium	< 0.64	0.64	ug/g	5	AGN	4/10/20	12634	4/11/20	5:57	SW3051A6020A
Chromium	**15**	6.4	ug/g	5	AGN	4/10/20	12634	4/11/20	5:57	SW3051A6020A
Lead	**330**	3.2	ug/g	5	AGN	4/10/20	12634	4/15/20	1:23	SW3051A6020A
Mercury	< 0.21	0.21	ug/g	1	AGN	4/14/20	12647	4/16/20	16:16	SW7471B
Nickel	**9.9**	6.4	ug/g	5	AGN	4/10/20	12634	4/11/20	5:57	SW3051A6020A
Selenium	< 6.4	6.4	ug/g	5	AGN	4/10/20	12634	4/11/20	5:57	SW3051A6020A
Silver	< 3.2	3.2	ug/g	5	AGN	4/10/20	12634	4/11/20	5:57	SW3051A6020A
Thallium	< 0.64	0.64	ug/g	5	AGN	4/10/20	12634	4/11/20	5:57	SW3051A6020A
Vanadium	**16**	6.4	ug/g	5	AGN	4/10/20	12634	4/11/20	5:57	SW3051A6020A
Zinc	**210**	6.4	ug/g	5	AGN	4/10/20	12634	4/15/20	1:23	SW3051A6020A

Sample#: 52537-008

Sample ID: SB-114 (0-3')

Matrix: Solid Percent Dry: 93.7% Results expressed on a dry weight basis.

Sampled: 4/8/20 10:30

Parameter	Result	Reporting Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
Antimony	< 0.48	0.48	ug/g	5	AGN	4/10/20	12634	4/11/20	6:05	SW3051A6020A
Arsenic	< 2.4	2.4	ug/g	5	AGN	4/10/20	12634	4/11/20	6:05	SW3051A6020A
Barium	**17**	4.8	ug/g	5	AGN	4/10/20	12634	4/11/20	6:05	SW3051A6020A
Beryllium	< 0.48	0.48	ug/g	5	AGN	4/10/20	12634	4/11/20	6:05	SW3051A6020A
Cadmium	< 0.48	0.48	ug/g	5	AGN	4/10/20	12634	4/11/20	6:05	SW3051A6020A
Chromium	< 4.8	4.8	ug/g	5	AGN	4/10/20	12634	4/11/20	6:05	SW3051A6020A
Lead	**21**	2.4	ug/g	5	AGN	4/10/20	12634	4/15/20	1:32	SW3051A6020A
Mercury	< 0.15	0.15	ug/g	1	AGN	4/14/20	12647	4/16/20	16:18	SW7471B
Nickel	< 4.8	4.8	ug/g	5	AGN	4/10/20	12634	4/11/20	6:05	SW3051A6020A
Selenium	< 4.8	4.8	ug/g	5	AGN	4/10/20	12634	4/11/20	6:05	SW3051A6020A
Silver	< 2.4	2.4	ug/g	5	AGN	4/10/20	12634	4/11/20	6:05	SW3051A6020A
Thallium	< 0.48	0.48	ug/g	5	AGN	4/10/20	12634	4/11/20	6:05	SW3051A6020A
Vanadium	< 4.8	4.8	ug/g	5	AGN	4/10/20	12634	4/11/20	6:05	SW3051A6020A
Zinc	**40**	4.8	ug/g	5	AGN	4/10/20	12634	4/15/20	1:32	SW3051A6020A

Project ID: Cedar Woods 2180311

Job ID: 52537

Sample#: 52537-009

Sample ID: SB-114 (5-8')

Matrix: Solid Percent Dry: 68.7% Results expressed on a dry weight basis.

Sampled: 4/8/20 10:50

Parameter	Result	Reporting Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
Antimony	**0.66**	0.59	ug/g	5	AGN	4/10/20	12634	4/15/20	1:42	SW3051A6020A
Arsenic	< 15	15	ug/g	25	AGN	4/10/20	12634	4/16/20	14:46	SW3051A6020A
Barium	**210**	5.9	ug/g	5	AGN	4/10/20	12634	4/11/20	6:14	SW3051A6020A
Beryllium	< 0.59	0.59	ug/g	5	AGN	4/10/20	12634	4/15/20	1:42	SW3051A6020A
Cadmium	< 0.59	0.59	ug/g	5	AGN	4/10/20	12634	4/11/20	6:14	SW3051A6020A
Chromium	< 29	29	ug/g	25	AGN	4/10/20	12634	4/16/20	14:46	SW3051A6020A
Lead	**270**	2.9	ug/g	5	AGN	4/10/20	12634	4/15/20	1:42	SW3051A6020A
Mercury	< 0.21	0.21	ug/g	1	AGN	4/14/20	12647	4/16/20	16:19	SW7471B
Nickel	< 29	29	ug/g	25	AGN	4/10/20	12634	4/16/20	14:46	SW3051A6020A
Selenium	< 29	29	ug/g	25	AGN	4/10/20	12634	4/16/20	14:46	SW3051A6020A
Silver	< 2.9	2.9	ug/g	5	AGN	4/10/20	12634	4/11/20	6:14	SW3051A6020A
Thallium	< 0.59	0.59	ug/g	5	AGN	4/10/20	12634	4/11/20	6:14	SW3051A6020A
Vanadium	< 29	29	ug/g	25	AGN	4/10/20	12634	4/16/20	14:46	SW3051A6020A
Zinc	**340**	29	ug/g	25	AGN	4/10/20	12634	4/16/20	14:46	SW3051A6020A

Sample#: 52537-010

Sample ID: DUP-2

Matrix: Solid Percent Dry: 85.6% Results expressed on a dry weight basis.

Sampled: 4/8/20 0:00

Parameter	Result	Reporting Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
Antimony	< 0.44	0.44	ug/g	5	AGN	4/10/20	12634	4/11/20	6:22	SW3051A6020A
Arsenic	< 2.2	2.2	ug/g	5	AGN	4/10/20	12634	4/11/20	6:22	SW3051A6020A
Barium	**26**	4.4	ug/g	5	AGN	4/10/20	12634	4/11/20	6:22	SW3051A6020A
Beryllium	< 0.44	0.44	ug/g	5	AGN	4/10/20	12634	4/11/20	6:22	SW3051A6020A
Cadmium	< 0.44	0.44	ug/g	5	AGN	4/10/20	12634	4/11/20	6:22	SW3051A6020A
Chromium	**6.3**	4.4	ug/g	5	AGN	4/10/20	12634	4/11/20	6:22	SW3051A6020A
Lead	**3.4**	2.2	ug/g	5	AGN	4/10/20	12634	4/15/20	1:51	SW3051A6020A
Mercury	< 0.14	0.14	ug/g	1	AGN	4/14/20	12647	4/16/20	16:21	SW7471B
Nickel	**5.9**	4.4	ug/g	5	AGN	4/10/20	12634	4/11/20	6:22	SW3051A6020A
Selenium	< 4.4	4.4	ug/g	5	AGN	4/10/20	12634	4/11/20	6:22	SW3051A6020A
Silver	< 2.2	2.2	ug/g	5	AGN	4/10/20	12634	4/11/20	6:22	SW3051A6020A
Thallium	< 0.44	0.44	ug/g	5	AGN	4/10/20	12634	4/11/20	6:22	SW3051A6020A
Vanadium	**8.3**	4.4	ug/g	5	AGN	4/10/20	12634	4/11/20	6:22	SW3051A6020A
Zinc	**18**	4.4	ug/g	5	AGN	4/10/20	12634	4/15/20	1:51	SW3051A6020A

Project ID: Cedar Woods 2180311
Job ID: 52537

Sample#: 52537-003
Sample ID: SB-111 (4-7')
Matrix: Solid Percent Dry: 79.9% Results expressed on a dry weight basis.
Sampled: 4/8/20 9:15

Parameter	Result	Reporting Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
Chromium, Hexavalent	**1.7**	0.48	ug/g	1	SFM		2001871	4/10/20	11:30	SW3060A7196A
Oxidation Reduction Potential	**230**		mV	1	WAS		2001852	4/9/20	6:15	ASTM1498-08
pH	**7.3**		pH	1	WAS		2001855	4/9/20	5:57	SW9045C

Sample#: 52537-005
Sample ID: SB-113 (5-8')
Matrix: Solid Percent Dry: 87.2% Results expressed on a dry weight basis.
Sampled: 4/8/20 9:40

Parameter	Result	Reporting Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
Chromium, Hexavalent	< 0.40	0.40	ug/g	1	SFM		2001871	4/10/20	11:30	SW3060A7196A
Oxidation Reduction Potential	**230**		mV	1	WAS		2001852	4/9/20	6:33	ASTM1498-08
pH	**8.2**		pH	1	WAS		2001855	4/9/20	6:04	SW9045C

Sample#: 52537-007
Sample ID: SB-115 (5-8')
Matrix: Solid Percent Dry: 66.1% Results expressed on a dry weight basis.
Sampled: 4/8/20 10:20

Parameter	Result	Reporting Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
Chromium, Hexavalent	< 0.59	0.59	ug/g	1	SFM		2001871	4/10/20	11:30	SW3060A7196A
Oxidation Reduction Potential	**160**		mV	1	WAS		2001852	4/9/20	7:00	ASTM1498-08
pH	**7.0**		pH	1	WAS		2001855	4/9/20	6:08	SW9045C

Sample#: 52537-009
Sample ID: SB-114 (5-8')
Matrix: Solid Percent Dry: 68.7% Results expressed on a dry weight basis.
Sampled: 4/8/20 10:50

Parameter	Result	Reporting Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
Chromium, Hexavalent	< 0.59 M	0.59	ug/g	1	SFM		2001871	4/10/20	11:30	SW3060A7196A
M = The percent recovery in the matrix spike was outside acceptance criteria. See case narrative.										
Oxidation Reduction Potential	**200**		mV	1	WAS		2001852	4/9/20	7:08	ASTM1498-08
pH	**8.1**		pH	1	WAS		2001855	4/9/20	6:15	SW9045C

Quality Control Report

124 Heritage Avenue Unit 16
Portsmouth, NH 03801
www.absoluteresourceassociates.com

MassDEP Analytical Protocol Certification Form

Laboratory Name: Absolute Resource Associates	Project #: 2180311
Project Location: Massachusetts	RTN:

This Form provides certifications for the following data set: list Laboratory Sample ID Number(s): 52537

Matrices: ☐ Groundwater/Surface Water ☑ Soil/Sediment ☐ Drinking Water ☐ Air ☐ Other:

CAM Protocol (check all that apply below):

8260 VOC CAM II A ☐	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 ☐
8270 SVOC CAM II B ☐	7010 Metals CAM III C ☐	MassDEP VPH (GC/MS) CAM IV C ☐	8081 Pesticides CAM V B ☐	7196 Hex Cr CAM VI B ☑	MassDEP APH CAM IX A ☐
6010 Metals CAM III A ☐	6020 Metals CAM III D ☑	MassDEP EPH CAM IV B ☑	8151 Herbicides CAM V C ☐	8330 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 ☐ No
B	Were the analytical method(s) and all associated QC requirements specified in the selected CAM protocol(s) followed?	☑ Yes ☐ 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 ☐ No
D	Does the laboratory report comply with all the reporting requirements specified in CAM VII A, "Quality Assurance and Quality Control Guidelines for the Acquisition and Reporting of Analytical Data"?	☑ Yes ☐ No
E	VPH, EPH, APH, and TO-15 only a. VPH, EPH, and APH Methods only: Was each method conducted without significant modification(s)? (Refer to the individual method(s) for a list of significant modifications). b. APH and TO-15 Methods only: Was the complete analyte list reported for each method?	☑ Yes ☐ No ☐ 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 ☐ 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 protocol(s)?	☐ Yes ☑ No[1]

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

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

[1]*All negative responses must be addressed in an attached 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, is accurate and complete.

Signature: _____ **Position:** Chief Operating Officer

Printed Name: Aaron DeWees **Date:** 4/20/20

Sample Integrity Table

Parameter	Method	Matrix	Minimum Volume	Recommended Container(s)	Required Preservation	Holding Time
Volatile Organics	EPA 8260	Aqueous	40mL	2 x 40mL VOA Vials with Teflon lined septa	Cool to ≤6°C 1:1 HCl to pH <2	14 Days
Volatile Organics	EPA 8260	Solid	40mL	1 x 40mL VOA Vial with 10mLs Methanol and 1 unpreserved container for percent moisture	Cool to ≤6°C Methanol	14 Days
Semivolatile Organics	EPA 8270	Aqueous	1L	1L Amber Glass Bottle w/Teflon liner	Cool to ≤6°C	7 Days
Semivolatile Organics	EPA 8270	Solid	20g	4oz Amber Glass Jar w/Teflon liner	Cool to ≤6°C	14 Days
Organochlorine Pesticides	EPA 8081	Aqueous	1L	1L Amber Glass Bottle w/Teflon liner	Cool to ≤6°C	7 Days
Organochlorine Pesticides	EPA 8081	Solid	20g	4oz Glass Jar w/Teflon liner	Cool to ≤6°C	14 Days
PCBs	EPA 8082	Aqueous	1L	1L Amber Glass Bottle w/Teflon liner	Cool to ≤6°C	365 Days
PCBs	EPA 8082	Solid	20g	4oz Glass Jar w/Teflon liner	Cool to ≤6°C	365 Days
Herbicides (subcontracted)	EPA 8151	Aqueous	1L	1L Amber Glass Bottle w/Teflon liner	Cool to ≤6°C	7 Days
Herbicides (subcontracted)	EPA 8151	Solid	30g	4oz Glass Jar w/Teflon liner	Cool to ≤6°C	14 Days
MA DEP VPH	MADEP VPH	Aqueous	40mL	2 x 40mL VOA Vials with Teflon lined septa	Cool to ≤6°C 1:1 HCl to pH <2	14 Days
MA DEP VPH	MADEP VPH	Solid	40mL	1 x 40mL VOA Vial with 10mLs Methanol and 1 unpreserved container for percent moisture	Cool to ≤6°C Methanol	28 Days
MA DEP EPH	MADEP EPH	Aqueous	1L	1L Amber Glass Bottle w/Teflon liner	Cool to ≤6°C 1:1 HCl to pH <2	14 Days
MA DEP EPH	MADEP EPH	Solid	30g	4oz Amber Glass Jar w/Teflon liner	Cool to ≤6°C	14 Days
Total Metals	EPA 6010	Aqueous	100mL	250mL Polyethylene Bottle	1:1 HNO_3 to pH <2	180 Days
Dissolved Metals	EPA 6010	Aqueous	100mL	250mL Polyethylene Bottle	Filter First 1:1 HNO_3 to pH <2	180 Days
Total Metals	EPA 6010	Solid	15g	4oz Glass Jar w/Teflon liner	Cool to ≤6°C	180 Days
Total Mercury (may be combined with Total Metals)	EPA 7470	Aqueous	100mL	125mL Polyethylene Bottle	1:1 HNO_3 to pH <2	28 Days
Total Mercury (may be combined with Total Metals)	EPA 7471	Solid	15g	4oz Glass Jar w/Teflon liner	Cool to ≤6°C	28 Days
Chromium, Hexavalent	EPA 7196	Aqueous	100mL	125mL Polyethylene Bottle	Cool to ≤6°C (NH4)2SO4 buffer	28 Days
Chromium, Hexavalent (subcontract)	EPA 7196	Solid	15g	4oz Glass Jar w/Teflon liner	Cool to ≤6°C	30 Days
Cyanide, Total	EPA 9014	Aqueous	125mL	125mL Polyethylene Bottle	Cool to ≤6°C 1:1 NaOH to pH >8	14 Days
Cyanide, Total	EPA 9014	Solid	15g	4oz Glass Jar w/Teflon liner	Cool to ≤6°C	14 Days

Absolute Resource Associates
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Portsmouth, NH 03801
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Absolute Resource associates

Case Narrative
Lab # 52537

Sample Receiving and Chain of Custody Discrepancies

Samples were received in acceptable condition, between 0 and 6 degrees C, on ice, and in accordance with sample handling, preservation and integrity guidelines.
As noted on the result page, the VPH samples did not meet the 1:1 +/-25% methanol to soil ratio.

Calibration

SVOC: See the included table for a list of compounds quantitated by quadratic equation.

Method Blank

No exceptions noted.

Surrogate Recoveries

VPH: Samples 52537-003, -005, and -010 had a recovery for a,a,a-trifluorotoluene that was low and outside acceptance limits.

Laboratory Control Sample Results

VOC: The LCSD2001516 did not meet the acceptance criteria for t-butanol (TBA). Since <10% of the compounds were outside of the acceptance criteria, reanalysis is not required.

Matrix Spike/Matrix Spike Duplicate/Duplicate Results

Metals: The percent recovery in the MS/D of 52537-002 for barium (133%), cadmium (192%), lead (196 and 138%) and selenium (72 and 74%) were outside the acceptance criteria of 75-125%. The RPD for cadmium was 63% which was outside the acceptance limit of 20%. All other batch QC was within acceptance.

Chromium, Hexavalent: The matrix spike/duplicate for 52537-009 did not meet the acceptance criteria. The percent recovery was acceptable in the associated CRM/CRMD. The results for the ORP and pH analysis show the samples exhibits a reducing nature therefore resulting in poor spike recovery. The sample has been qualified accordingly.

Other

VPH: The trap used for VPH analysis is a Tekmar STRATUM Purge Trap 9. The column used for VPH analysis is a Restek Rtx-502.2, 105m, 0.53mmID, and 3um df.

MassDEP Analytical Protocol Certification Form Questions A through I

No explanation is needed for Questions A through I answered in the affirmative.
Question G: The CAM protocol reporting limits were not achieved for this project due to dilutions necessary for sample analysis. Box G is "No."
Question H: See surrogate section above. Box H is "No."

Quantitation by Quadratic Equation
Lab # 52537

SVOC: Quantitation of the following compounds was based on a quadratic equation:

2-methylnaphthalene
benzo(k)fluoranthene
indeno(1,2,3-cd)pyrene
dibenzo(a,h)anthracene
benzo(g,h,i)perylene

GLOSSARY

%R	Percent Recovery
BLK	Blank (Method Blank, Preparation Blank)
CCB	Continuing Calibration Blank
CCV	Continuing Calibration Verification
CRM	Certified Reference Material (associated with solid Metals samples)
CRMD	Certified Reference Material Duplicate (associated with solid Metals samples)
Dil'n	Dilution
DL	Detection Limit
DUP	Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
LOD	Limit of Detection
LOQ	Limit of Quantitation
MB	Methanol Blank (associated with solid VOC samples)
MLCS	Methanol Laboratory Control Sample (associated with solid VOC samples)
MLCSD	Methanol Laboratory Control Sample Duplicate (associated with solid VOC samples)
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PB	Preparation Blank
QC	Quality Control
RL	Reporting Limit
RPD	Relative Percent Difference
SUR	Surrogate

Method	QC ID	Parameter	Associated Sample		Result	Units	Amt Added	%R	Limits		RPD	RPD Limit
MA VPH	MB12628	Unadjusted C5-C8 Aliphatics		<	5.0	ug/g						
		Unadjusted C9-C12 Aliphatics		<	5.0	ug/g						
		methyl t-butyl ether (MTBE)		<	0.10	ug/g						
		benzene		<	0.10	ug/g						
		toluene		<	0.10	ug/g						
		ethylbenzene		<	0.10	ug/g						
		m&p-xylenes		<	0.10	ug/g						
		o-xylene		<	0.10	ug/g						
		naphthalene		<	0.25	ug/g						
		C5-C8 Aliphatics		<	5.0	ug/g						
		C9-C12 Aliphatics		<	5.0	ug/g						
		C9-C10 Aromatics		<	5.0	ug/g						
		2,5-dibromotoluene as Aromatic SUR			113	%			70	130		
		2,5-dibromotoluene as Aliphatic SUR			112	%			70	130		
		a,a,a-trifluorotoluene SUR			90	%			70	130		
MA VPH	MLCS12628	Unadjusted C5-C8 Aliphatics			14	ug/g	15	93	70	130		
		Unadjusted C9-C12 Aliphatics			13	ug/g	15	89	70	130		
		methyl t-butyl ether (MTBE)			4.6	ug/g	5	92	70	130		
		benzene			4.8	ug/g	5	97	70	130		
		toluene			4.8	ug/g	5	95	70	130		
		ethylbenzene			4.8	ug/g	5	96	70	130		
		m&p-xylenes			9.7	ug/g	10	97	70	130		
		o-xylene			4.8	ug/g	5	96	70	130		
		naphthalene			5.0	ug/g	5	100	70	130		
		C5-C8 Aliphatics		<	5.0	ug/g			70	130		
		C9-C12 Aliphatics		<	5.0	ug/g			70	130		
		C9-C10 Aromatics			5.1	ug/g	5	102	70	130		
		2,5-dibromotoluene as Aromatic SUR			111	%			70	130		
		2,5-dibromotoluene as Aliphatic SUR			112	%			70	130		
		a,a,a-trifluorotoluene SUR			86	%			70	130		
MA VPH	MLCSD12628	Unadjusted C5-C8 Aliphatics			14	ug/g	15	93	70	130	0	25
		Unadjusted C9-C12 Aliphatics			14	ug/g	15	90	70	130	2	25
		methyl t-butyl ether (MTBE)			4.7	ug/g	5	93	70	130	1	25
		benzene			4.9	ug/g	5	99	70	130	2	25
		toluene			4.9	ug/g	5	98	70	130	3	25
		ethylbenzene			4.9	ug/g	5	99	70	130	3	25
		m&p-xylenes			10.0	ug/g	10	100	70	130	3	25
		o-xylene			4.9	ug/g	5	99	70	130	2	25
		naphthalene			5.1	ug/g	5	102	70	130	2	25
		C5-C8 Aliphatics		<	5.0	ug/g			70	130		25
		C9-C12 Aliphatics		<	5.0	ug/g			70	130		25
		C9-C10 Aromatics			5.2	ug/g	5	103	70	130	1	25
		2,5-dibromotoluene as Aromatic SUR			99	%			70	130		
		2,5-dibromotoluene as Aliphatic SUR			100	%			70	130		
		a,a,a-trifluorotoluene SUR			90	%			70	130		

Method	QC ID	Parameter	Associated Sample		Result	Units	Amt Added	%R	Limits		RPD	RPD Limit
MA EPH	BLK12658	naphthalene		<	0.20	ug/g						
		2-methylnaphthalene		<	0.20	ug/g						
		phenanthrene		<	0.20	ug/g						
		acenaphthene		<	0.20	ug/g						
		acenaphthylene		<	0.20	ug/g						
		fluorene		<	0.20	ug/g						
		anthracene		<	0.20	ug/g						
		fluoranthene		<	0.20	ug/g						
		pyrene		<	0.20	ug/g						
		benzo(a)anthracene		<	0.20	ug/g						
		chrysene		<	0.20	ug/g						
		benzo(b)fluoranthene		<	0.20	ug/g						
		benzo(k)fluoranthene		<	0.20	ug/g						
		benzo(a)pyrene		<	0.20	ug/g						
		indeno(1,2,3-cd)pyrene		<	0.20	ug/g						
		dibenzo(a,h)anthracene		<	0.20	ug/g						
		benzo(g,h,i)perylene		<	0.20	ug/g						
		Unadjusted C11-C22 Aromatics		<	20	ug/g						
		C9-C18 Aliphatics		<	20	ug/g						
		C19-C36 Aliphatics		<	20	ug/g						
		C11-C22 Aromatics		<	20	ug/g						
		1-chloro-octadecane SUR			44	%			40	140		
		o-terphenyl SUR			48	%			40	140		
		2-fluorobiphenyl SUR			64	%			40	140		
		2-bromonaphthalene SUR			59	%			40	140		

Method	QC ID	Parameter	Associated Sample		Result	Units	Amt Added	%R	Limits		RPD	RPD Limit
MA EPH	LCS12658	naphthalene			2.7	ug/g	6	45	40	140		
		2-methylnaphthalene			2.8	ug/g	6	47	40	140		
		phenanthrene			3.2	ug/g	6	54	40	140		
		acenaphthene			2.6	ug/g	6	43	40	140		
		acenaphthylene			2.5	ug/g	6	42	40	140		
		fluorene			2.8	ug/g	6	46	40	140		
		anthracene			3.2	ug/g	6	53	40	140		
		fluoranthene			3.4	ug/g	6	57	40	140		
		pyrene			3.3	ug/g	6	55	40	140		
		benzo(a)anthracene			3.3	ug/g	6	54	40	140		
		chrysene			3.3	ug/g	6	54	40	140		
		benzo(b)fluoranthene			3.1	ug/g	6	51	40	140		
		benzo(k)fluoranthene			3.1	ug/g	6	51	40	140		
		benzo(a)pyrene			3.1	ug/g	6	52	40	140		
		indeno(1,2,3-cd)pyrene			3.8	ug/g	6	63	40	140		
		dibenzo(a,h)anthracene			3.8	ug/g	6	64	40	140		
		benzo(g,h,i)perylene			3.9	ug/g	6	64	40	140		
		Unadjusted C11-C22 Aromatics			60	ug/g	102	59	40	140		
		C9-C18 Aliphatics		<	20	ug/g	36	45	40	140		
		C19-C36 Aliphatics			43	ug/g	48	91	40	140		
		C11-C22 Aromatics		<	20	ug/g			40	140		
		1-chloro-octadecane SUR			47	%			40	140		
		o-terphenyl SUR			54	%			40	140		
		2-fluorobiphenyl SUR			73	%			40	140		
		2-bromonaphthalene SUR			69	%			40	140		

Method	QC ID	Parameter	Associated Sample		Result	Units	Amt Added	%R	Limits		RPD	RPD Limit
MA EPH	LCSD12658	naphthalene			2.9	ug/g	6	48	40	140	7	25
		2-methylnaphthalene			3.0	ug/g	6	50	40	140	7	25
		phenanthrene			3.4	ug/g	6	57	40	140	7	25
		acenaphthene			2.7	ug/g	6	45	40	140	4	25
		acenaphthylene			2.7	ug/g	6	44	40	140	6	25
		fluorene			2.9	ug/g	6	49	40	140	6	25
		anthracene			3.4	ug/g	6	56	40	140	6	25
		fluoranthene			3.6	ug/g	6	61	40	140	6	25
		pyrene			3.5	ug/g	6	59	40	140	7	25
		benzo(a)anthracene			3.6	ug/g	6	60	40	140	9	25
		chrysene			3.6	ug/g	6	59	40	140	9	25
		benzo(b)fluoranthene			3.5	ug/g	6	58	40	140	12	25
		benzo(k)fluoranthene			3.4	ug/g	6	57	40	140	10	25
		benzo(a)pyrene			3.4	ug/g	6	57	40	140	10	25
		indeno(1,2,3-cd)pyrene			4.1	ug/g	6	68	40	140	8	25
		dibenzo(a,h)anthracene			4.1	ug/g	6	69	40	140	8	25
		benzo(g,h,i)perylene			4.2	ug/g	6	70	40	140	9	25
		Unadjusted C11-C22 Aromatics			63	ug/g	102	62	40	140	4	25
		C9-C18 Aliphatics		<	20	ug/g	36	44	40	140	2	25
		C19-C36 Aliphatics			44	ug/g	48	91	40	140	0	25
		C11-C22 Aromatics		<	20	ug/g			40	140		25
		1-chloro-octadecane SUR			46	%			40	140		
		o-terphenyl SUR			54	%			40	140		
		2-fluorobiphenyl SUR			69	%			40	140		
		2-bromonaphthalene SUR			64	%			40	140		

Method	QC ID	Parameter	Associated Sample		Result	Units	Amt Added	%R	Limits		RPD	RPD Limit
SW3051A6020A	BLK12634	Silver		<	2.5	ug/g						
		Arsenic		<	2.5	ug/g						
		Barium		<	5.0	ug/g						
		Beryllium		<	0.50	ug/g						
		Cadmium		<	0.50	ug/g						
		Chromium		<	5.0	ug/g						
		Nickel		<	5.0	ug/g						
		Lead		<	2.5	ug/g						
		Antimony		<	0.50	ug/g						
		Selenium		<	5.0	ug/g						
		Thallium		<	0.50	ug/g						
		Vanadium		<	5.0	ug/g						
		Zinc		<	5.0	ug/g						
SW3051A6020A	CRM12634	Silver			44.4	ug/g	53.8		31.9	59.7		
		Arsenic			169	ug/g	219		129	240		
		Barium			582	ug/g	788		509	867		
		Beryllium			201	ug/g	247		160	272		
		Cadmium			145	ug/g	175		111	192		
		Chromium			286	ug/g	375		223	414		
		Nickel			248	ug/g	318		193	358		
		Lead			239	ug/g	321		207	353		
		Antimony			81.0	ug/g	159		15.9	180		
		Selenium			102	ug/g	145		78.5	160		
		Thallium			81.9	ug/g	98.6		53.7	111		
		Vanadium			186	ug/g	267		168	294		
		Zinc			234	ug/g	311		190	352		
SW3051A6020A	CRMD12634	Silver			46.5	ug/g	53.8		31.9	59.7	4	20
		Arsenic			178	ug/g	219		129	240	5	20
		Barium			597	ug/g	788		509	867	3	20
		Beryllium			205	ug/g	247		160	272	2	20
		Cadmium			151	ug/g	175		111	192	4	20
		Chromium			291	ug/g	375		223	414	2	20
		Nickel			251	ug/g	318		193	358	1	20
		Lead			245	ug/g	321		207	353	3	20
		Antimony			82.8	ug/g	159		15.9	180	2	20
		Selenium			106	ug/g	145		78.5	160	4	20
		Thallium			85.1	ug/g	98.6		53.7	111	4	20
		Vanadium			188	ug/g	267		168	294	1	20
		Zinc			237	ug/g	311		190	352	1	20

Method	QC ID	Parameter	Associated Sample		Result	Units	Amt Added	%R		Limits		RPD		RPD Limit
SW3051A6020A	MS12634	Silver	52537-002		130	ug/g	133	97		75	125			
		Arsenic	52537-002		240	ug/g	266	87		75	125			
		Barium	52537-002		550	ug/g	266	109		75	125			
		Beryllium	52537-002		260	ug/g	266	99		75	125			
		Cadmium	52537-002		280	ug/g	266	103		75	125			
		Chromium	52537-002		290	ug/g	266	91		75	125			
		Nickel	52537-002		270	ug/g	266	83		75	125			
		Lead	52537-002		1200	ug/g	266.7	196	*	75	125			
		Antimony	52537-002		310	ug/g	266	105		75	125			
		Selenium	52537-002		190	ug/g	266	72	*	75	125			
		Thallium	52537-002		120	ug/g	133	89		75	125			
		Vanadium	52537-002		250	ug/g	266	91		75	125			
		Zinc	52537-002		1800	ug/g	266.7	107		75	125			
SW3051A6020A	MSD12634	Silver	52537-002		140	ug/g	138	98		75	125	5		20
		Arsenic	52537-002		250	ug/g	276	87		75	125	3		20
		Barium	52537-002		630	ug/g	276	133	*	75	125	13		20
		Beryllium	52537-002		280	ug/g	276	101		75	125	6		20
		Cadmium	52537-002		540	ug/g	276	192	*	75	125	63	*	20
		Chromium	52537-002		300	ug/g	276	92		75	125	5		20
		Nickel	52537-002		300	ug/g	276	91		75	125	10		20
		Lead	52537-002		1000	ug/g	276.4	138	*	75	125	13		20
		Antimony	52537-002		320	ug/g	276	106		75	125	4		20
		Selenium	52537-002		200	ug/g	276	74	*	75	125	6		20
		Thallium	52537-002		130	ug/g	138	93		75	125	8		20
		Vanadium	52537-002		260	ug/g	276	91		75	125	3		20
		Zinc	52537-002		2000	ug/g	276.4	187		75	125	12		20
SW7471B	BLK12632	Mercury		<	0.14	ug/g								
SW7471B	CRM12632	Mercury			0.226	ug/g	0.221			0.0908	0.351			
SW7471B	CRMD12632	Mercury			0.216	ug/g	0.221			0.0908	0.351	4		35
SW7471B	MS12632	Mercury	52513-004		0.65	ug/g	0.405	12	*	80	120			
SW7471B	MSD12632	Mercury	52513-004		0.86	ug/g	0.405	64	*	80	120	28		35
SW7471B	BLK12647	Mercury		<	0.14	ug/g								
SW7471B	CRM12647	Mercury			0.198	ug/g	0.221			0.0908	0.351			
SW7471B	CRMD12647	Mercury			0.203	ug/g	0.221			0.0908	0.351	2		35
SW7471B	MS12647	Mercury	52537-002		0.58	ug/g	0.389	82		80	120			
SW7471B	MSD12647	Mercury	52537-002		0.61	ug/g	0.374	95		80	120	6		35

Method	QC ID	Parameter	Associated Sample		Result	Units	Amt Added	%R		Limits		RPD	RPD Limit
SW3060A7196A	CRM2001871	Chromium, Hexavalent			110	ug/g	260			93.3	350		
SW3060A7196A	CRMD2001871	Chromium, Hexavalent			100	ug/g	260			93.3	350		30
SW3060A7196A	DUP2001871	Chromium, Hexavalent	52498-013	<	0.48	ug/g							20
SW3060A7196A	MS2001871	Chromium, Hexavalent	52513-004	<	0.50	ug/g	25.01	1	*	75	125		
SW3060A7196A	MS2001871	Chromium, Hexavalent	52537-009	<	0.55	ug/g	27.25	1	*	75	125		
SW3060A7196A	MSD2001871	Chromium, Hexavalent	52513-004	<	0.49	ug/g	24.43	1	*	75	125	25	20
SW3060A7196A	MSD2001871	Chromium, Hexavalent	52537-009	<	0.55	ug/g	27.35	1	*	75	125	63	20
SW3060A7196A	PB2001871	Chromium, Hexavalent		<	0.40	ug/g							
SW9045C	DUP2001855	pH	52537-003		7.2	pH							

AROMATIC HYDROCARBON BREAKTHROUGH CALCULATION

Method: MADEP EPH 2019 Rev 2.1

	lcs12658 Aliphatic Breakthrough (%)	Acceptance Criteria	Date of Analysis
naphthalene	0.6%	<5.0%	4/16/2020
2-methylnaphthalene	0.1%	<5.0%	4/16/2020

	lcsd12658 Aliphatic Breakthrough (%)	Acceptance Criteria	Date of Analysis
naphthalene	0.9%	<5.0%	4/16/2020
2-methylnaphthalene	0.1%	<5.0%	4/16/2020

Absolute Resource associates
124 Heritage Avenue #16
Portsmouth, NH 03801
603-436-2001
absoluteresourceassociates.com

CHAIN-OF-CUSTODY RECORD AND ANALYSIS REQUEST

52537

Company Name: WESTON & SAMPSON
Company Address: 55 WALKERS BROOK DR READING, MA
Report To: SARAH DESTEFANO & JILL MURPHY
Phone #: 1 800 SAMPSON
Invoice to: SARAH DESTEFANO
Email: DESTEFANOS@WSEINC.COM
PO #: FRAMINGHAM BROWNFIELDS

Project Name: CEDAR WOODS
Project #: 2180311
Project Location: NH (MA) ME VT
Accreditation Required? N/Y:
Protocol: RCRA SDWA NPDES (MCP) NHDES DOD
Reporting Limits: QAPP GW-1 (S-1) EPA DW Other
Quote # N/A
☐ NH Reimbursement Pricing

ANALYSIS REQUEST

☐ VOC 8260 ☐ VOC 8260 NHDES ☐ VOC 8260 MADEP
☐ VOC 624.1 ☐ VOC BTEX MtBE, only ☐ VOC 8021VT
☒ VPH MADEP ☐ GRO 8015 ☐ 1,4-Dioxane *
☐ VOC 524.2 ☐ VOC 524.2 NH List ☐ Gases-List:
☐ TPH ☐ DRO 8015 ☒ EPH MADEP ☐ TPH Fingerprint
☐ 8270PAH ☐ 8270ABN ☐ 625.1 ☐ EDB
☐ 8082 PCB ☐ 8081 Pesticides ☐ 608.3 Pest/PCB
☐ O&G 1664 ☐ Mineral O&G 1664
☐ pH ☐ BOD ☐ Conductivity ☐ Turbidity ☐ Apparent Color
☐ TSS ☐ TDS ☐ TS ☐ TVS ☐ Alkalinity ☐ Acidity
☐ RCRA Metals ☐ Priority Pollutant Metals ☐ TAL Metals ☐ Hardness
☒ Total Metals-list: MCP 14 METALS
☐ Dissolved Metals-list:
☐ Ammonia ☐ COD ☐ TKN ☐ TN ☐ TON ☐ TOC ☐ Ferrous Iron
☐ T-Phosphorus ☐ Bacteria P/A ☐ Bacteria MPN ☐ Enterococci
☐ Cyanide ☐ Sulfide ☐ Nitrate + Nitrite ☐ Ortho P ☐ Phenols
☐ Nitrate ☐ Nitrite ☐ Chloride ☐ Sulfate ☐ Bromide ☐ Fluoride
☐ Corrosivity ☐ Ignitibility/FP
☐ TCLP Metals ☐ TCLP VOC ☐ TCLP SVOC ☐ TCLP Pesticide
Subcontract: ☐ Grain Size ☐ Herbicides ☐ Asbestos ☐ PFAS
Cr III + Cr VI 4/8/20 MPM
Grab (G) or Composite (C)

Lab Sample ID (Lab Use Only)	Field ID	# CONTAINERS	Matrix: WATER	SOLID	OTHER	Preservation Method: HCl	HNO_3	H_2SO_4	NaOH	MeOH	Sampling: DATE	TIME	SAMPLER	Grab (G) or Composite (C)
52537-01	SB-111(0-1')			X							4/8/20	0910	MPM MPM	G
-02	SB-111(0-3')			X								0912		
-03	SB-111(4-7')			X						X		0915		
-04	SB-113(0-3')			X								0920		
-05	SB-113(5-8')			X						X		0940		
-06	SB-115(0-3')			X								1010		
-07	SB-115(5-8')			X						X		1020		
-08	SB-114(0-3')			X						X		1030		
-09	SB-114(5-8')			X								1050		
	MS-2 **			X								0917		
	MSD-2 **			X								0917		

TAT REQUESTED
Priority (24 hr)* ☐
Expedited (48 hr)* ☐
Standard ☐
(10 Business Days)
*Date Needed 5 DAY

See absoluteresourceassociates.com for sample acceptance policy and current accreditation lists.

SPECIAL INSTRUCTIONS
* VPH w/ TARGET VOCs
** ASSOCIATED w/ SAMPLE SB-111 (0-3) (0-3 / 5) pu Jill 4/9/20 g

REPORTING INSTRUCTIONS ☒ PDF (e-mail address) MURPHYJ@WSEINC.COM
☐ HARD COPY REQUIRED ☒ EDD

RECEIVED ON ICE ☒ YES ☐ NO
TEMPERATURE 1 °C

CUSTODY RECORD
QSD-01 Revision 11/06/19

	Relinquished by Sampler:	Date	Time	Received by:	Date	Time
1	Margaret Murphy	4/8/2020	1300		4-8	1 PM
2	Relinquished by:	4-8	16:32	Received by:	Date	Time
3	Relinquished by:	Date	Time	Received by Laboratory:	4/8/20	16.32

Absolute Resource associates
124 Heritage Avenue #16
Portsmouth, NH 03801
603-436-2001
absoluteresourceassociates.com

CHAIN-OF-CUSTODY RECORD AND ANALYSIS REQUEST

52537

Company Name:
Company Address:
Report To: SEE PAGE 1
Phone #:
Invoice to:
Email:
PO #:

Project Name:
Project #: SEE PAGE 1
Project Location: NH (MA) ME VT
Accreditation Required? N/Y:
Protocol: RCRA MCP SDWA NHDES NPDES DOD
Reporting Limits: QAPP EPA DW GW-1 S-1 Other
Quote # N/A
❑ NH Reimbursement Pricing

ANALYSIS REQUEST

Lab Sample ID (Lab Use Only)	Field ID	# CONTAINERS	Matrix: WATER	SOLID	OTHER	Preservation Method: HCl	HNO_3	H_2SO_4	NaOH	MeOH	Sampling: DATE	TIME	SAMPLER	*VOC 8260	VOC 624.1	VPH MADEP	VOC 524.2	TPH	Total Metals-list:	Grab (G) or Composite (C)
5253710	DUP-2			X						X	4/8/20	—	MDM MWL			X		X	MCP 14 METALS	G
	~~FIELD~~ MDM 4/8/20																			
-11	TRIP BLANK		X								4/8/20	—	-	X						
											MDM 4/8/20									

Cr+6 MDM 4/9/20 GW VI

TAT REQUESTED
Priority (24 hr)* ❑
Expedited (48 hr)* ❑
Standard ❑
(10 Business Days)
*Date Needed: 5 DAY

See absoluteresourceassociates.com for sample acceptance policy and current accreditation lists.

SPECIAL INSTRUCTIONS
* VPH w/ TARGET VOCs

REPORTING INSTRUCTIONS
X PDF (e-mail address) SEE PAGE 1
❑ HARD COPY REQUIRED X EDD

RECEIVED ON ICE ❑YES ❑NO
TEMPERATURE ____ °C

CUSTODY RECORD
QSD-01 Revision 11/06/19

	Relinquished by Sampler:	Date	Time	Received by:	Date	Time
1	Margaret Hunt	4/8/2020	1300		4-8	1pm
2		4-8	16:32			
3				Received by Laboratory:	4/8/20	16:32

Laboratory Report

Absolute Resource associates
124 Heritage Avenue Portsmouth NH 03801

Jill Murphy
Weston & Sampson
55 Walkers Brook Drive
Reading, MA 01867

PO Number: Framingham Brownfields
Job ID: 53042 & 53078
Date Received: 5/15/20

Project: Cedar Woods 21

Attached please find results for the analysis of the samples received on the date referenced above.

Unless otherwise noted in the attached report, the analyses performed met the requirements of Absolute Resource Associates' Quality Assurance Plan. The Standard Operating Procedures are based upon USEPA SW-846, USEPA Methods for Chemical Analysis of Water and Wastewater, Standard Methods for the Examination of Water and Wastewater and other recognized methodologies. The results contained in this report pertain only to the samples as indicated on the chain of custody.

Absolute Resource Associates maintains certification with the agencies listed below. The reported results apply to the sample(s) in the condition as received at the time the laboratory took custody. This report shall not be reproduced except in full and with approval from the laboratory. The liability of ARA is limited to the cost of the requested analyses, unless otherwise agreed upon in writing.

We appreciate the opportunity to provide laboratory services. If you have any questions regarding the enclosed report, please contact the laboratory and we will be glad to assist you.

Sincerely,
Absolute Resource Associates

Aaron DeWees
Chief Operating Officer

Date of Approval: 6/1/2020
Total number of pages: 14

Absolute Resource Associates Certifications

New Hampshire	1732	Massachusetts	M-NH902
Maine	NH902		

Project ID: Cedar Woods 21

Sample Association Table

Field ID	Matrix	Date-Time Sampled	Lab#	Analysis
SB-107 (0-1')	Solid	4/7/2020 9:45	53042-001	
				Lead in solids by 6020
				Solids Digestion for ICPMS Analysis
SB-108 (0-1')	Solid	4/7/2020 10:45	53042-002	
				Lead in solids by 6020
				Solids Digestion for ICPMS Analysis
SB-109 (0-1')	Solid	4/7/2020 11:30	53042-003	
				Lead in solids by 6020
				Solids Digestion for ICPMS Analysis
SB-110 (0-1')	Solid	4/7/2020 12:45	53042-004	
				Lead in solids by 6020
				Solids Digestion for ICPMS Analysis
SB-112 (0-1')	Solid	4/7/2020 13:15	53042-005	
				Lead in solids by 6020
				Solids Digestion for ICPMS Analysis
SB-106 (0-1')	Solid	4/6/2020 9:20	53078-001	
				Lead in solids by 6020
				Solids Digestion for ICPMS Analysis
SB-102 (0-1')	Solid	4/6/2020 11:30	53078-002	
				Lead in solids by 6020
				Solids Digestion for ICPMS Analysis

Absolute Resource associates

Project ID: Cedar Woods 21
Job ID: 53042

Sample#: 53042-001
Sample ID: SB-107 (0-1')
Matrix: Solid Percent Dry: 87.3% Results expressed on a dry weight basis.
Sampled: 4/7/20 9:45

Parameter	Result	Reporting Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
Lead	**67**	2.7	ug/g	5	EEB	5/26/20	12797	5/28/20	19:41	SW3051A6020A

Sample#: 53042-002
Sample ID: SB-108 (0-1')
Matrix: Solid Percent Dry: 75.8% Results expressed on a dry weight basis.
Sampled: 4/7/20 10:45

Parameter	Result	Reporting Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
Lead	**900**	3.1	ug/g	5	EEB	5/26/20	12797	5/28/20	19:49	SW3051A6020A

Sample#: 53042-003
Sample ID: SB-109 (0-1')
Matrix: Solid Percent Dry: 81.6% Results expressed on a dry weight basis.
Sampled: 4/7/20 11:30

Parameter	Result	Reporting Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
Lead	**790**	3.0	ug/g	5	EEB	5/26/20	12797	5/28/20	19:57	SW3051A6020A

Sample#: 53042-004
Sample ID: SB-110 (0-1')
Matrix: Solid Percent Dry: 91.6% Results expressed on a dry weight basis.
Sampled: 4/7/20 12:45

Parameter	Result	Reporting Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
Lead	**11**	2.7	ug/g	5	EEB	5/26/20	12797	5/28/20	20:06	SW3051A6020A

Sample#: 53042-005
Sample ID: SB-112 (0-1')
Matrix: Solid Percent Dry: 93.3% Results expressed on a dry weight basis.
Sampled: 4/7/20 13:15

Parameter	Result	Reporting Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
Lead	**25**	2.6	ug/g	5	EEB	5/26/20	12797	5/28/20	20:14	SW3051A6020A

Project ID: Cedar Woods 2180311
Job ID: 53078

Sample#: 53078-001
Sample ID: SB-106 (0-1')
Matrix: Solid Percent Dry: 87.9% Results expressed on a dry weight basis.
Sampled: 4/6/20 9:20

Parameter	Result	Reporting Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
Lead	**68**	2.3	ug/g	5	EEB	5/26/20	12797	5/29/20	18:14	SW3051A6020A

Sample#: 53078-002
Sample ID: SB-102 (0-1')
Matrix: Solid Percent Dry: 94.4% Results expressed on a dry weight basis.
Sampled: 4/6/20 11:30

Parameter	Result	Reporting Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
Lead	**73**	2.5	ug/g	5	EEB	5/26/20	12797	5/29/20	18:22	SW3051A6020A

Quality Control Report

124 Heritage Avenue Unit 16
Portsmouth, NH 03801
www.absoluteresourceassociates.com

MassDEP Analytical Protocol Certification Form

Laboratory Name: Absolute Resource Associates	Project #: 2180311
Project Location: Massachusetts	RTN:

This Form provides certifications for the following data set: list Laboratory Sample ID Number(s): 53042&53078

Matrices: ☐ Groundwater/Surface Water ☑ Soil/Sediment ☐ Drinking Water ☐ Air ☐ Other:

CAM Protocol (check all that apply below):

8260 VOC CAM II A ☐	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 ☐
8270 SVOC CAM II B ☐	7010 Metals CAM III C ☐	MassDEP VPH (GC/MS) CAM IV C ☐	8081 Pesticides CAM V B ☐	7196 Hex Cr CAM VI B ☐	MassDEP APH CAM IX A ☐
6010 Metals CAM III A ☐	6020 Metals CAM III D ☑	MassDEP EPH CAM IV B ☐	8151 Herbicides CAM V C ☐	8330 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 ☐ No
B	Were the analytical method(s) and all associated QC requirements specified in the selected CAM protocol(s) followed?	☑ Yes ☐ 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 ☐ No
D	Does the laboratory report comply with all the reporting requirements specified in CAM VII A, "Quality Assurance and Quality Control Guidelines for the Acquisition and Reporting of Analytical Data"?	☑ Yes ☐ No
E	VPH, EPH, APH, and TO-15 only a. VPH, EPH, and APH Methods only: Was each method conducted without significant modification(s)? (Refer to the individual method(s) for a list of significant modifications). b. APH and TO-15 Methods only: Was the complete analyte list reported for each method?	☐ Yes ☐ No ☐ 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 ☐ 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 protocol(s)?	☐ Yes ☑ No[1]

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

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

[1] *All negative responses must be addressed in an attached 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, is accurate and complete.

Signature: _____ **Position:** Chief Operating Officer

Printed Name: Aaron DeWees **Date:** 6/1/20

Sample Integrity Table

Parameter	Method	Matrix	Minimum Volume	Recommended Container(s)	Required Preservation	Holding Time
Volatile Organics	EPA 8260	Aqueous	40mL	2 x 40mL VOA Vials with Teflon lined septa	Cool to ≤6°C 1:1 HCl to pH <2	14 Days
Volatile Organics	EPA 8260	Solid	40mL	1 x 40mL VOA Vial with 10mLs Methanol and 1 unpreserved container for percent moisture	Cool to ≤6°C Methanol	14 Days
Semivolatile Organics	EPA 8270	Aqueous	1L	1L Amber Glass Bottle w/Teflon liner	Cool to ≤6°C	7 Days
Semivolatile Organics	EPA 8270	Solid	20g	4oz Amber Glass Jar w/Teflon liner	Cool to ≤6°C	14 Days
Organochlorine Pesticides	EPA 8081	Aqueous	1L	1L Amber Glass Bottle w/Teflon liner	Cool to ≤6°C	7 Days
Organochlorine Pesticides	EPA 8081	Solid	20g	4oz Glass Jar w/Teflon liner	Cool to ≤6°C	14 Days
PCBs	EPA 8082	Aqueous	1L	1L Amber Glass Bottle w/Teflon liner	Cool to ≤6°C	365 Days
PCBs	EPA 8082	Solid	20g	4oz Glass Jar w/Teflon liner	Cool to ≤6°C	365 Days
Herbicides (subcontracted)	EPA 8151	Aqueous	1L	1L Amber Glass Bottle w/Teflon liner	Cool to ≤6°C	7 Days
Herbicides (subcontracted)	EPA 8151	Solid	30g	4oz Glass Jar w/Teflon liner	Cool to ≤6°C	14 Days
MA DEP VPH	MADEP VPH	Aqueous	40mL	2 x 40mL VOA Vials with Teflon lined septa	Cool to ≤6°C 1:1 HCl to pH <2	14 Days
MA DEP VPH	MADEP VPH	Solid	40mL	1 x 40mL VOA Vial with 10mLs Methanol and 1 unpreserved container for percent moisture	Cool to ≤6°C Methanol	28 Days
MA DEP EPH	MADEP EPH	Aqueous	1L	1L Amber Glass Bottle w/Teflon liner	Cool to ≤6°C 1:1 HCl to pH <2	14 Days
MA DEP EPH	MADEP EPH	Solid	30g	4oz Amber Glass Jar w/Teflon liner	Cool to ≤6°C	14 Days
Total Metals	EPA 6010	Aqueous	100mL	250mL Polyethylene Bottle	1:1 HNO_3 to pH <2	180 Days
Dissolved Metals	EPA 6010	Aqueous	100mL	250mL Polyethylene Bottle	Filter First 1:1 HNO_3 to pH <2	180 Days
Total Metals	EPA 6010	Solid	15g	4oz Glass Jar w/Teflon liner	Cool to ≤6°C	180 Days
Total Mercury (may be combined with Total Metals)	EPA 7470	Aqueous	100mL	125mL Polyethylene Bottle	1:1 HNO_3 to pH <2	28 Days
Total Mercury (may be combined with Total Metals)	EPA 7471	Solid	15g	4oz Glass Jar w/Teflon liner	Cool to ≤6°C	28 Days
Chromium, Hexavalent	EPA 7196	Aqueous	100mL	125mL Polyethylene Bottle	Cool to ≤6°C (NH4)2SO4 buffer	28 Days
Chromium, Hexavalent (subcontract)	EPA 7196	Solid	15g	4oz Glass Jar w/Teflon liner	Cool to ≤6°C	30 Days
Cyanide, Total	EPA 9014	Aqueous	125mL	125mL Polyethylene Bottle	Cool to ≤6°C 1:1 NaOH to pH >8	14 Days
Cyanide, Total	EPA 9014	Solid	15g	4oz Glass Jar w/Teflon liner	Cool to ≤6°C	14 Days

Absolute Resource Associates
124 Heritage Avenue Unit 16
Portsmouth, NH 03801
www.absoluteresourceassociates.com

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Case Narrative
Lab # 53042 & 53078

Sample Receiving and Chain of Custody Discrepancies

Samples were received in acceptable condition, between 0 and 6 degrees C, on ice, and in accordance with sample handling, preservation and integrity guidelines.

Calibration

No exceptions noted.

Method Blank

No exceptions noted.

Surrogate Recoveries

Not applicable.

Laboratory Control Sample Results

No exceptions noted.

Matrix Spike/Matrix Spike Duplicate/Duplicate Results

Not requested for this project.

Other

No other exceptions noted.

MassDEP Analytical Protocol Certification Form Questions A through I

No explanation is needed for Questions A through I answered in the affirmative.
Question G: The CAM protocol reporting limits were not achieved for this project due to dilutions necessary for sample analysis. Box G is "No."
Question H: A solid MS/D was not specified. Box H is "No."
Question I: Metals: The MCP required metals were not requested by the customer. Box I is "No."

GLOSSARY

%R	Percent Recovery
BLK	Blank (Method Blank, Preparation Blank)
CCB	Continuing Calibration Blank
CCV	Continuing Calibration Verification
CRM	Certified Reference Material (associated with solid Metals samples)
CRMD	Certified Reference Material Duplicate (associated with solid Metals samples)
Dil'n	Dilution
DL	Detection Limit
DUP	Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
LOD	Limit of Detection
LOQ	Limit of Quantitation
MB	Methanol Blank (associated with solid VOC samples)
MLCS	Methanol Laboratory Control Sample (associated with solid VOC samples)
MLCSD	Methanol Laboratory Control Sample Duplicate (associated with solid VOC samples)
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PB	Preparation Blank
QC	Quality Control
RL	Reporting Limit
RPD	Relative Percent Difference
SUR	Surrogate

- QC Report -

Method	QC ID	Parameter	Associated Sample		Result	Units	Amt Added	%R	Limits		RPD	RPD Limit
SW3051A6020A	BLK12797	Lead		<	2.5	ug/g						
SW3051A6020A	CRM12797	Lead			175	ug/g	248		152	273		
SW3051A6020A	CRMD12797	Lead			180	ug/g	248		152	273	3	20
SW3051A6020A	MS12797	Lead	53062-009		380	ug/g	235	107	75	125		
SW3051A6020A	MSD12797	Lead	53062-009		350	ug/g	227	98	75	125	8	20

Absolute Resource associates

124 Heritage Avenue #16
Portsmouth, NH 03801
603-436-2001
absoluteresourceassociates.com

CHAIN-OF-CUSTODY RECORD AND ANALYSIS REQUEST

53042

Company Name: WESTON & SAMPSON
Company Address: 55 WALKERS BROOK DR READING MA
Report To: SARAH DESTEFANO & JILL MURPHY
Phone #: LEGO SAMPSON
Invoice to: ~~DE~~ SARAH DESTEFANO
Email: DESTEFANOS@WSEINC COM
PO #: ~~CED~~ FRAMINGHAM BROWNFIELD

Project Name: CEDAR WOODS
Project #: 21
Project Location: NH (MA) ME VT
Accreditation Required? N/Y:
Protocol: RCRA (MCP) SDWA NPDES NHDES DOD
Reporting Limits: QAPP GW-1 (S-1) EPA DW Other
Quote # N/A
☐ NH Reimbursement Pricing

ANALYSIS REQUEST

Lab Sample ID (Lab Use Only)	Field ID	# CONTAINERS	Matrix: WATER	SOLID	OTHER	Preservation Method: HCl	HNO_3	H_2SO_4	NaOH	MeOH	Sampling: DATE	TIME	SAMPLER
53042	525/311 SB-104(0-3')			X							4/7/20	0845	
-02	SB-104(8-10')			X						X		0855	
-01 -03 HOLD	SB-107(0-1')			X								0945	
-04	SB-107(0-3')			X						X		1000	
-05	SB-107(10-11')			X						X		1020	
-02 -06 HOLD	SB-108(0-1')			X								1045	
-07	SB-108(0-3')			X								1050	
-08	SB-108(6-9')			X						X		1100	
-03 -09 HOLD	SB-109(0-1')			X								1130	
-10	SB-109(0-3')			X								1140	
-11	SB-109(5-8')			X						X		1145	

Analysis	1	2	3	4	5	6	7	8	9	10	11
* VOC 8260	X									X	
☐ VOC 8260 NHDES											
☐ VOC 8260 MADEP											
☐ VOC 624.1											
☐ VOC BTEX MBE only											
☐ VOC 8021VT											
** VPH MADEP			X								X
☐ GRO 8015											
☐ 1,4-Dioxane											
☐ VOC 524.2 NH List											
☐ Gases-List											
☐ VOC 524.2											
☐ TPH											
☐ DRO 8015											
~~☐~~ EPH MADEP	X	X	X	X	X	X	X	X	X	X	X
☐ TPH Fingerprint											
☐ 8270PAH											
☐ 625.1											
☐ EDB											
☐ 8082 PCB											
☐ 8081 Pesticides											
☐ 608.3 Pest/PCB											
☐ 0&G 1664											
☐ Mineral 0&G 1664											
☐ pH											
☐ BOD											
☐ Conductivity											
☐ Turbidity											
☐ Apparent Color											
☐ TSS											
☐ TDS											
☐ TVS											
☐ Alkalinity											
☐ Acidity											
☐ RCRA Metals											
☐ Priority Pollutant Metals											
☐ TAL Metals											
☐ Hardness											
☐ Total Metals-list: MCP 14 METALS	X	X	X	X	X	X	X	X	X	X	X
☐ Dissolved Metals-list:											
☐ Ammonia											
☐ COD											
☐ TKN											
☐ TN											
☐ TOC											
☐ TON											
☐ Ferrous Iron											
☐ T-Phosphorus											
☐ Bacteria P/A											
☐ Bacteria MPN											
☐ Enterococci											
☐ Cyanide											
☐ Sulfide											
☐ Nitrate + Nitrite											
☐ Ortho P											
☐ Phenols											
☐ Nitrate											
☐ Nitrite											
☐ Chloride											
☐ Sulfate											
☐ Bromide											
☐ Fluoride											
☐ Corrosivity											
☐ Ignitability, FP											
☐ TCLP Metals											
☐ TCLP VOC											
☐ TCLP SVOC											
☐ TCLP Pesticide											
Subcontract: ☐ Grain Size											
☐ Herbicides											
☐ Asbestos											
☐ PFAS											
Cr IV											
Lead Only per J. Spencer 5/15/20		X		X		X		X		X	
Grab (G) or Composite (C)											

TAT REQUESTED
Priority (24 hr)* ☐
Expedited (48 hr)* ☐
Standard ☐ (10 Business Days)
*Date Needed: 5 DAY

See absoluteresourceassociates.com for sample acceptance policy and current accreditation lists.

SPECIAL INSTRUCTIONS
* VOCs & VPH
** VPH WITH TARGET VOCs

REPORTING INSTRUCTIONS ☑ PDF (e-mail address) MURPHYJ@WSEINC COM
☐ HARD COPY REQUIRED ☐ EDD

RECEIVED ON ICE ☐ YES ☐ NO
TEMPERATURE 2 °C

CUSTODY RECORD
QSD-01 Revision 11/06/19

	Relinquished by/Sampler:	Date	Time	Received by:	Date	Time
1		4/7/20	1500		4-7	3:00
2	Relinquished by:	4/7	16:00	Received by:		
3	Relinquished by:	Date	Time	Received by Laboratory:	4/9/20	16:00

Relogged 5/15/2020 per J. Spencer

Absolute Resource associates

124 Heritage Avenue #16
Portsmouth, NH 03801
603-436-2001
absoluteresourceassociates.com

CHAIN-OF-CUSTODY RECORD AND ANALYSIS REQUEST 52513

ANALYSIS REQUEST

Company Name:
Company Address: SEE PAGE 1
Report To:
Phone #:
Invoice to: SEE PAGE 1
Email: SEE PAGE 1
PO #:

Project Name:
Project #: SEE PAGE 1
Project Location: NH MA ME VT
Accreditation Required? N/Y:
Protocol: RCRA SDWA NPDES (MCP) NHDES DOD
Reporting Limits: QAPP GW-1 (S-1) EPA DW Other
Quote # N/A
❑ NH Reimbursement Pricing

Analysis columns: VOC 8260 / VOC 8260 NHDES / VOC 8260 MADEP *; VOC 624.1 / VOC BTEX MtBE only / VOC 8021VT; VPH MADEP / GRO 8015 / 1,4-Dioxane **; VOC 524.2 / VOC 524.2 NH List / Gases-List; TPH / DRO 8015 / EPH MADEP / TPH Fingerprint; 8270PAH / 8270ABN / 625.1 / EDB; 8082 PCB / 8081 Pesticides / 608.3 Pest/PCB; O&G 1664 / Mineral O&G 1664; pH / BOD / Conductivity / Turbidity / Apparent Color; TSS / TDS / TS / TVS / Alkalinity / Acidity; RCRA Metals / Priority Pollutant Metals / TAL Metals / Hardness; Total Metals-list: MCP 14 METALS; Dissolved Metals-list; Ammonia / COD / TKN / TN / TON / TOC / Ferrous Iron; T-Phosphorus / Bacteria P/A / Bacteria MPN / Enterococci; Cyanide / Sulfide / Nitrate + Nitrite / Ortho P / Phenols; Nitrate / Nitrite / Chloride / Sulfate / Bromide / Fluoride; Corrosivity / Ignitibility/FP; TCLP Metals / TCLP VOC / TCLP SVOC / TCLP Pesticide; Subcontract: Grain Size / Herbicides / Asbestos / PFAS; Cr IV; Grab (G) or Composite (C)

Lab Sample ID (Lab Use Only)	Field ID	# Containers	Matrix	Preservation	Date	Time	Sampler	VOC 8260 MADEP	VPH MADEP	EPH MADEP	MCP 14 Metals	Cr IV
52513-12 HOLD	SB-110(0-1')		Solid		4/7/20	12:45	HE			X	X	
-13	SB-110(0-3')		Solid		↓	~~12:55~~ 12:50				X	X	
-14	SB-110(5-8')		Solid		↓	12:55			X	X	X	X
-15 HOLD	SB-112(0-1')		Solid		↓	13:15				X	X	
-16	SB-112(0-3')		Solid		↓	13:20				X	X	
-17	SB-112(5-8')		Solid		↓	13:25			X	X	X	X
~~18~~	MS-1		Solid		↓	10:15						
~~19~~	MSD-1		Solid		↓	↓						
-18 ~~20~~	DUP-1		Solid	MeOH	↓	—			X	X	X	
-19 ~~21~~	TRIP BLANK				—	—		X				

4/7/20 HE

TAT REQUESTED
Priority (24 hr)* ❑
Expedited (48 hr)* ❑
Standard ❑
(10 Business Days)
*Date Needed 5 DAY

See absoluteresourceassociates.com for sample acceptance policy and current accreditation lists.

SPECIAL INSTRUCTIONS
* VOCs & VPH EXCEPT FOR TRIP BLANK
** VPH WITH TARGET VOCs

REPORTING INSTRUCTIONS ❑ PDF (e-mail address) SEE PAGE 1
❑ HARD COPY REQUIRED ❑ EDD

RECEIVED ON ICE ☑YES ❑NO
TEMPERATURE 2 °C

CUSTODY RECORD

Relinquished by	Date	Time	Received by	Date	Time
Relinquished by Sampler: [signature]	4/7/20	1500	Received by: [signature]	4-7	300
Relinquished by: [signature]	4-7	1600	Received by:		
Relinquished by:			Received by Laboratory: [signature]	4/7/20	1600

OSD-01 Revision 11/06/19

Absolute Resource associates

124 Heritage Avenue #16
Portsmouth, NH 03801
603-436-2001
absoluteresourceassociates.com

CHAIN-OF-CUSTODY RECORD AND ANALYSIS REQUEST

53078

Company Name: WESTON & SAMPSON
Company Address: 55 WALKERS BROOK DR READING, MA
Report To: SARAH DESTEFANO & JILL MURPHY
Phone #: 1800 SAMPSON
Invoice to: SARAH DESTEFANO
Email: DESTEFANOS@WSEINC.COM
PO #: FRAMINGHAM BROWNFIELDS

Project Name: CEDAR WOODS
Project #: 2180311
Project Location: NH (MA) ME VT
Accreditation Required? N/Y: Y
Protocol: RCRA SDWA NPDES (MCP) NHDES DOD
Reporting Limits: GAPP UCMR GW-1 (S-1) EPA DW Other
Quote # N/A
☐ NH Reimbursement Pricing

ANALYSIS REQUEST

☐ VOC 8260 MADEP ☐ VOC 8260 NHDES ☐ VOC 8021VT ☐ VOC BTEX MtBE only ☐ VOC 624.1 ☐ VOC 524.2 NH List ☐ Gases-List: ☐ 1,4-Dioxane * ☐ VPH MADEP ☐ GRO 8015 ☐ VOC 524.2 ☐ TPH ☐ DRO 8015 ☐ EPH MADEP ☐ TPH Fingerprint ☐ 8270PAH ☐ 8270SIM ☐ 625.1 ☐ EDB ☐ 8082 PCB ☐ 8081 Pesticides ☐ 608.3 Pest/PCB ☐ O&G 1664 ☐ Mineral O&G 1664 ☐ pH ☐ BOD ☐ Conductivity ☐ Turbidity ☐ Apparent Color ☐ TSS ☐ TDS ☐ TS ☐ TVS ☐ Alkalinity ☐ Acidity ☐ RCRA Metals ☐ Priority Pollutant Metals ☐ TAL Metals ☐ Hardness ☐ Total Metals-list: MCP 14 METALS ☐ Dissolved Metals-list: ☐ Ammonia ☐ COD ☐ TKN ☐ TN ☐ TON ☐ TOC ☐ Ferrous Iron ☐ T-Phosphorus ☐ Bacteria P/A ☐ Bacteria MPN ☐ Enterococci ☐ Cyanide ☐ Sulfide ☐ Nitrate + Nitrite ☐ Ortho P ☐ Phenols ☐ Nitrate ☐ Nitrite ☐ Chloride ☐ Sulfate ☐ Bromide ☐ Fluoride ☐ Corrosivity ☐ Ignitibility/FP ☐ TCLP Metals ☐ TCLP VOC ☐ TCLP SVOC ☐ TCLP Pesticide Subcontract ☐ Grain Size ☐ Herbicides ☐ Asbestos ☐ PFAS HEXAVALENT CHROMIUM (CR IV) * Total Pb per J. Spencer 5/20/20

Lab Sample ID (Lab Use Only)	Field ID	# CONTAINERS	Matrix: WATER	SOLID	OTHER	Preservation Method: HCl	HNO3	H2SO4	NaOH	MeOH	HG	Sampling: DATE	TIME	SAMPLER	Grab (G) or Composite (C)
524495-01 HOLD	SB-106(0-1')			X		X				X		4/6/20	0920		G
-02	SB-106(0-3')			X						X			0940		
-03	SB-106(5-8')			X						X			1000		
-04	SB-106(3-4')			X						X			0930		
-05	SB-105(0-3')			X						X			1040		
-06	SB-105(5-8')			X						X			1100		
-07	SB-102(0-3')			X						X			1145		
-08 HOLD	SB-102(0-1')			X						X			1130		
-09	SB-102(11-14')			X						X			1140		
-10	SB-101(0-3')			X						X			1255		
-11	SB-101(9-12')			X						X			1305		

TAT REQUESTED
Priority (24 hr)* ☐
Expedited (48 hr)* ☐
Standard ☐ (10 Business Days)
*Date Needed 5-DAY

See absoluteresourceassociates.com for sample acceptance policy and current accreditation lists.

SPECIAL INSTRUCTIONS
* VPH W/ TARGET VOCs

REPORTING INSTRUCTIONS ☒ PDF (e-mail address) murphyj@wseinc.com
☐ HARD COPY REQUIRED ☒ EDD

RECEIVED ON ICE ☒ YES ☐ NO
TEMPERATURE 0 °C

CUSTODY RECORD
QSD-01 Revision 11/06/19

	Relinquished by Sampler:	Date	Time	Received by:	Date	Time
		4/6/20	1240		4-6	1:41
	Relinquished by:	Date	Time	Received by:	Date	Time
		4-6	15:43			
	Relinquished by:	Date	Time	Received by Laboratory:	Date	Time
					4/6/20	15:43

Relogged per J. Spencer 5/20/20 SAA

PAGE 2 OF 2

Absolute Resource associates

124 Heritage Avenue #16
Portsmouth, NH 03801
603-436-2001
absoluteresourceassociates.com

CHAIN-OF-CUSTODY RECORD AND ANALYSIS REQUEST

~~52498~~

Company Name:

Company Address: SEE PAGE

Report To: 1 OF 2

Phone #:

Invoice to:

Email:

PO #:

Project Name:

Project #:

Project Location: NH MA ME VT

Accreditation Required? N/Y:

Protocol: RCRA SDWA NPDES MCP NHDES DOD

Reporting Limits: QAPP GW-1 S-1 EPA DW Other

Quote #

❑ NH Reimbursement Pricing

ANALYSIS REQUEST

Lab Sample ID (Lab Use Only)	Field ID	# CONTAINERS	Matrix: WATER	Matrix: SOLID	Matrix: OTHER	Preservation: HCl	Preservation: HNO_3	Preservation: H_2SO_4	Preservation: NaOH	Preservation: MeOH	Sampling: DATE	Sampling: TIME	Sampling: SAMPLER	☒VOC 8260 ❑VOC 8260 NHDES ❑VOC 8260 MADEP	❑VOC 624.1 ❑VOC BTEX MtBE only ❑VOC 8021VT	☒VPH MADEP ❑GRO 8015 ❑1,4-Dioxane *	❑VOC 524.2 ❑VOC 524.2 NH List ❑Gases-List:	❑TPH ❑DRO 8015 ☒EPH MADEP ❑TPH Fingerprint	❑8270PAH ❑8270ABN ❑625.1 ❑EDB	❑8082 PCB ❑8081 Pesticides ❑608.3 Pest/PCB	❑O&G 1664 ❑Mineral O&G 1664	❑pH ❑BOD ❑Conductivity ❑Turbidity ❑Apparent Color	❑TSS ❑TDS ❑TS ❑TVS ❑Alkalinity ❑Acidity	❑RCRA Metals ❑Priority Pollutant Metals ❑TAL Metals ❑Hardness	☒Total Metals-list: MCP 14 METALS	❑Dissolved Metals-list:	❑Ammonia ❑COD ❑TKN ❑TN ❑TON ❑TOC ❑Ferrous Iron	❑T-Phosphorus ❑Bacteria P/A ❑Bacteria MPN ❑Enterococci	❑Cyanide ❑Sulfide ❑Nitrate + Nitrite ❑Ortho P ❑Phenols	❑Nitrate ❑Nitrite ❑Chloride ❑Sulfate ❑Bromide ❑Fluoride	❑Corrosivity ❑Ignitability/FP	❑TCLP Metals ❑TCLP VOC ❑TCLP SVOC ❑TCLP Pesticide	Subcontract: ❑Grain Size ❑Herbicides ❑Asbestos ❑PFAS	HEXAVALENT CHROMIUM (CR IV)			Grab (G) or Composite (C)
52498-12	SB-103(0-3')			X						X	4/6/20	1220				~~X~~ MDM 4/6/20									X									~~X~~ MDM 4/6			G
-13	SB-103(3-5')			X						X	↓	1220				~~X~~ MDM 4/6/20									X									X			G
-14	SB-103(7-10')			X						X	↓	1225				X									X												G
-15	TRIP BLANK			X						X	~~4/6/20~~			X																							

TAT REQUESTED

Priority (24 hr)* ❑
Expedited (48 hr)* ❑
Standard ❑
(10 Business Days)
*Date Needed 5-DAY

See absoluteresourceassociates.com for sample acceptance policy and current accreditation lists.

SPECIAL INSTRUCTIONS
*VPH W/ TARGET VOCS

REPORTING INSTRUCTIONS ☒PDF (e-mail address)

❑ HARD COPY REQUIRED ☒ EDD

RECEIVED ON ICE ☒YES ❑NO

TEMPERATURE 0 °C

CUSTODY RECORD

Relinquished by	Date	Time	Received by	Date	Time
Relinquished by Sampler: [signature]	4/6/20	1340	Received by: [signature]	4-6	1:40
Relinquished by: [signature]	4-6	1543	Received by:		
Relinquished by:			Received by Laboratory: [signature]	4/6/20	1543

QSD-01 Revision 11/06/19

Laboratory Report

Absolute Resource associates
124 Heritage Avenue Portsmouth NH 03801

Joe Spencer
Weston & Sampson
55 Walkers Brook Drive
Reading, MA 01867

PO Number: None
Job ID: 53399
Date Received: 6/16/20

Project: Cedar Woods

Attached please find results for the analysis of the samples received on the date referenced above.

Unless otherwise noted in the attached report, the analyses performed met the requirements of Absolute Resource Associates' Quality Assurance Plan. The Standard Operating Procedures are based upon USEPA SW-846, USEPA Methods for Chemical Analysis of Water and Wastewater, Standard Methods for the Examination of Water and Wastewater and other recognized methodologies. The results contained in this report pertain only to the samples as indicated on the chain of custody.

Absolute Resource Associates maintains certification with the agencies listed below. The reported results apply to the sample(s) in the condition as received at the time the laboratory took custody. This report shall not be reproduced except in full and with approval from the laboratory. The liability of ARA is limited to the cost of the requested analyses, unless otherwise agreed upon in writing.

We appreciate the opportunity to provide laboratory services. If you have any questions regarding the enclosed report, please contact the laboratory and we will be glad to assist you.

Sincerely,
Absolute Resource Associates

Aaron DeWees
Chief Operating Officer

Date of Approval: 6/29/2020
Total number of pages: 3

Absolute Resource Associates Certifications

New Hampshire	1732	Massachusetts	M-NH902
Maine	NH902		

Project ID: Cedar Woods
Job ID: 53399
Sample #: 53399-001
Sample ID: IDW-1
Matrix: TCLP Extract
Sampled: 6/15/20 9:35
TCLP: 6/22/20

Parameter	Result	Reporting Limit	TCLP Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
Arsenic	< 0.050	0.050	5	mg/L	1	AGN	6/23/20	12891	6/23/20	18:00	SW1311 SW3005A6020A
Barium	**0.39**	0.10	100	mg/L	1	EEB	6/23/20	12891	6/25/20	20:00	SW1311 SW3005A6020A
Cadmium	**0.023**	0.010	1	mg/L	1	AGN	6/23/20	12891	6/23/20	18:00	SW1311 SW3005A6020A
Chromium	< 0.10	0.10	5	mg/L	1	AGN	6/23/20	12891	6/23/20	18:00	SW1311 SW3005A6020A
Lead	**0.36**	0.050	5	mg/L	1	AGN	6/23/20	12891	6/23/20	18:00	SW1311 SW3005A6020A
Mercury	< 0.0020	0.0020	0.2	mg/L	1	EEB	6/23/20	12880	6/23/20	16:28	SW1311 SW7470A
Selenium	< 0.10	0.10	1	mg/L	1	AGN	6/23/20	12891	6/23/20	18:00	SW1311 SW3005A6020A
Silver	< 0.050	0.050	5	mg/L	1	AGN	6/23/20	12891	6/23/20	18:00	SW1311 SW3005A6020A

Sample #: 53399-002
Sample ID: IDW-2
Matrix: Water
Sampled: 6/15/20 9:40
TCLP: 6/22/20

Parameter	Result	Reporting Limit	TCLP Limit	Units	Instr Dil'n Factor	Analyst	Prep Date	Batch	Analysis Date	Time	Reference
Arsenic	**0.0088**	0.0050	5	mg/L	1	EEB	6/23/20	12891	6/25/20	20:25	SW1311 SW3005A6020A
Barium	**0.33**	0.010	100	mg/L	1	EEB	6/23/20	12891	6/25/20	20:25	SW1311 SW3005A6020A
Cadmium	**0.0018**	0.0010	1	mg/L	1	AGN	6/23/20	12891	6/23/20	18:25	SW1311 SW3005A6020A
Chromium	**0.050**	0.010	5	mg/L	1	EEB	6/23/20	12891	6/25/20	20:25	SW1311 SW3005A6020A
Lead	**0.31**	0.0050	5	mg/L	1	AGN	6/23/20	12891	6/23/20	18:25	SW1311 SW3005A6020A
Mercury	**0.00024**	0.0002	0.2	mg/L	1	EEB	6/23/20	12880	6/23/20	16:33	SW1311 SW7470A
Selenium	< 0.010	0.010	1	mg/L	1	AGN	6/23/20	12891	6/23/20	18:25	SW1311 SW3005A6020A
Silver	< 0.0050	0.0050	5	mg/L	1	AGN	6/23/20	12891	6/23/20	18:25	SW1311 SW3005A6020A

Absolute Resource associates

Absolute Resource associates
124 Heritage Avenue #16
Portsmouth, NH 03801
603-436-2001
absoluteresourceassociates.com

CHAIN-OF-CUSTODY RECORD AND ANALYSIS REQUEST 53399

Company Name: WESTON & SAMPSON
Company Address: 55 WHEELERS BROOK DR
Report To: JOE SPENCER
Phone #: 781 443 2779
Invoice to: JOE SPENCER
Email: spencerj@wsginc.com
PO #:

Project Name: CEDAR WOODS
Project #:
Project Location: NH MA ME VT
Accreditation Required? N/Y:
Protocol: RCRA SDWA NPDES MCP NHDES DOD
Reporting Limits: QAPP GW-1 S-1 EPA DW Other RCRA TCLP
Quote #
☐ NH Reimbursement Pricing

ANALYSIS REQUEST

Lab Sample ID (Lab Use Only)	Field ID	# CONTAINERS	Matrix: WATER	SOLID	OTHER	Preservation Method: HCl	HNO_3	H_2SO_4	NaOH	MeOH	Sampling: DATE	TIME	SAMPLER
53399-01	IDW-1			X							6/15/20	0935	JRS
02	IDW-2		X				X				6/15/20	0940	JRS

☐ VOC 8260 ☐ VOC 8260 NHDES ☐ VOC 8260 MADEP
☐ VOC 624 ☐ VOC BTEX MtBE, only ☐ VOC 8021VT
☐ VPH MADEP ☐ GRO 8015 ☐ 1,4-Dioxane
☐ VOC 524.2 ☐ VOC 524.2 NH List ☐ Gases-List:
☐ TPH ☐ DRO 8015 ☐ EPH MADEP ☐ TPH Fingerprint
☐ 8270PAH ☐ 8270ABN ☐ 625 ☐ EDB
☐ 8082 PCB ☐ 8081 Pesticides ☐ 608 Pest/PCB
☐ O&G 1664 ☐ Mineral O&G SM5520F
☐ pH ☐ BOD ☐ Conductivity ☐ Turbidity ☐ Apparent Color
☐ TSS ☐ TDS ☐ TS ☐ TVS ☐ Alkalinity ☐ Acidity
☐ RCRA Metals ☐ Priority Pollutant Metals ☐ TAL Metals ☐ Hardness
☐ Total Metals-list:
☐ Dissolved Metals-list:
☐ Ammonia ☐ COD ☐ TKN ☐ TN ☐ TON ☐ TOC
☐ T-Phosphorus ☐ Phenols ☐ Bacteria P/A ☐ Bacteria MPN
☐ Cyanide ☐ Sulfide ☐ Nitrate + Nitrite ☐ Ortho P
☐ Nitrate ☐ Nitrite ☐ Chloride ☐ Sulfate ☐ Bromide ☐ Fluoride
☐ Corrosivity ☐ Reactive CN ☐ Reactive S- ☐ Ignitibility/FP
☐ TCLP Metals ☐ TCLP VOC ☐ TCLP SVOC ☐ TCLP Pesticide
Subcontract: ☐ Grain Size ☐ Herbicides ☐ Formaldehyde ☐ PFC
Grab (G) or Composite (C)

TAT REQUESTED
Priority (24 hr)* ☐
Expedited (48 hr)* ☐
Standard ☐
(10 Business Days)
*Date Needed 6/26

See absoluteresourceassociates.com for sample acceptance policy and current accreditation lists.

SPECIAL INSTRUCTIONS
2°C rec @ ARA

REPORTING INSTRUCTIONS ☑ PDF (e-mail address) spencerj@wsginc.com
☐ HARD COPY REQUIRED ☑ EDD

RECEIVED ON ICE ☑ YES ☐ NO
TEMPERATURE 2.0 °C

CUSTODY RECORD
QSD-01 Revision 10/04/17

	Relinquished by Sampler:	Date	Time	Received by:	Date	Time
		6/16/20	1200		6/16/20	1230
	Relinquished by:	Date	Time	Received by:	Date	Time
	Relinquished by:	Date	Time	Received by Laboratory:	Date	Time
		6/16/20	1320		6/16/20	13:20

Risk Characterization Tables

Method 3 Imminent Hazard Assessment for Park Visitor Exposed to Chemicals in Soil - Shortform 2012 (sf12psih)

Index

Tab	
EPCs	Table PSIH-1: Select chemicals and enter Exposure Point Concentrations (EPCs). Estimated risks are presented to the right.
C Eq	Table PSIH-2: Equations to calculate cancer risks.
NC Eq	Table PSIH-3: Equations to calculate noncancer risks.
Exp	Table PSIH-4: Definitions and exposure factors.
Chem	Table PSIH-5: Chemical-specific data.
Cyanide	Table PSIH-6: Cyanide Calculation

Spreadsheets designed by Rafael McDonald, MassDEP
Questions and Comments may be addressed to:
Lydia Thompson
Massachusetts Department of Environmental Protection
Office of Research and Standards
One Winter Street
Boston, MA 02108 USA
Telephone: (617) 556-1165
Fax: (617) 556-1006
Email: Lydia.Thompson@state.ma.us

Park Visitor - Soil Imminent Hazard Evaluation: Table PSIH-1
Exposure Point Concentration (EPC)
Based on Visitor Ages 1-6 (Cancer) and 1-2 (Noncancer)

ShortForm Version 10-12
Vlookup Version v0315

ELCR (all chemicals) =
Subchronic HI (all chemicals) = 2.4E+00

****Do not insert or delete any rows****
Click on empty cell below and select OHM using arrow.

Oil or Hazardous Material	EPC (mg/kg)	$ELCR_{ingestion}$	$ELCR_{dermal}$	$ELCR_{total}$	Subchronic HQ_{ing}	Subchronic HQ_{derm}	Subchronic HQ_{total}	
LEAD	8.5E+02				2.3E+00	1.6E-01	2.4E+00	**Note! Lead IH HQ limit is 1, not 10.**

MassDEP ORS
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617-556-1165

Park Visitor - Soil: Table PSIH-2
Equations to Calculate Cancer Risk for Visitor (Age 1-6 years)

Cancer Risk from Ingestion

$$ELCR_{ing} = LADD_{ing} * CSF$$

$$LADD_{ing} = \frac{[OHM]_{soil} * IR_x * RAF_{c\text{-}ing} * EF_{ing} * ED * EP * C}{BW * AP_{lifetime}}$$

Cancer Risk from Dermal Absorption

$$ELCR_{derm} = LADD_{derm} * CSF$$

$$LADD_{derm} = \frac{[OHM]_{soil} * SA * RAF_{c\text{-}derm} * SAF * EF_{derm} * ED * EP * C}{BW * AP_{lifetime}}$$

Vlookup Version v0315

Parameter	Value	Units
CSF	OHM specific	$(mg/kg\text{-}day)^{-1}$
LADD	age/OHM specific	mg/kg-day
$[OHM]_{soil}$	OHM specific	mg/kg
IR	100	mg/day
$RAF_{c\text{-}ing}$	OHM specific	dimensionless
$RAF_{c\text{-}derm}$	OHM specific	dimensionless
$EF_{ing,derm}$	0.247	event/day
ED	1	day/event
EP	5	years
C	0.000001	kg/mg
BW	14.6	kg
$AP_{(lifetime)}$	70	years
SA	2231	cm^2/day
SAF	0.35	mg/cm^2

MassDEP ORS
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Park Visitor - Soil: Table PSIH-3

Equations to Calculate Noncancer Risk for Visitor (Age 1-2 years)

Vlookup Version v0315

Noncancer Risk from Ingestion

$$HQ_{ing} = \frac{ADD_{ing}}{RfD_{subchronic}}$$

$$ADD_{ing} = \frac{[OHM]_{soil} * IR * RAF_{nc\text{-}ing} * EF_{ing} * ED * EP * C}{BW * AP}$$

Noncancer Risk from Dermal Absorption

$$HQ_{derm} = \frac{ADD_{derm}}{RfD_{subchronic}}$$

$$ADD_{derm} = \frac{[OHM]_{soil} * SA * RAF_{nc\text{-}derm} * SAF * EF_{derm} * ED * EP * C}{BW * AP}$$

Parameter	Value	Units
RfD	OHM specific	mg/kg-day
ADD	OHM specific	mg/kg-day
$[OHM]_{soil}$	OHM specific	mg/kg
IR	100	mg/day
$RAF_{nc\text{-}ing}$	OHM specific	dimensionless
$RAF_{nc\text{-}derm}$	OHM specific	dimensionless
$EF_{ing,derm}$	0.428	event/day
ED	1	day/event
EP	0.577	years
C	0.000001	kg/mg
BW	10.7	kg
AP	0.577	year
SA	1670	cm^2/day
SAF	0.35	mg/cm^2

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Park Visitor - Soil: Table PSIH-4
Definitions and Exposure Factors

Vlookup Version v0315

Parameter	Value	Units	Notes
ELCR - Excess Lifetime Cancer Risk	chemical specific	dimensionless	Pathway specific (ing =ingestion, derm=dermal)
CSF - Cancer Slope Factor	chemical specific	$(mg/kg\text{-}day)^{-1}$	see Table PSIH-5.
LADD - Lifetime Average Daily Dose	chemical specific	mg/kg-day	Pathway specific - see Table PSIH-2.
HQ - Hazard Quotient	chemical specific	dimensionless	Pathway specific (ing =ingestion, derm=dermal) - see Table PSIH-3.
RfD - Reference Dose	chemical specific	mg/kg-day	see Table PSIH-5.
ADD - Average Daily Dose	chemical specific	mg/kg-day	Pathway specific
EPC - Exposure Point Concentration	chemical specific	mg/kg	
IR - Soil Ingestion Rate	100	mg/day	MADEP. 1995. Guidance for Disposal Site Risk Characterization. Appendix Table B-3.
RAF_c - Relative Absorption Factor for Cancer Effects	chemical specific	dimensionless	Adjusts estimated dose to conform to the revelant CSF. See Table PS-6
RAF_{NC} - Relative Absorption Factor for non-Cancer Effects	chemical specific	dimensionless	Adjusts estimated dose to conform to the revelant RfD. See Table PS-6
$EF_{subchronic}$ - Exposure Frequency for subchronic exposure	0.428	event/day	3 events/week
$EF_{lifetime}$ - Exposure Frequency for chronic or lifetime exposure	0.247	event/day	3 events/week, 30 weeks/year
ED - Exposure Duration	1	day/event	
$EP_{(1-2)}$ - Exposure Period for age group 1-2	0.577	years	30 weeks
$EP_{(1-6)}$ - Exposure Period for age group 1-6	5	years	
$BW_{(1-2)}$ - Body Weight for age group 1-2	10.7	kg	U.S. EPA. 1997. Exposure Factors Handbook. Table 7-7, females.
$BW_{(1-6)}$ - Body Weight for age group 1-6	14.6	kg	Ibid
$AP_{subchronic}$ - Averaging Period for subchronic noncancer	0.577	years	30 weeks
$AP_{lifetime}$ - Averaging Period for cancer/lifetime	70	years	
$SA_{(1-2)}$ - Surface Area for age group 1-2	1670	cm^2/day	50th percentile of face (1/3 head), forearms, hands, lower legs, and feet for females MADEP 1995 Guidance for Disposal Site Risk Characterization, Appendix Table B-2.
$SA_{(1-6)}$ - Surface Area for age group 1-6	2231	cm^2 / day	Ibid
SAF - Surface Adherence Factor	0.35	mg_{soil} / cm^2	All SAFs developed for ShortForm according to procedure outlined in MA DEP Technical Update: Weighted Skin-Soil Adherence Factors, April 2002

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Park Visitor - Soil: Table PSIH-5
Chemical-Specific Data

Vlookup Version v0315

Oil or Hazardous Material	CSF $(mg/kg\text{-}day)^{-1}$	$RAF_{c\text{-}ing}$	$RAF_{c\text{-}derm}$	Subchronic RfD mg/kg-day	Subchronic $RAF_{nc\text{-}ing}$	Subchronic $RAF_{nc\text{-}derm}$
LEAD				7.5E-04	0.5	0.006

MassDEP ORS
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617-556-1165

Photo Documentation

Immediate Response Action (IRA) Plan
618R Waverly Street, Framingham, MA
Release Tracking Number (RTN) 3-36304

PHOTO DOCUMENTATION

Photo 1
View looking south at the northeastern corner of the temporary fence installed at the Site.

Photo 2
Close up of signage on temporary fence.

Photo 3
View looking south at the northwestern corner of the temporary fence installed at the Site. The posted signage is visible in the center of the photo.